

brother

# BUTTON FEEDER

CB3-B917/BA-10

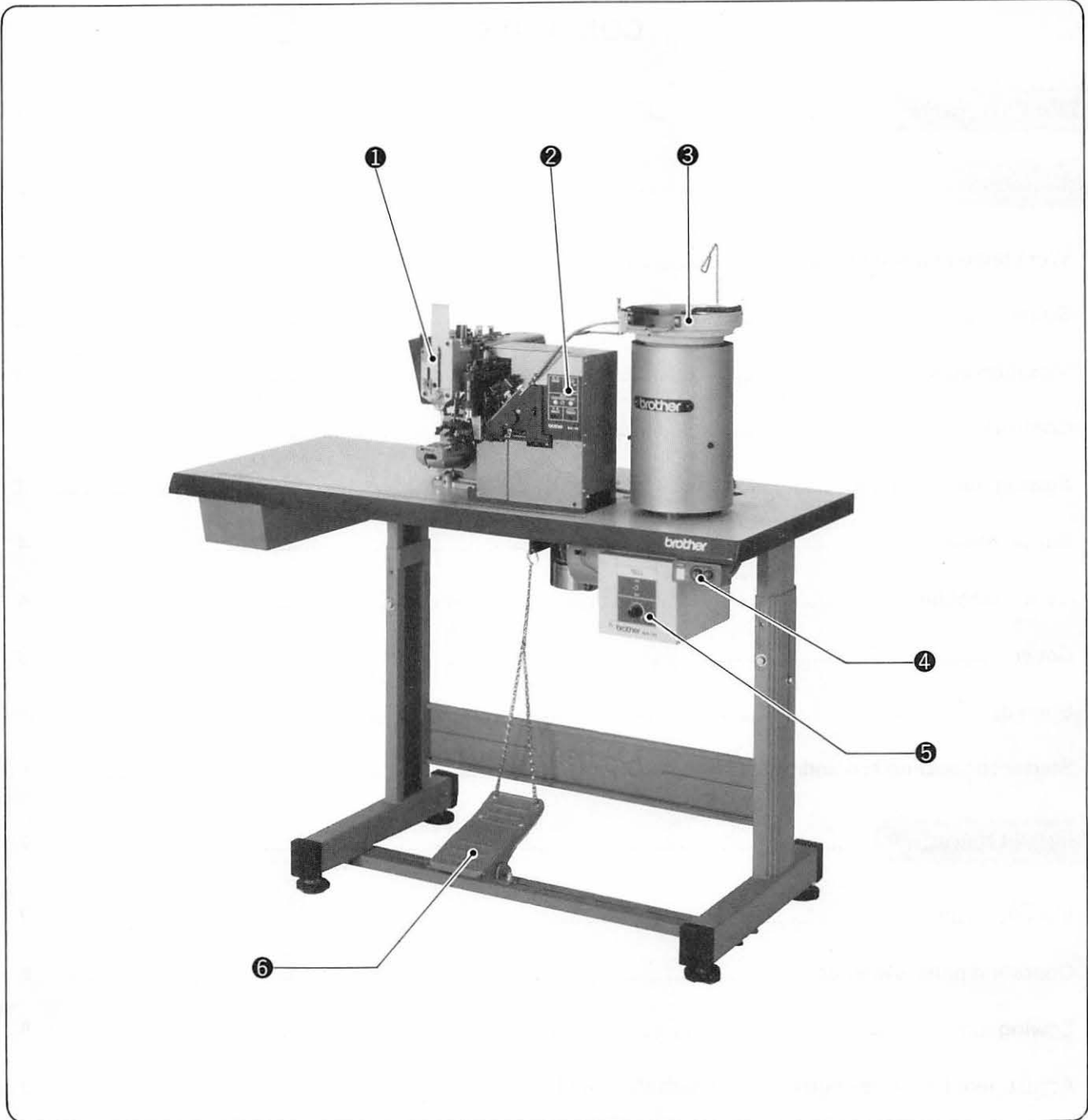
## INSTRUCTION MANUAL



# CONTENTS

<b>Main Part Names</b> .....	1
<b>Installation</b> .....	2
1 Work table preparation .....	2
2 Starter .....	2
3 Vibration bowl .....	3
4 Control box .....	3
5 Sewing machine head .....	3
6 Button feeder .....	4
7 Cord connections .....	4
8 Cover .....	6
9 Shooter .....	6
10 Starter connecting rod and operating lever .....	6
<b>Correct Operation</b> .....	7
1 Vibration ball .....	7
2 Operation panel switches .....	8
3 Sewing .....	8
4 Adjustment for excess buttons in the button shooter .....	8
5 Tilting the head .....	9
6 Needle installation .....	9
<b>Button Replacement</b> .....	10
1 Adjustment for buttons of different external diameter .....	10
2 Adjustment when button thickness changes .....	11
3 Needle location adjustment .....	12
<b>Adjustment Guide</b> .....	15

# Main Part Names



- ① Machine
- ② Button Feeder
- ③ Vibration Ball
- ④ Power Switch
- ⑤ Control Box
- ⑥ Start Pedal

Model	BC3-B917
Button type	Flat
Button diameter	9~22 mm
Button thickness	1.8~3.5 mm
Button thread hole diameter	1.0, 1.2, 1.5 mm
	DC Motor

## Cautions on Use

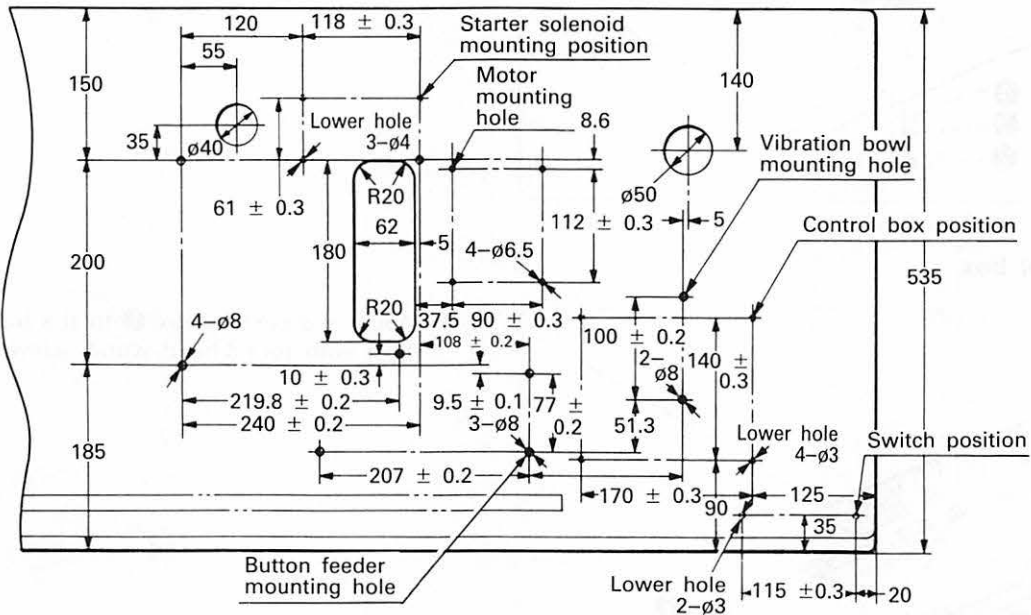
The sewing machine will continue to attach buttons as long as the treadle is depressed.  
Be sure to turn the power off before beginning any adjustment unless specifically directed to turn the power on.

## Installation

- \* Please be sure to use a table 40 mm in thickness.  
In case that the table is thickened or thinner than 40 mm, malfunction occurs.

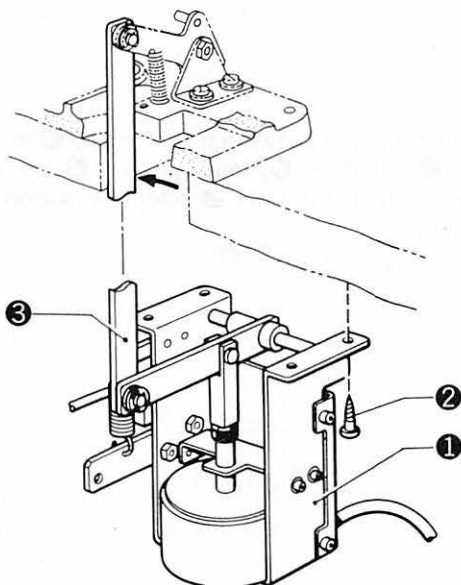
### 1 Work table preparation

- ★ Refer to the diagram below to prepare the work table for sewing machine installation.  
(The lower hole for the starter should be  $\phi 4$  dia. and about 30 mm deep; that for the control box power switch should be  $\phi 3$  and about 20 mm deep.)

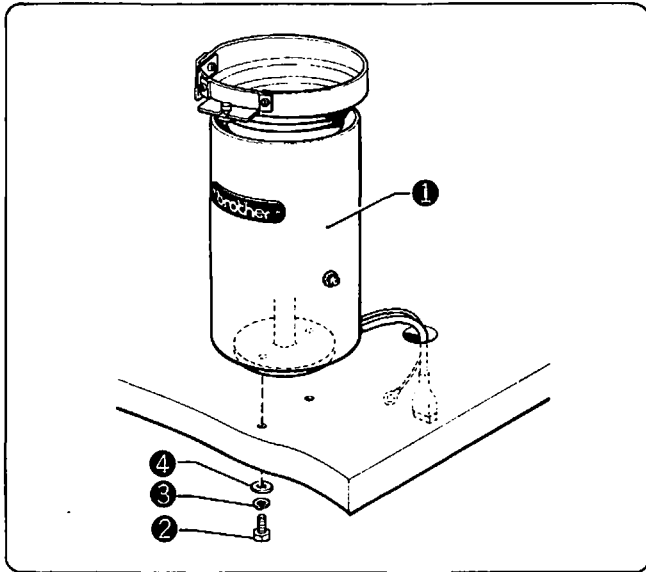


### 2 Starter

1. Align the mounting holes in the starter ① with the holes in the table.
2. Secure the starter ① to the bottom of the table with round-head wood screws ② and the bed mounting screw (1 screw).
  - \* Be sure the starter connecting rod ③ is on the same side as the sewing machine operating lever.

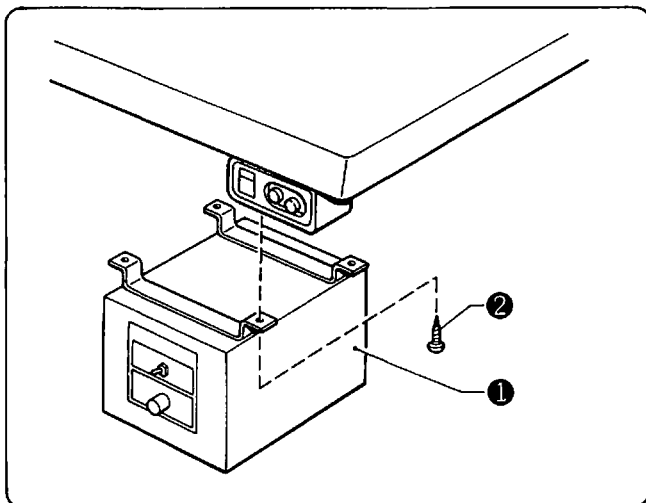


### ③ Vibration bowl



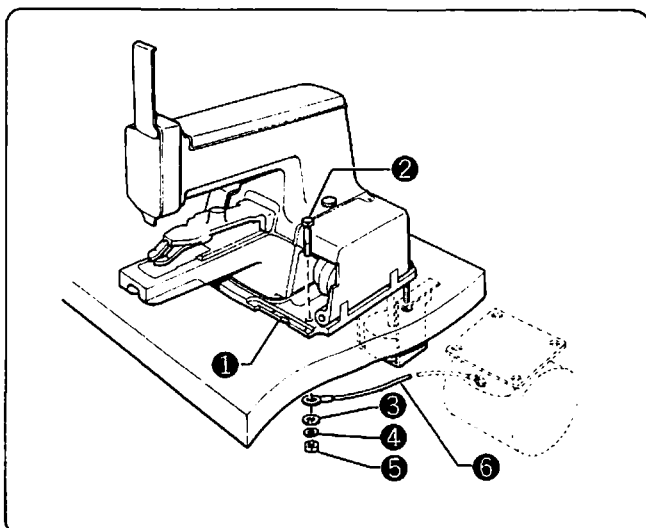
1. Install the vibration bowl ① with bolt ②, lock washer ③, and washer ④.
2. Pass the wires from the vibration bowl ① through the hole in the table.

### ④ Control box



1. Mount the control box ① to the bottom of the work table with round-head wood screws ②.

### ⑤ Sewing machine head

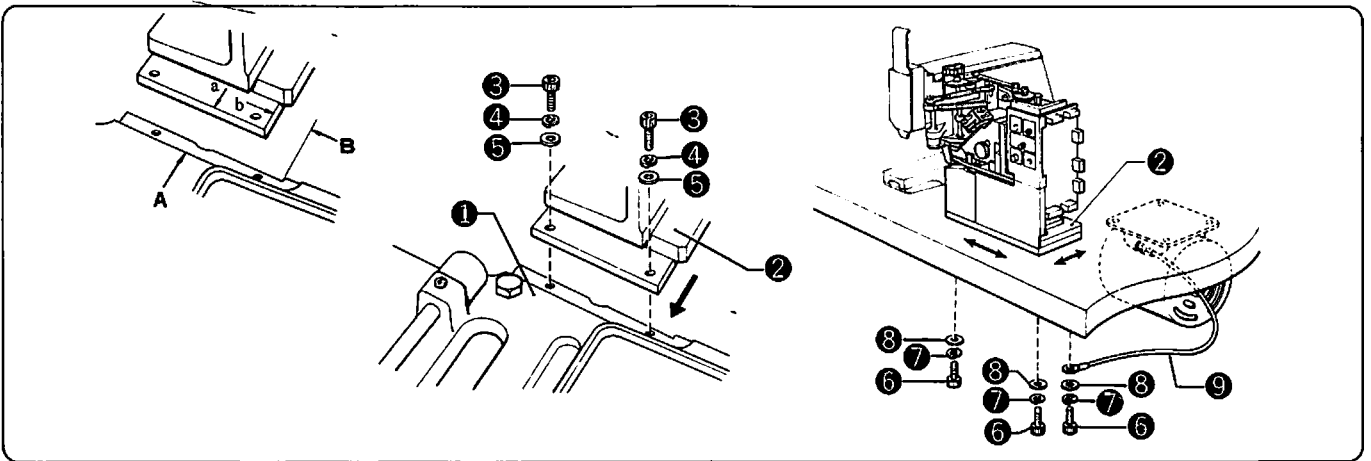


1. Lightly secure the sewing machine bed ① in place with bolts ②, washers ③, lock washers ④ and nuts ⑤.
2. Firmly tighten the nuts ⑤ after the button feeder is installed.  
(Connect ground wire ⑥)



## ⑥ Button feeder

★ Tilt the sewing machine.



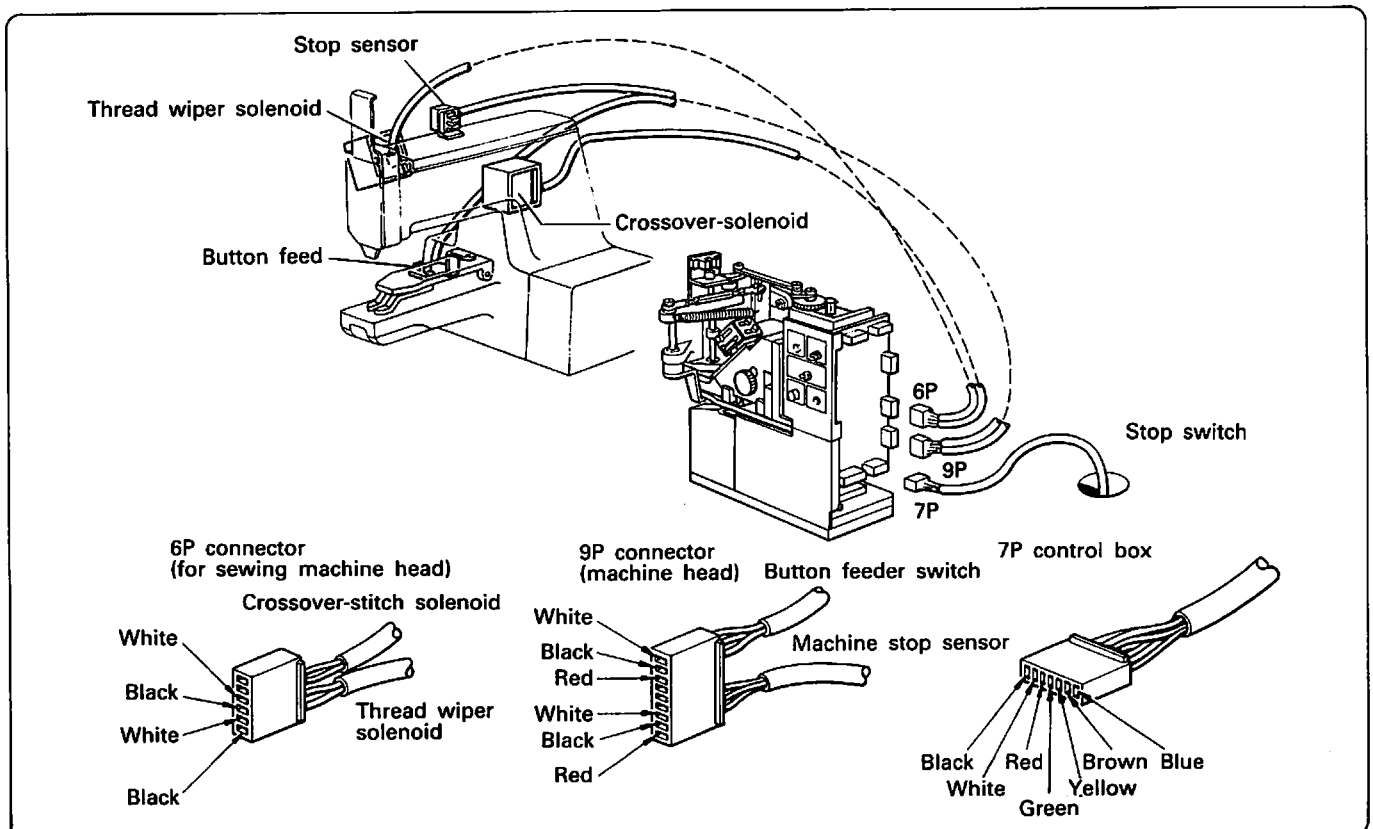
1. Align the corners of the machine bed ① and button feeder base ② (A and B on machine bed ① with a and b, respectively, on feeder base ②), and secure firmly with washer ⑤, lock washer ④, and bolt ③. Make sure there is no film left at A on machine bed ①.
2. Slide the sewing machine bed table ① and button feeder base ② as necessary to pass Allen bolts ⑥ with lock washers ⑦ and washers ⑧ up through the screw holes from the bottom of the table. (Connect ground wire ⑨.)  
Now firmly tighten the nuts on the bolts holding the sewing machine bed table in place ①. (Refer to ⑤ on the previous page.)

## ⑦ Cord connections

★ Connect all wires and connectors as indicated in the figures below.

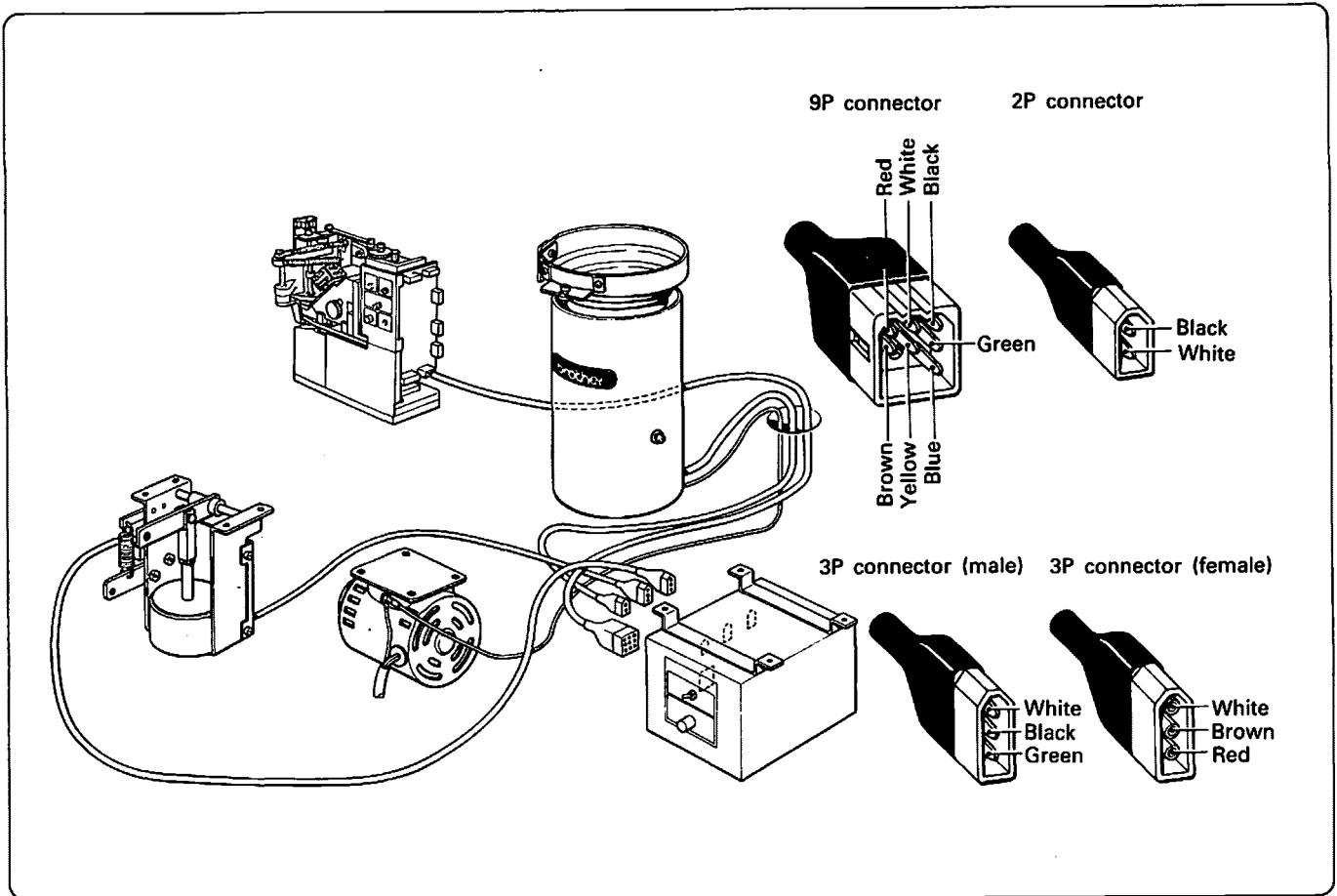
### Button feeder connection

\* Pull on the connector to make sure it will not come disconnected after connecting the pins.

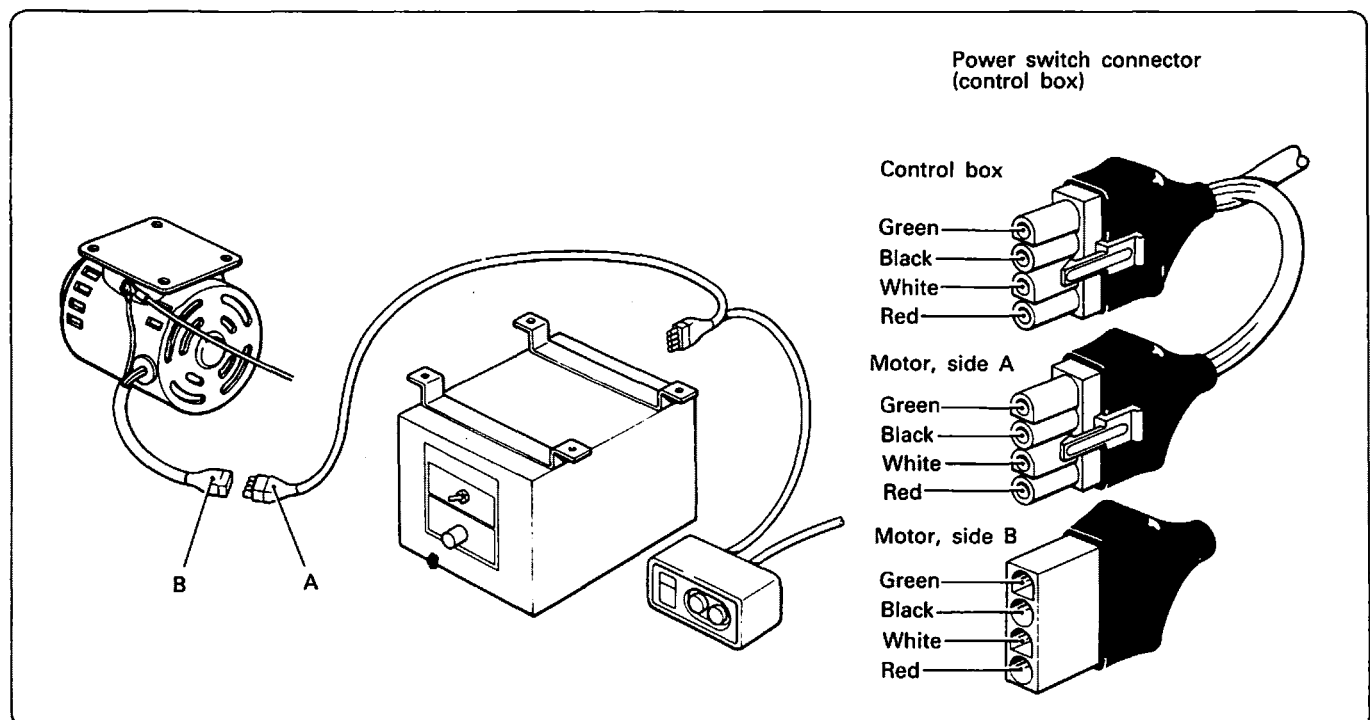


**Control box connection**

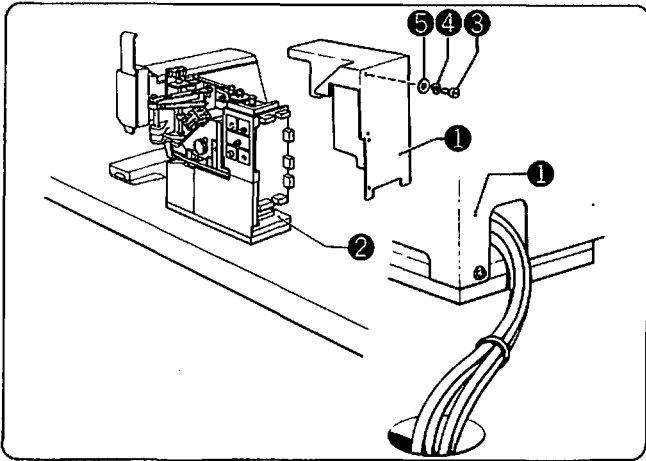
★ Connect the ground wire from the vibration bowl to the motor.



**Power switch connection**

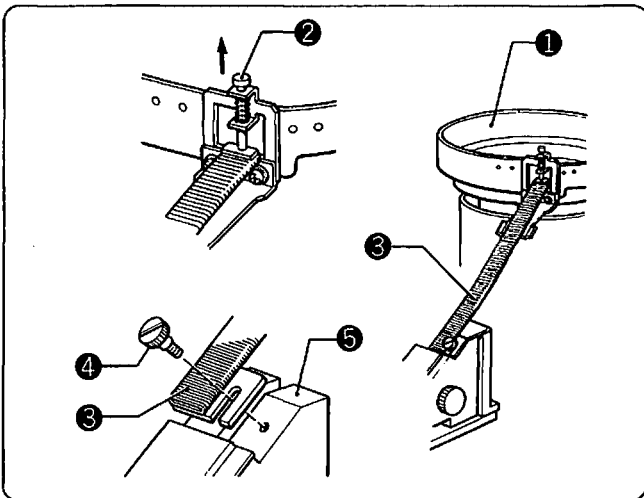


### 8 Cover



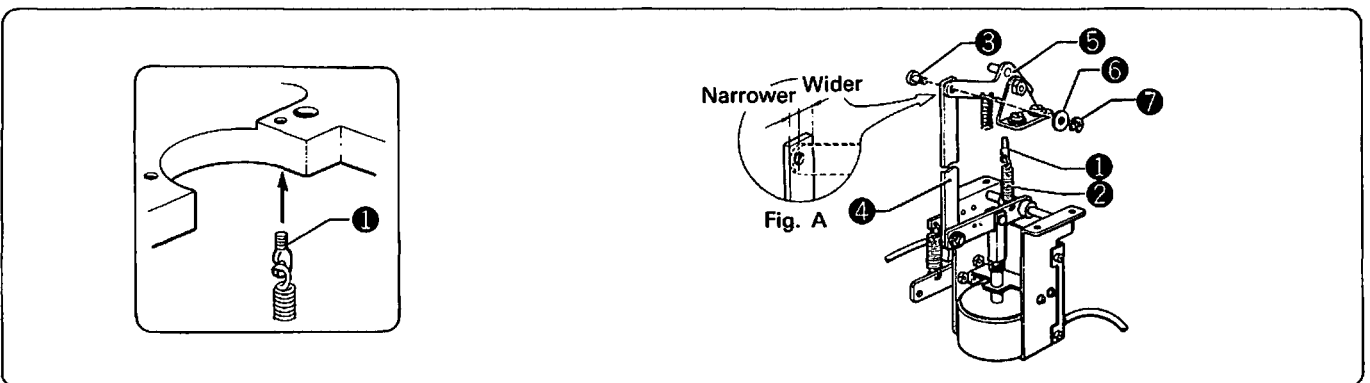
- ★ Attach the button feeder cover 1 to the button feeder 2 with screw 3, lock washer 4, and washer 5.
- \* Be sure to pass the wires through the hole in the cover when attaching the button feeder cover 1.

### 9 Shooter



1. Raise the shooter lock pin 2 on the vibration bowl 1, and secure the shooter 3 by inserting the pin 2 through the notch in the shooter.
2. Secure the shooter 3 with thumb screw 4 on button feeder 5.

### 10 Starter connecting rod and operating lever

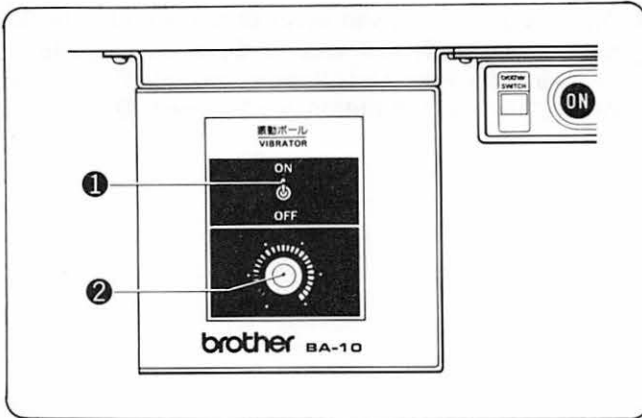


1. Tilt the sewing machine.
  2. Mount the spring peg 1 on the bottom of the sewing machine bed table.
  3. Mount the operating lever spring 2 on the peg.
  4. Pass the starter connecting rod pin 3 through the starter connecting rod 4 and operating lever 5, and secure the pin with washer 6 and snap ring 7.
- \* After this installation refer to page 22 and readjust the starter solenoid.
  - \* As shown in the figure above, the hole in the starter connecting rod 4 are not located in the center of the rod. Mount the rod with the wider hole-to-edge gap towards the operating lever spring 2.



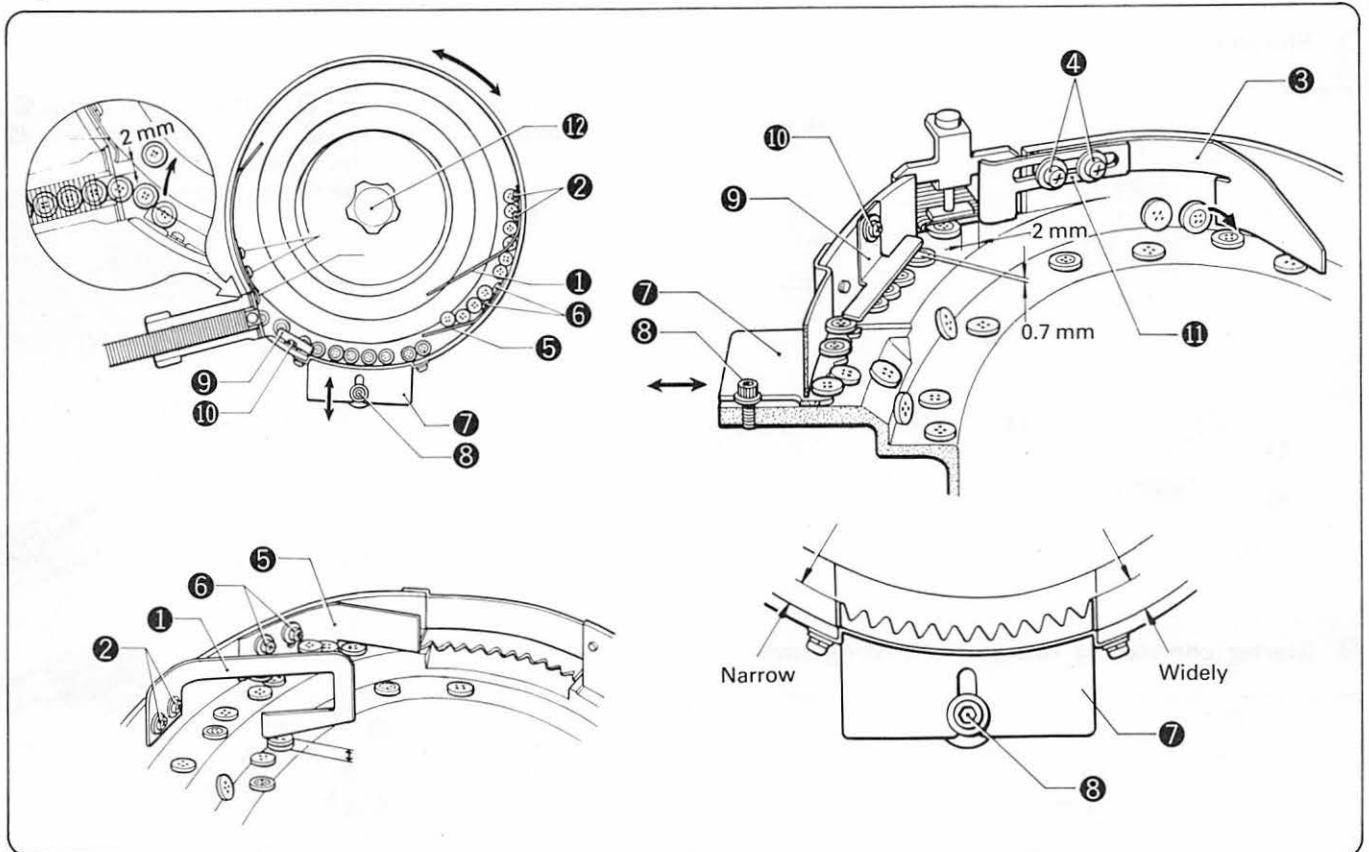
# Correct Operation

## 1 Vibration ball



- (1) Switch ON the power switch.
  - (2) Switch ON the switch ① for the control box.
  - (3) Turn the adjustment knob ②.
- The amount of vibration of the vibration ball will increase when the knob is turned to the right, and will decrease when the knob is turned to the left.

## Adjustment of the vibration ball

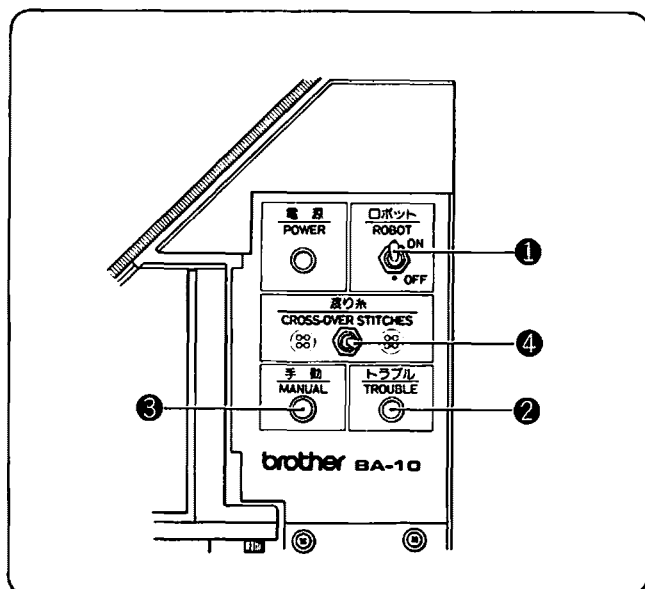


★ The vibrating bowl arranges the face of the buttons in the same direction, and feeds the buttons to the shooter. If the buttons are not fed properly, adjust as follows.

- (1) Loosen and adjust set screw ② so that two buttons can pass through the gap between the bottom of alignment plate B ① and the vibrating bowl.
- (2) Loosen and adjust set screw ④ so that one button can pass through the gap between the bottom of alignment plate C ③ and the vibrating bowl.  
Make sure any standing buttons are turned down, and that the buttons flow smoothly.
- (3) Loosen and adjust set screw ⑥ so that one button can pass through the gap between the bottom of alignment plate A ⑤ and the vibrating bowl.
- (4) Loosen and adjust bolt ⑧ so that the button faces are aligned when the sorting plate ⑦ is slid in and out.
- (5) Loosen and adjust screw ⑩ so that the gap between the bottom of the height control plate ⑨ and the button top is approximately 0.7 mm.
- (6) Loosen screw ④, and adjust the gap between the button and button width control plate ⑪ to approximately 2 mm so that the buttons will be fed smoothly to the shooter.
- (7) When buttons jam at the entrance to the shooter, loosen thumb screw ⑫ and turn so that the buttons do not jam at the entrance.

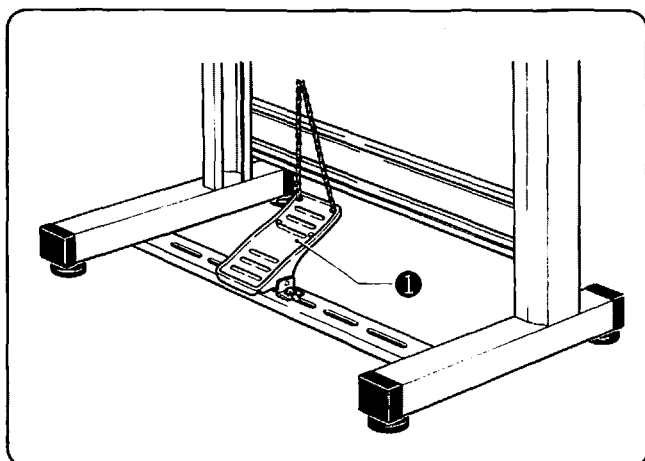
\* The vibrating bowl should be adjusted each time the buttons are changed.

## ② Operation panel switches



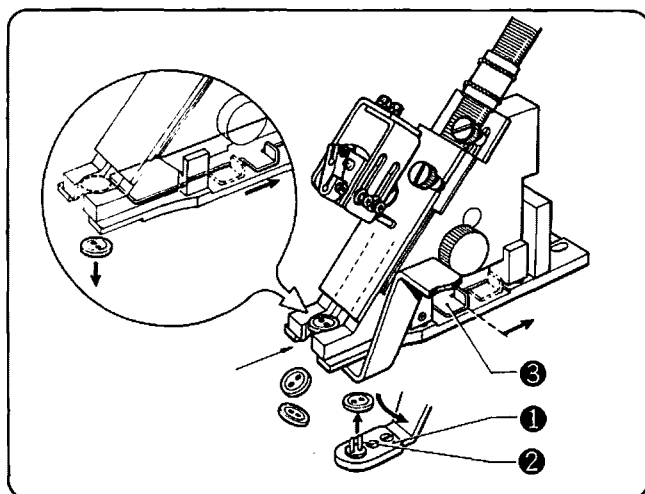
1. Button feeder switch
  - \* Be sure to set the switch ① to ON.
2. Trouble indicator
  - (1) When buttons are being fed to the button clamp, the trouble indicator ② will be OFF.
  - (2) When the trouble indicator ② is flashing, buttons are not supplied to the button clamp.
 If the emergency stop indicator on the operation panel is blinking, press EMERGENCY STOP to turn the indicator off.
3. Manual switch ③
  - ★ Operates as the button-feeding switch.
  - \* Only operable when the mode switch is set to "head" and the stop lamp is not flashing.
4. Crossover-stitch switch ④
  - ★ Can be used for selection of crossover stitch or no crossover stitch for 4-hole buttons.
  - \* When "no crossover" is selected, sewing is started twice for one button.
  - \* If "crossover" is selected, sewing is started only once.

## ③ Sewing



- ★ Turn the power switch on. If a button is in the button clamp, the button will be sewn on when the start pedal ① is pressed.
- Buttons will continue to be attached if the pedal ① is held depressed. Release the pedal ①.
- To feed a button to the button clamp, turn the vibrating bowl and button feeder switch on.

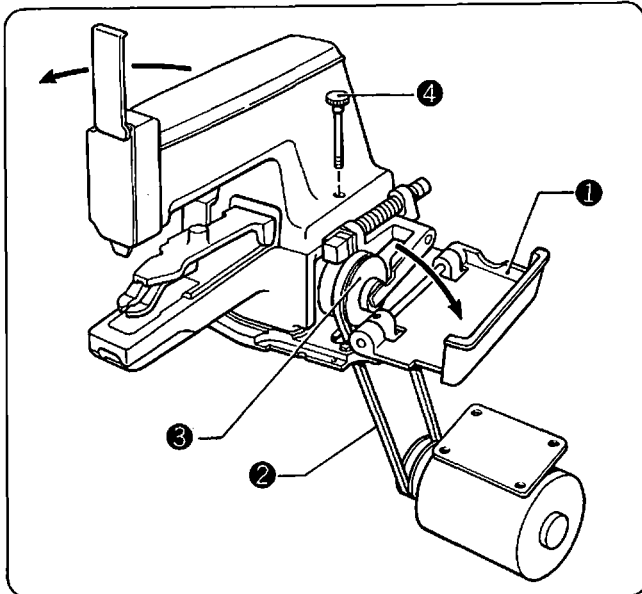
## ④ Adjustment for excess buttons in the button shooter



- (1) Turn the button carrier ① by hand in the direction of the arrow, and remove any button(s) from the button carrier pin ②.
- (2) With the button carrier ① in this position, pull lever ③ to remove any excess buttons from the shooter at point A.
- (3) Press the manual switch to feed a button to the button clamp. Press the pedal to begin sewing.

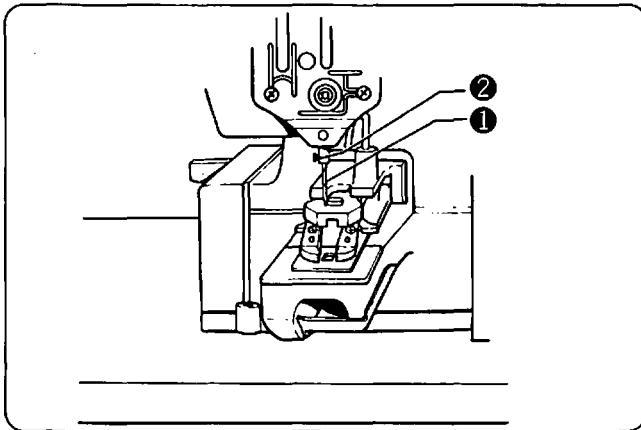
## 5 Tilting the head

★ Before making this adjustment, be sure to switch OFF the power switch and stop the motor pulley.

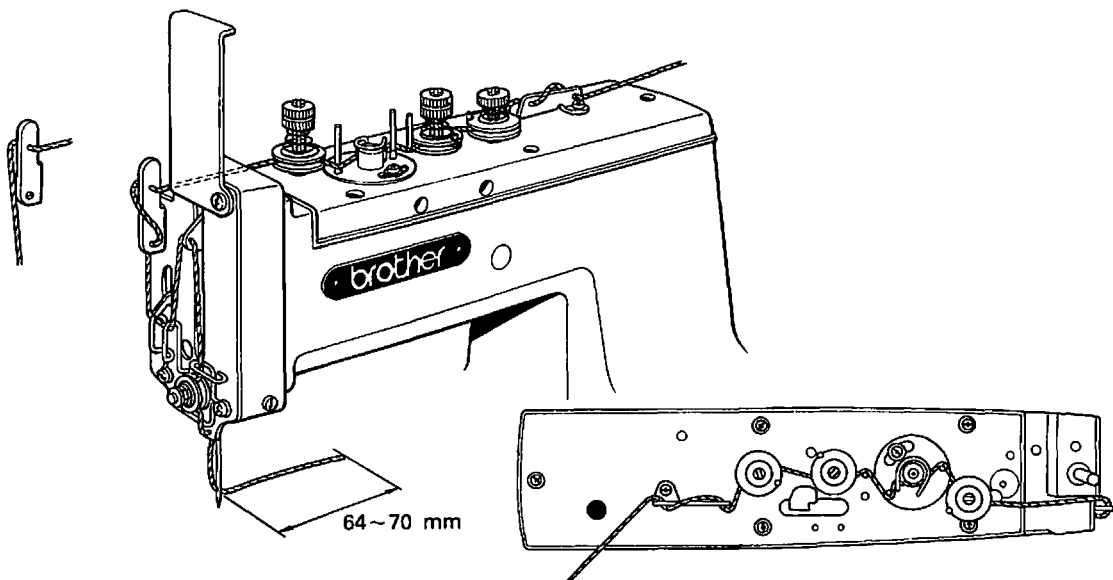


- (1) Remove bed base cover R ① and remove the V-belt ②. For installation and removal of the V-belt ②, it can be more easily removed while the pulley ③ at the machine side is being manually turned.
- (2) Remove the arm bed holding belt ④ and tilt the machine downward.

## 6 Needle installation



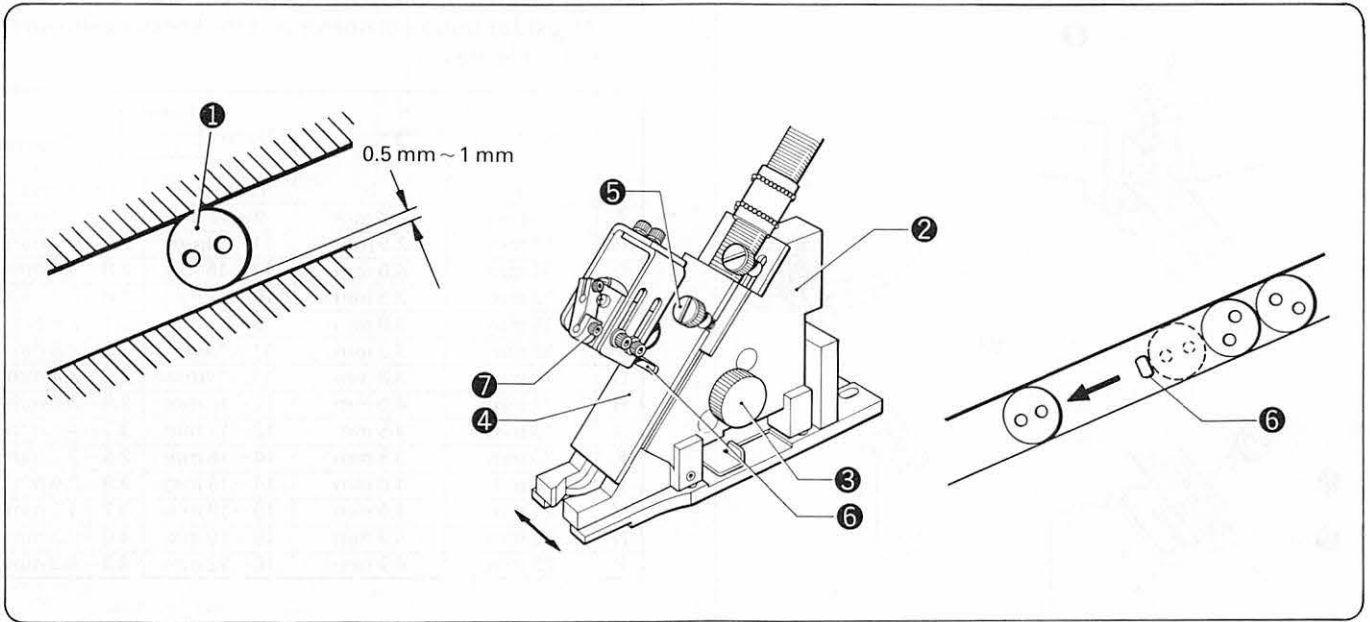
- (1) With the long groove of the needle ① facing to the front, insert the needle all the way in and secure with set screw ②. Use TQ x 1



# Button Replacement

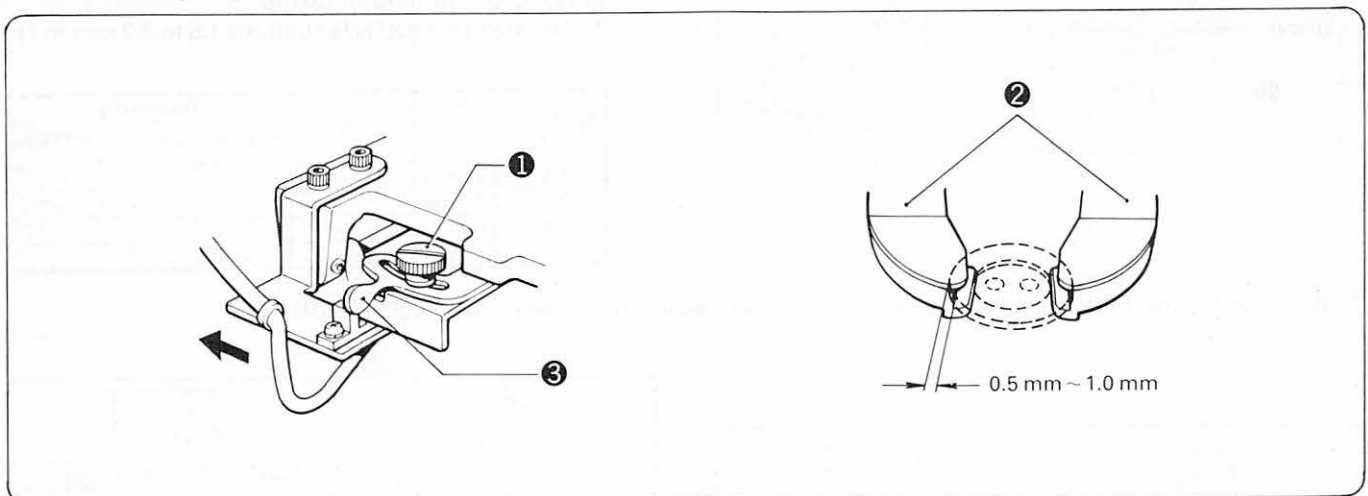
## 1 Adjustment for buttons of different external diameter

### 1. Bed slide adjustment



- (1) Adjust the width of the slide table assembly **2** by using the slide table screw **3** so that the buttons **1** pass along smoothly.  
The bed slide table assembly **2** can be adjusted for button diameters of 9 to 22 mm.  
Adjust so that the clearance between the buttons **1** and the edge of the slide table assembly **2** is 0.5~1.0 mm.
- (2) There are two different button upper covers **4**. The cover for standard button sizes of 9 to 17 mm is initially installed.  
To attach buttons from 15 to 22 mm in diameter, loosen screw **5** and replace cover **4** (nonstandard accessories).
- (3) Adjust the button guide shaft and the plate cam so that the buttons are sent along one by one. Loosen the thumb screw **7** and adjust button stopper shaft **6** so that button stopper shaft **6** intervenes between buttons.

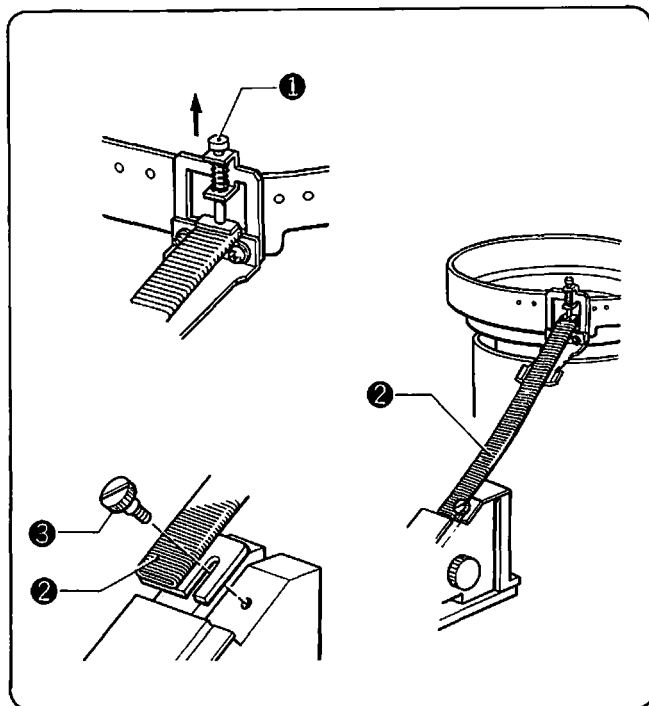
### 2. Button clamp adjustment



- (1) Loosen step screw **1** and insert a button into the button clamp **2**.
- (2) Lightly tighten step screw **1**, and remove the button.
- (3) Close the button clamp **2** opening 0.5 to 1.0 mm using the plate **3**.
- (4) Firmly tighten step screw **1**.



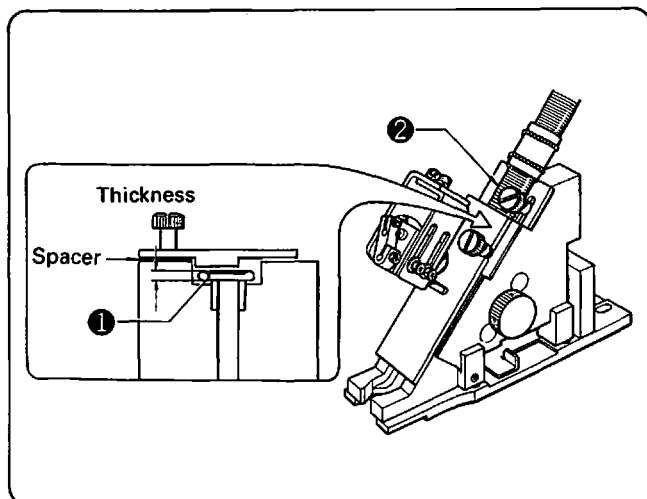
### 3. Shooter replacement



- (1) Lift the shooter lock pin ①, and remove the shooter ②.
- (2) Remove thumb screw ③, and replace the shooter ②. Adjust for button diameter and thickness as shown in the table below.

Mark	Shooter		Button	
	a	b	Diameter	Thickness
A	15 mm	2.7 mm	9~12 mm	1.9~2.3 mm
B	17 mm	3.5 mm	11~14mm	2.5~3.1 mm
C	25 mm	4.0 mm	12~16mm	2.8~3.6 mm
D	13 mm	2.5 mm	16~22 mm	1.8~2.1 mm
E	13 mm	3.0 mm	9~12 mm	2.1~2.6 mm
F	15 mm	3.2 mm	11~14mm	2.2~2.8 mm
G	15 mm	3.8 mm	11~14mm	2.7~3.4 mm
H	17 mm	4.0 mm	12~16 mm	2.8~3.6 mm
J	18 mm	4.5 mm	12~17 mm	3.2~4.1 mm
K	20 mm	3.5 mm	14~18 mm	2.5~3.1 mm
L	20 mm	4.0 mm	14~18 mm	2.8~3.6 mm
M	21 mm	4.5 mm	15~19 mm	3.2~4.1 mm
N	22 mm	5.7 mm	15~19 mm	4.0~5.3 mm
P	25 mm	4.7 mm	16~22 mm	3.3~4.3 mm

### ② Adjustment when button thickness changes



- (1) Check to be sure that buttons ① are being smoothly sent to the shooter ②. Replace the shooter.
- (2) Adjust the bed slide height so the buttons ① slide smoothly. Install accessory spacers as required by the button thickness.
- (3) Check to be sure that buttons are being securely grasped by the button clamp.

\* The standard gap is for buttons 1.8 to 2.2 mm thick.

Button thickness	Spacers as thickness	No	Accessory		
			0.4mm	0.8 mm	1.2 mm
1.8 ~ 2.2 mm		○	/	/	/
2.2 ~ 2.6 mm		/	○	/	/
2.6 ~ 3.0 mm		/	/	○	/
3.0 ~ 3.4 mm		/	/	/	○

\* When using the button catch plate 4 mm in height, attach the washer (No. S06029-001).

	a: hole gap	Øb: hole	h: height
A	3.3 mm	1.2 mm	3
B	3.8 mm	1.2 mm	3
C	2.6 mm	1.0 mm	4
D	2.8 mm	1.2 mm	4
E	3.0 mm	1.2 mm	4
F	3.2 mm	1.2 mm	4
G	3.4 mm	1.2 mm	4
H	3.6 mm	1.2 mm	4
J	3.8 mm	1.2 mm	4

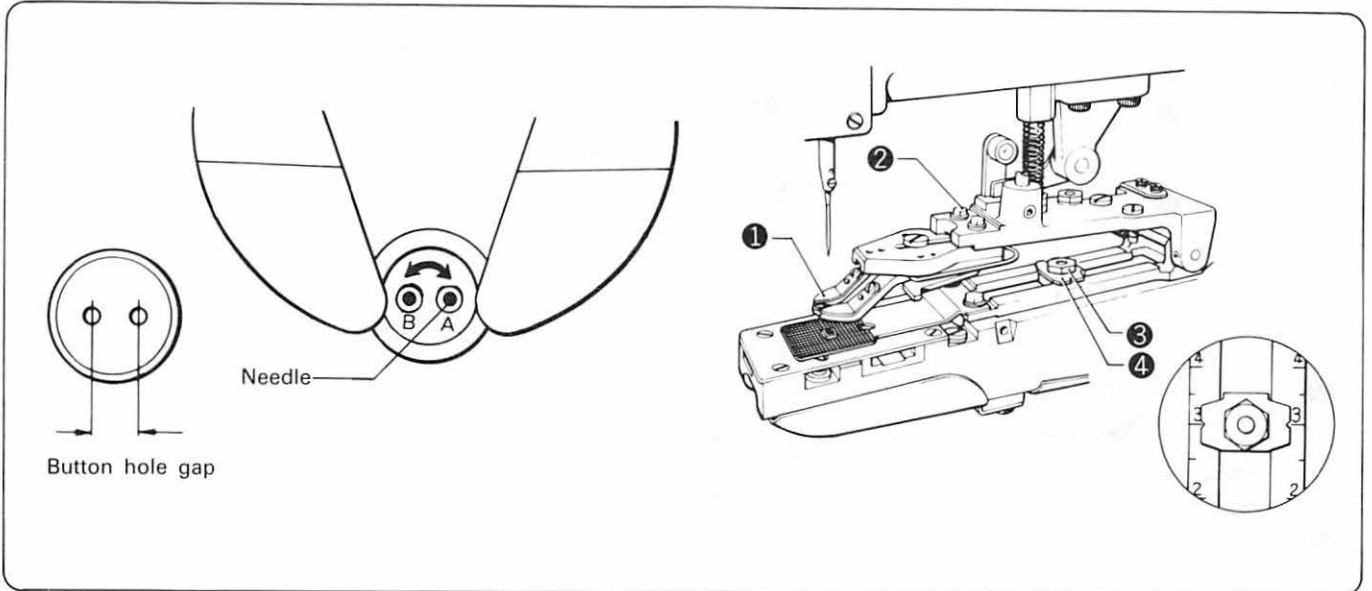
	a: hole gap	Øb: hole	h: height
A	2.7 mm	1.2 mm	3
B	3.1 mm	1.2 mm	3
C	2.4 mm	1.2 mm	3
D	2.2 mm	1.0 mm	4
E	2.4 mm	1.0 mm	4
F	2.6 mm	1.2 mm	4
G	2.8 mm	1.2 mm	4
H	3.0 mm	1.2 mm	4
J	3.2 mm	1.2 mm	4
K	3.4 mm	1.5 mm	4
L	3.6 mm	1.5 mm	4



### ③ Needle location adjustment

★ The adjustment is required whenever the button carrier is replaced (button hole gap is changed).  
Make sure the needle is not bent.

#### 1. Horizontal feed position



- (1) Insert a button into the button clamp ①.
- (2) Disengage the clutch, and turn the pulley to align the needle with button hole A.
- (3) If the needle and button hole cannot be aligned, loosen bolt ②, and shift the button clamp ① so that the needle will enter the center of button hole A.
- (4) Turn the pulley to align the needle with button hole B.

If the horizontal feed position is not properly adjusted, loosen horizontal feed adjustment nut ③ and adjust scale ④.

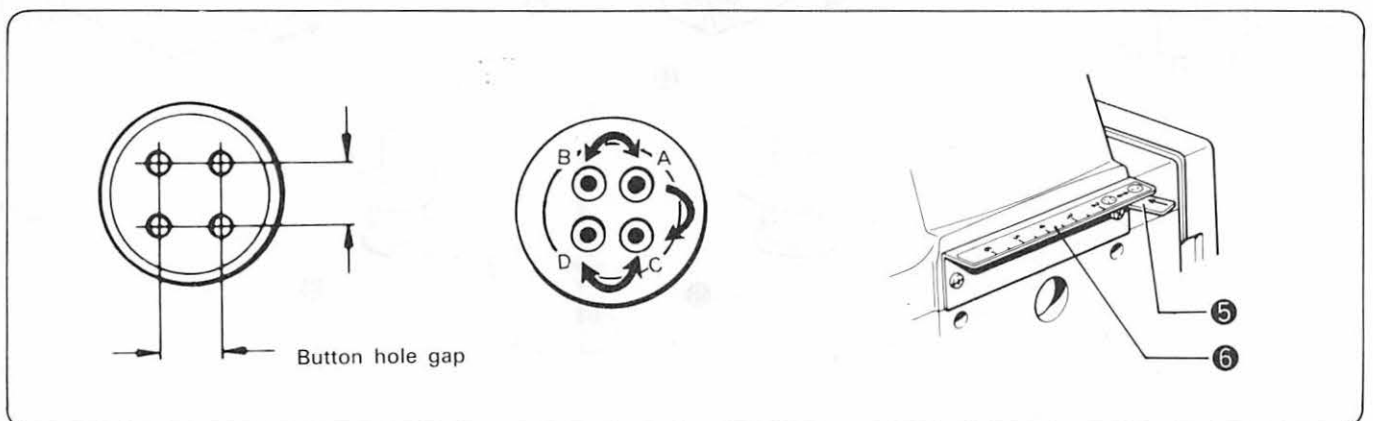
After adjusting the button clamp ① so the needle enters the center of button holes A and B, firmly tighten bolt ②.

\* If the pulley is turned by hand, be sure to turn the pulley through the end of the stitch.

#### 2. Vertical feed position

★ When sewing buttons with two holes, set the vertical feed adjustment lever ⑤ to ∞.

★ When sewing buttons with four holes, set the vertical feed adjustment lever ⑤ to the button hole gap on the horizontal feed lever scale.



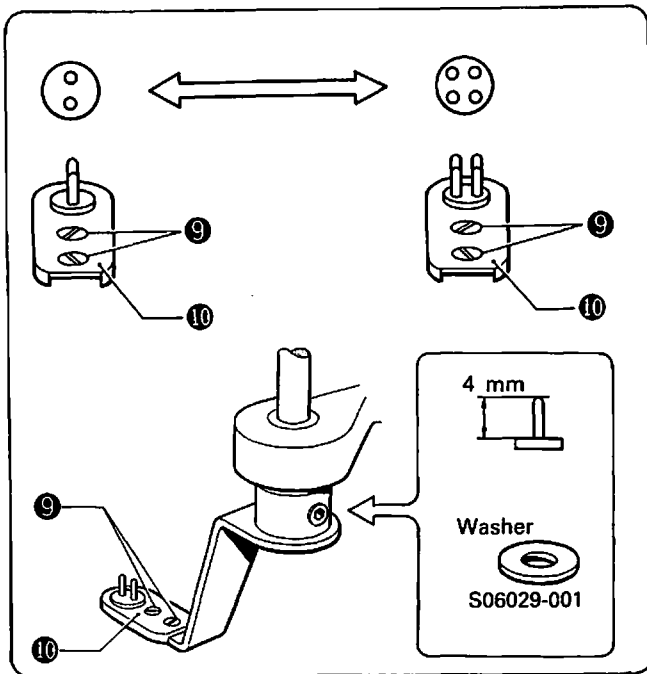
- (1) After adjusting the horizontal feed position, continue turning the pulley to align the needle with button hole C.
- (2) Adjust vertical feed adjustment lever ⑤ to the vertical feed scale ⑥.
- (3) Loosen bolt ②, and shift the button clamp ① so that the needle will enter the center of button holes A and C.
- (4) Turn the pulley to check that the needle enters the center of button holes C and D.

\* Check that the needle enters the center of button holes A, B, C, and D.

Adjust the horizontal feed for button holes A ↔ B and C ↔ D.

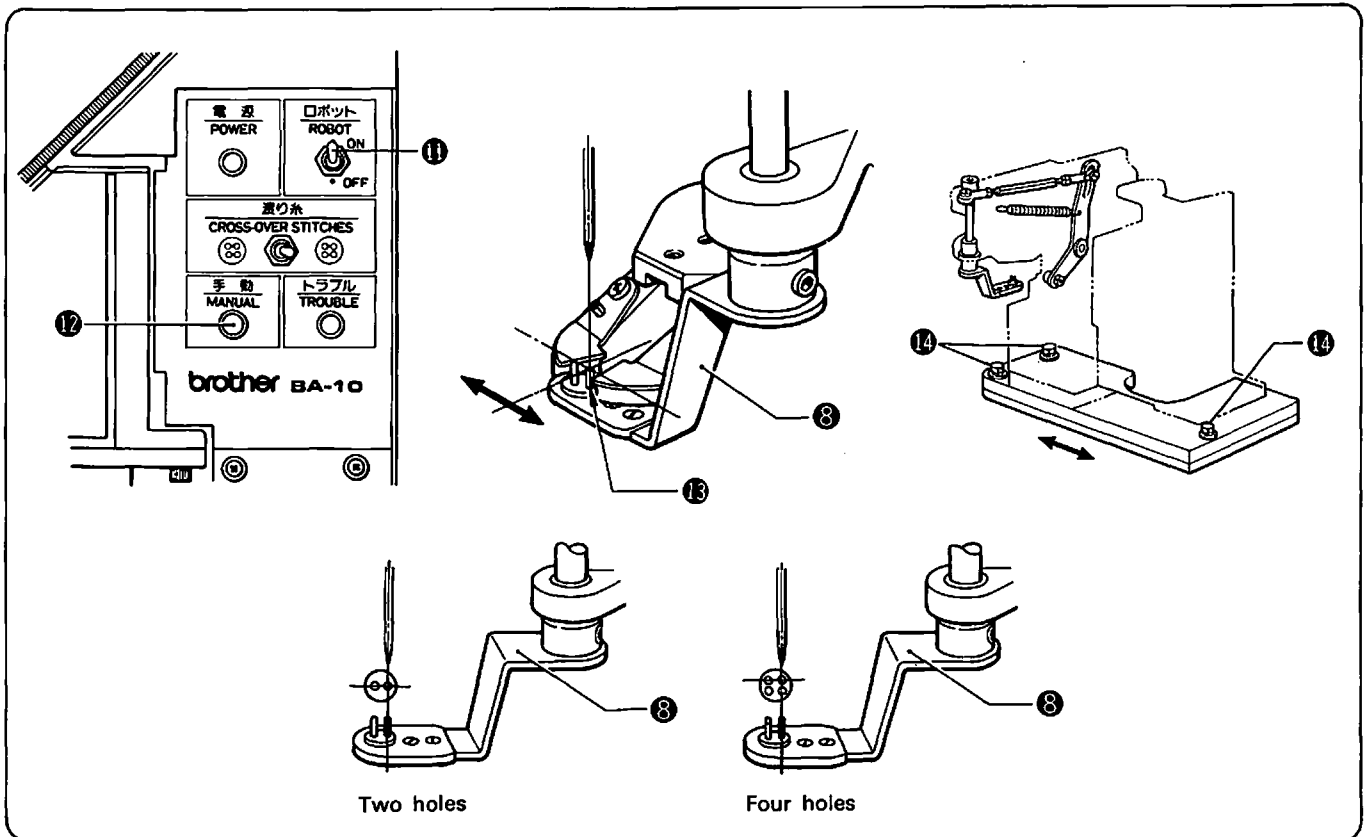
Adjust the vertical feed for button holes A ↔ C.

3. If button hole arrangements differ



- (1) Loosen the screw ⑨ and exchange the button carrier plate ⑩.




4. Adjustment of the button receiver



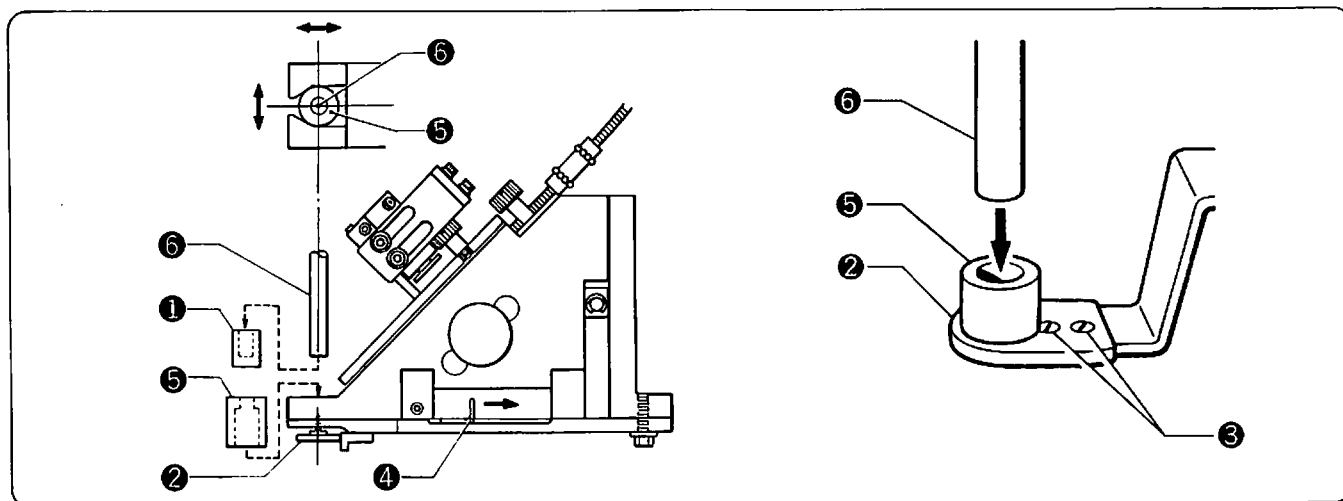
- (1) Check whether or not the feeder switch ⑪ is at the ON position.
- (2) While pressing and holding the manual switch ⑫, switch ON the power switch.
- (3) While continuing to hold the manual switch ⑫, move the arm ⑧ for button movement until it grasps a button.  
\* Assist the button clamp by lifting up.
- (4) Adjust so that the needle tip and the button receiving pin ⑬ coincide.  
Loosen bolt ⑭ and adjust the entire button feeder left or right.

## 5. Button clamp and button carrier adjustment

★ Please use following 3 types of button clamp depending on the shape of button.

	Button application	Button clamp
A	 <p>○ Button hollow is larger and flat.</p>	<p>Part No. S05356-000</p>
B	 <p>○ Button face is a curved shape.</p>	<p>Part No. S06569-000</p>
C	 <p>○ Button hollow is a conical shape.</p>	<p>Part No. [Standard] S06570-000</p>

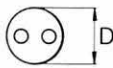
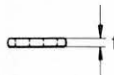
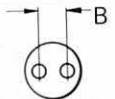


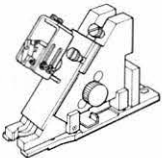

### [Installation]



- (1) Remove the button clamp ①.
- (2) Remove and change the button carrier plate ②. (Tighten the screw ③ temporarily.)
- (3) Move the button carrier shutter ④ in the direction of the arrow, and set the gauge ⑤ in the button carrier plate ②.
- (4) Move the button carrier plate ② so that the shaft ⑥ is in the gauge ⑤.
- (5) Remove the gauge ⑤ from the button carrier plate ②, and tighten the screw ③.
- \* Repeat (4) and check again.
- (6) Attach the button clamp fit for the button type.

## Adjustment guide

Refer to this guide when different buttons are used

	When button diameter (D) changes 	When button thickness (t) changes 	When button hole gap (B) changes 	Page
Vibrating 	Adjust button top/ bottom selector			2
	Adjust button guide			2
		Adjust height control plate		2
	Adjust button adjustment dial			2
Shooter Coil 	Replace the shooter coil			6
Button Slide Base 	Adjust bed slide width			5
	Adjust the stopper			5
	Replace the button top cover			5
		Replace the spacer (S)		6
Button Catch Plate 			Replace the button carrier	8
			Adjust right/left needle and button carrier pin positions	8
Machine Head	Adjust button clamp width			5
			Adjust needle location	7