

# BAS-311H

## Basic Operation Manual

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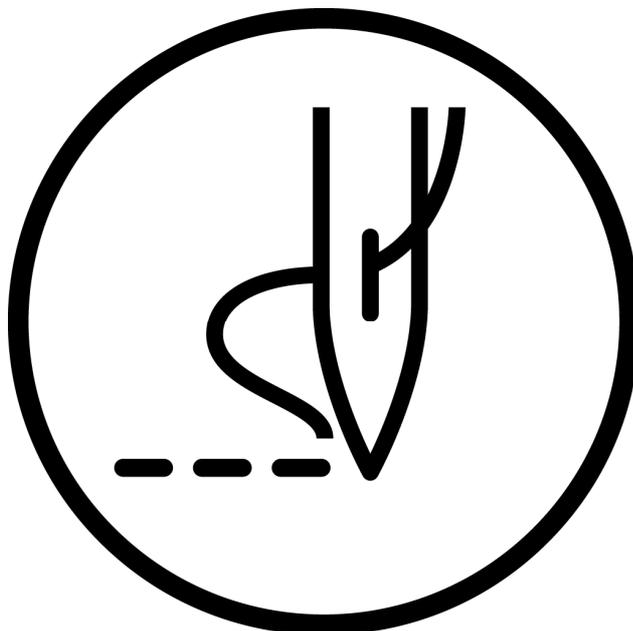
### DIRECT DRIVE PROGRAMMABLE ELECTRONIC PATTERN SEWER

Please read this manual before using the machine.

Please keep this manual within easy reach for quick reference.

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**This basic operation manual describes basic operations including sewing machine operations. For cleaning, standard adjustments and more details, please refer to the instruction manual contained in the Document CD.**



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**brother**<sup>®</sup>

Thank you very much for buying a BROTHER sewing machine. Before using your new machine, please read the safety instructions below and the explanations given in the instruction manual.

With industrial sewing machines, it is normal to carry out work while positioned directly in front of moving parts such as the needle and thread take-up lever, and consequently there is always a danger of injury that can be caused by these parts. Follow the instructions from training personnel and instructors regarding safe and correct operation before operating the machine so that you will know how to use it correctly.

# SAFETY INSTRUCTIONS

## [1] Safety indications and their meanings

This instruction manual and the indications and symbols that are used on the machine itself are provided in order to ensure safe operation of this machine and to prevent accidents and injury to yourself or other people.

The meanings of these indications and symbols are given below.

### Indications

 <b>DANGER</b>	The instructions which follow this term indicate situations where failure to follow the instructions will result in death or serious injury.
 <b>WARNING</b>	The instructions which follow this term indicate situations where failure to follow the instructions could result in death or serious injury.
 <b>CAUTION</b>	The instructions which follow this term indicate situations where failure to follow the instructions may result in minor or moderate injury.

### Symbols



..... This symbol () indicates something that you should be careful of. The picture inside the triangle indicates the nature of the caution that must be taken.  
(For example, the symbol at left means "beware of injury".)



..... This symbol () indicates something that you must not do.



..... This symbol () indicates something that you must do. The picture inside the circle indicates the nature of the thing that must be done.  
(For example, the symbol at left means "you must make the ground connection".)

## [2] Notes on safety

### **DANGER**



Wait at least 5 minutes after turning off the power switch and disconnecting the power cord from the wall outlet before opening the control box cover. Touching areas where high voltages are present can result in severe injury.

### **WARNING**



Do not allow any liquids to get onto this sewing machine, otherwise fire, electric shocks or operating problems may occur.



If any liquid gets inside the sewing machine (machine head or control box), immediately turn off the power and disconnect the power plug from the electrical outlet, and then contact the place of purchase or a qualified technician.

### **CAUTION**

#### Environmental requirements



Use the sewing machine in an area which is free from sources of strong electrical noise such as electrical line noise or static electric noise.

Sources of strong electrical noise may cause problems with correct operation.



Any fluctuations in the power supply voltage should be within  $\pm 10\%$  of the rated voltage for the machine. Voltage fluctuations which are greater than this may cause problems with correct operation.



The power supply capacity should be greater than the requirements for the sewing machine's power consumption.

Insufficient power supply capacity may cause problems with correct operation.



The pneumatic delivery capability should be greater than the requirements for the sewing machine's total air consumption.

Insufficient pneumatic delivery capability may cause problems with correct operation.



The ambient temperature should be within the range of 5°C to 35°C during use.

Temperatures which are lower or higher than this may cause problems with correct operation.



The relative humidity should be within the range of 45% to 85% during use, and no dew formation should occur in any devices.

Excessively dry or humid environments and dew formation may cause problems with correct operation.



In the event of an electrical storm, turn off the power and disconnect the power cord from the wall outlet.

Lightning may cause problems with correct operation.

#### Installation



Machine installation should only be carried out by a qualified technician.



Contact your Brother dealer or a qualified electrician for any electrical work that may need to be done.



The sewing machine weighs approximately 88 kg. The installation should be carried out by two or more people.



Do not connect the power cord until installation is complete. If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.



Hold the machine head with both hands when tilting it back or returning it to its original position.

Furthermore, do not apply excessive force when tilting back the machine head. The sewing machine may become unbalanced and fall down, and serious injury or damage to the sewing machine may result.



Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.



All cords should be secured at least 25 mm away from any moving parts. Furthermore, do not excessively bend the cords or secure them too firmly with staples, otherwise there is the danger that fire or electric shocks could occur.



Install the safety covers to the machine head and motor.



If using a work table which has casters, the casters should be secured in such a way so that they cannot move.



Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin. If the oil and grease get into your eyes or onto your skin, inflammation can result.

Furthermore, do not drink or eat the lubricating oil or grease. They may cause diarrhea or vomiting.

Keep the oil out of the reach of children.

## CAUTION

### Sewing

-  This sewing machine should only be used by operators who have received the necessary training in safe use beforehand.
-  The sewing machine should not be used for any applications other than sewing.
-  Be sure to wear protective goggles when using the machine.  
If goggles are not worn, there is the danger that if a needle breaks, parts of the broken needle may enter your eyes and injury may result.
-  Turn off the power switch at the following times. If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.
  - When threading the needle
  - When replacing the bobbin and needle
  - When not using the machine and when leaving the machine unattended
-  If using a work table which has casters, the casters should be secured in such a way so that they cannot move.
-  Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.
-  Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.
-  If an error occurs in machine operation, or if abnormal noises or smells are noticed, immediately turn off the power switch. Then contact your nearest Brother dealer or a qualified technician.
-  If the machine develops a problem, contact your nearest Brother dealer or a qualified technician.

### Cleaning

-  Turn off the power switch before carrying out cleaning. If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.
-  Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin. If the oil and grease get into your eyes or onto your skin, inflammation can result.  
Furthermore, do not drink or eat the lubricating oil or grease. They may cause diarrhea or vomiting.  
Keep the oil out of the reach of children.

### Maintenance and inspection

-  Maintenance and inspection of the sewing machine should only be carried out by a qualified technician.
-  Ask your Brother dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.
-  Turn off the power switch and disconnect the power cord before carrying out the following operations. If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.
  - Inspection, adjustment and maintenance
  - Replacing consumable parts such as the rotary hook
-  Disconnect the air hoses from the air supply and wait for the needle on the pressure gauge to drop to "0" before carrying out inspection, adjustment and repair of any parts which use the pneumatic equipment.
-  Hold the machine head with both hands when tilting it back or returning it to its original position.  
Furthermore, do not apply excessive force when tilting back the machine head. The sewing machine may become unbalanced and fall down, and serious injury or damage to the sewing machine may result.
-  If the power switch needs to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.
-  When replacing parts and installing optional accessories, be sure to use only genuine Brother parts.  
Brother will not be held responsible for any accidents or problems resulting from the use of non-genuine parts.
-  If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check that they operate correctly before using the machine.
-  To prevent accidents and problems, do not modify the machine yourself.  
Brother will not be held responsible for any accidents or problems resulting from modifications made to the machine.

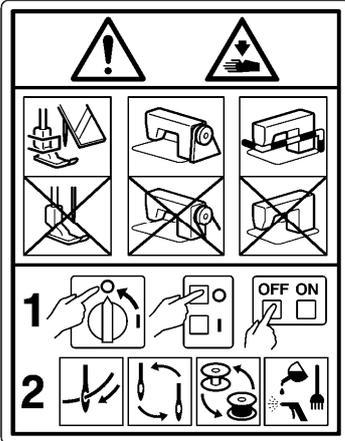
### [3] Warning labels

The following warning labels appear on the sewing machine.

Please follow the instructions on the labels at all times when using the machine. If the labels have been removed or are difficult to read, please contact your nearest Brother dealer.

1		<b>▲ 危険</b>		<b>▲ 危険</b>	
		高電圧部分にふれて、大けがをすることがある。 電源を切り、5分たってからカバーをはずすこと。		触摸高压电部分, 会导致受伤。 在切断电源5分钟后, 再开启盖罩。	
	<b>▲ DANGER</b>	<b>▲ GEFAHR</b>	<b>▲ DANGER</b>	<b>▲ PELIGRO</b>	
	Hazardous voltage will cause injury. Turn off main switch and wait 5 minutes before opening this cover.	Hochspannung verletzungsgefahr! Bitte schalten sie den hauptschalter aus und warten sie 5 minuten, bevor sie diese abdeckung öffnen.	Un voltage non adapte provoque des blessures. Eteindre l'interrupteur et attendre 5 minutes avant d'ouvrir le capot.	Un voltaje inadecuado puede provocar las heridas. Apagar el interruptor principal y esperar 5 minutos antes de abrir esta cubierta.	

2



**CAUTION**  
Moving parts may cause injury.

Operate with safety devices\* installed.

Turn off the power before carrying out operations such as threading, changing the needle, bobbin, knives or hook, cleaning and adjusting.

\*Safety devices

Devices such as eye guard, finger guard, thread take-up cover, side cover, rear cover, tension release solenoid cover, inner cover, outer cover, fixed cover and gas spring support cover

3  Be careful not to get your hand caught when tilting back the machine head and returning it to its original position.

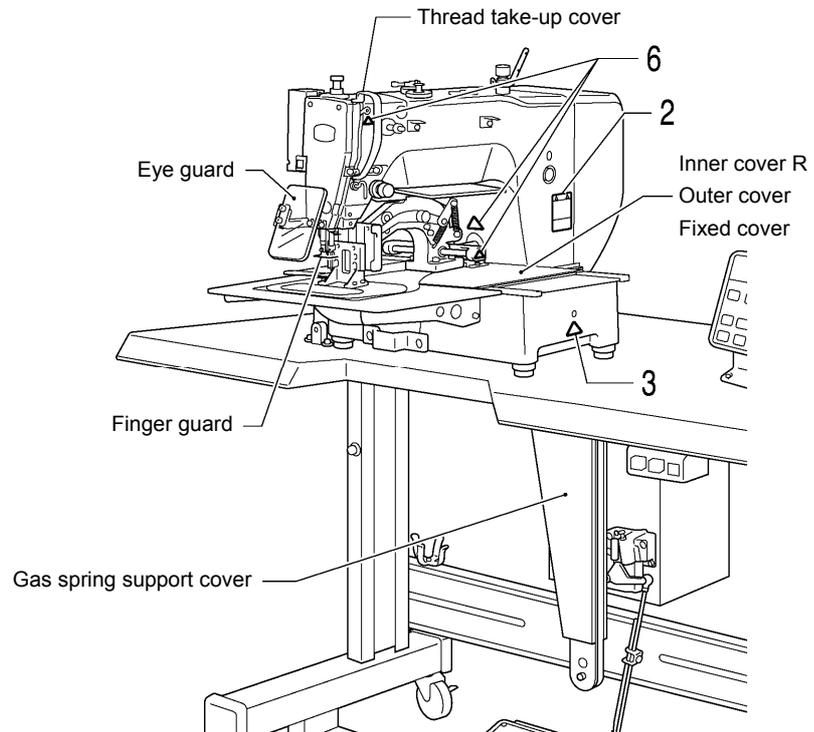
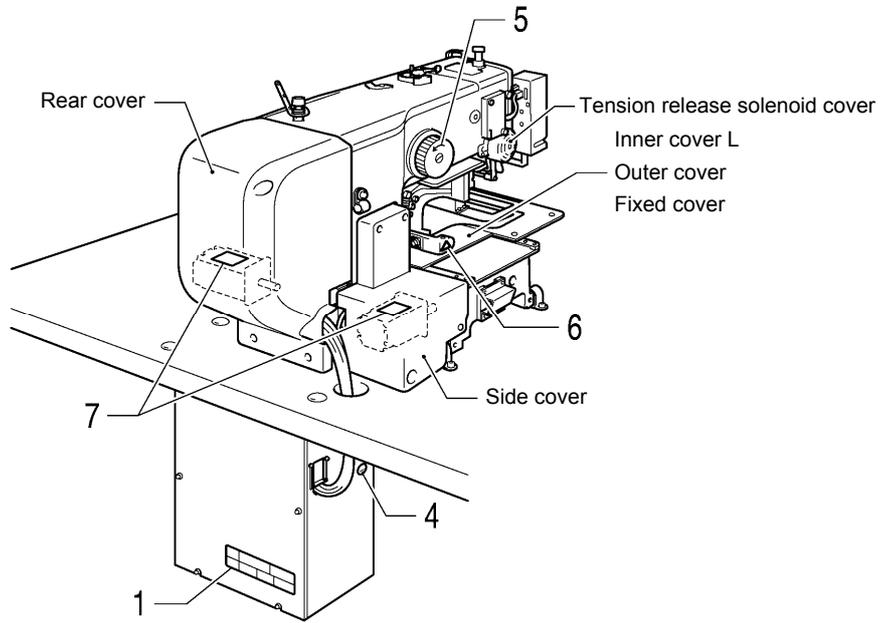
4  Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.

**PE**

5  Direction of operation

6  Be careful to avoid injury from moving parts.

7  Do not hold, otherwise problems with operation or injury may occur.



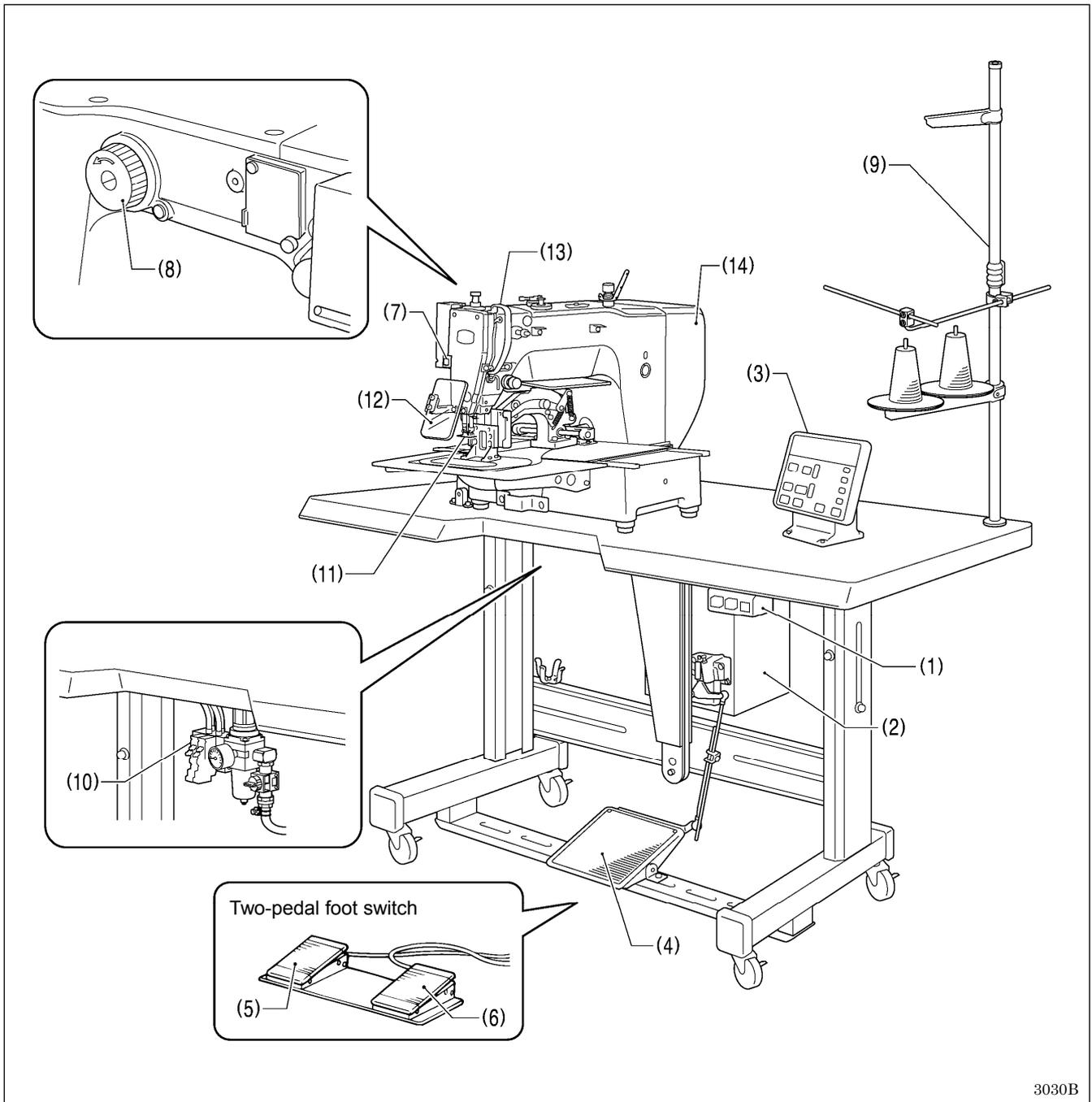
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3029B

# CONTENTS

<b>1. NAMES OF MAJOR PARTS .....</b>	<b>1</b>	<b>5. USING THE OPERATION PANEL</b>	
<b>2. USEFUL FUNCTIONS FOR</b>		<b>(BASIC OPERATIONS) .....</b>	<b>28</b>
<b>OPTIMUM SEWING .....</b>	<b>2</b>	5-1. Name and function of each operation	
<b>3. INSTALLATION .....</b>	<b>3</b>	panel item .....	28
3-1. Table processing diagram .....	4	5-2. Program setting method.....	30
3-2. Installing the control box.....	5	5-2-1. Parameter list .....	31
3-3. Installing the oil pan.....	5	5-3. Copying programs.....	33
3-4. Installing the machine head.....	6	5-4. Checking the sewing pattern.....	34
3-5. Installing the operation panel.....	9	5-5. Setting the work clamp lift amount.....	35
3-6. Installing the two-pedal foot switch .....	10	<b>6. USING SD CARDS .....</b>	<b>37</b>
3-7. Connecting the cords.....	10	6-1. Notes on handling SD cards	
3-8. Connecting the ground wire.....	13	(commercially available) .....	37
3-9. Connecting the power cord.....	14	6-2. Preparation for reading and writing data.....	38
3-10. Installing the cotton stand.....	17	6-3. Reading additional sewing data .....	39
3-11. Installing the pneumatic unit		<b>7. SEWING .....</b>	<b>40</b>
(pneumatic work clamp specifications).....	18	7-1. Sewing .....	40
3-12. Installing the eye guard .....	19	7-2. Using the STOP switch .....	41
3-13. Installing the side cover and rear cover.....	19	<b>Document CD .....</b>	<b>42</b>
3-14. Lubrication .....	20		
3-15. Installing the machine head fixing bolt .....	21		
3-16. Installing the bobbin winder tension .....	21		
3-17. Checking the machine head switch.....	21		
<b>4. PREPARATION BEFORE SEWING.....</b>	<b>22</b>		
4-1. Installing the needle.....	22		
4-2. Threading the upper thread .....	22		
4-3. Winding the lower thread .....	24		
4-4. Installing the bobbin case .....	25		
4-5. Thread tension.....	26		
4-5-1. Lower thread tension .....	26		
4-5-2. Upper thread tension .....	26		
4-6. Starting up .....	27		

# 1. NAMES OF MAJOR PARTS

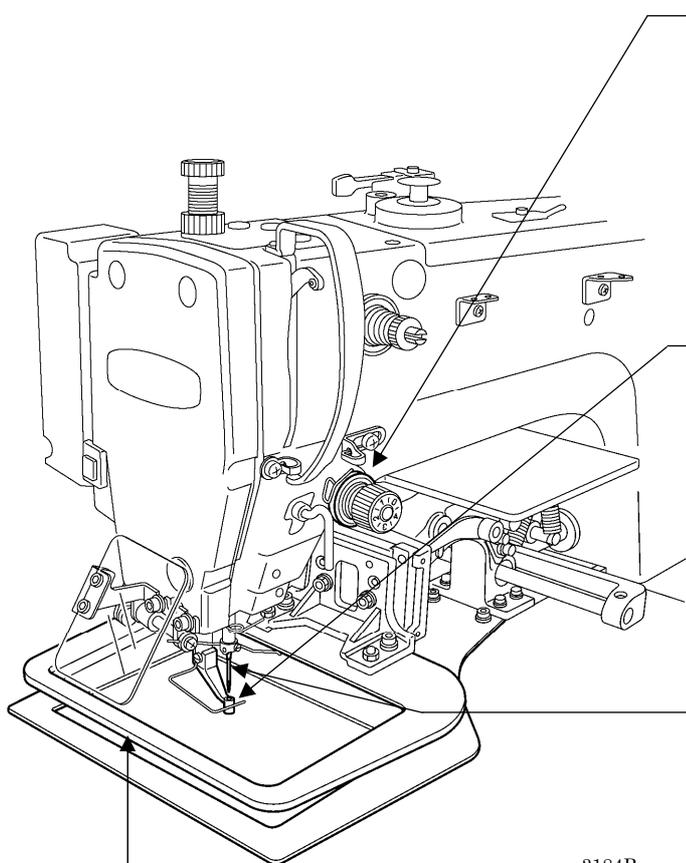


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- (1) Power switch
- (2) Control box
- (3) Operation panel
- (4) Foot switch
- (5) Work clamp switch
- (6) Start switch
- (7) STOP switch
- (8) Pulley
- (9) Cotton stand
- (10) Solenoid valve (pneumatic work clamp specifications)

- Safety devices:**
- (11) Finger guard
  - (12) Eye guard
  - (13) Thread take-up cover
  - (14) Rear cover

## 2. USEFUL FUNCTIONS FOR OPTIMUM SEWING



### Easy threading in threading mode

➔ Page 23

When using threading mode for threading, the tension discs will open so that the thread can be threaded more easily. Furthermore, threading mode is safe because the sewing machine will not start even when the foot switch is depressed.

### Presser foot height can be set easily using the panel

➔ Page 35

The height of the presser foot can be set simply by entering a numeric value at the panel, without the need for tools. Furthermore, you can use user programs to set the presser foot height to the desired height separately for each sewing program.

### Slow start pattern setting is easy

➔ Page 32

This is used to stop the thread from pulling out at the sewing start, and at times when skipped stitches might easily occur. The starting-up speed at the sewing start can be adjusted easily.

### The work clamp lift amount can be set easily using the panel (motor-driven work clamp specifications)

➔ Page 35

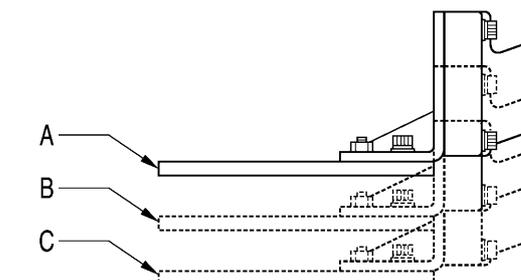
The work clamp lift amount can be set simply by entering a numeric value at the panel, without the need for tools. Furthermore, you can use user programs to set the work clamp lift amount to the desired height separately for each sewing program.

### 3 types of work clamp lowering operation (motor-driven work clamp specifications)

➔ INSTRUCTION MANUAL CD  
6-1. Setting memory switches, 6-2. List of memory switch settings

You can select one of the three different types of work clamp lowering operation by changing memory switch settings.

- [1] Analog dropping, where the work clamp drops smoothly in direct proportion to the pedal depression amount
- [2] 1 step drop, where the work clamp drops from the highest position A to the lowest position C in a single movement
- [3] 2 step drop, where the work clamp drops from the highest position A to pause at an intermediate position B, then drops to the lowest position C



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## 3. INSTALLATION

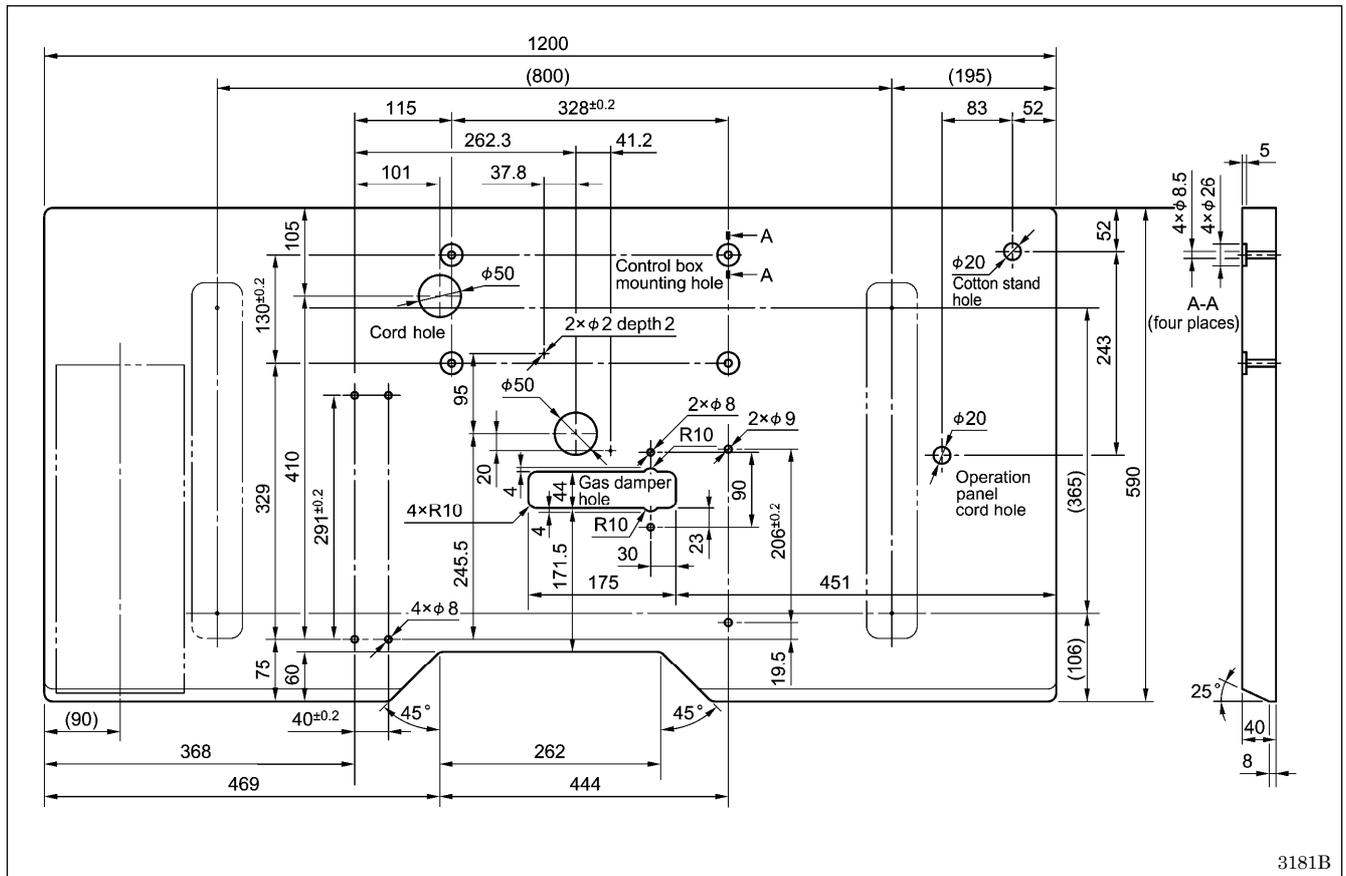
### CAUTION

- |   |  |   |  |
|---|--|---|--|
|  | Machine installation should only be carried out by a qualified technician.   |  | All cords should be secured at least 25 mm away from any moving parts. Furthermore, do not excessively bend the cords or secure them too firmly staples, otherwise there is the danger that fire or electric shocks could occur. |
|  | Contact your Brother dealer or a qualified electrician for any electrical work that may need to be done.   |  |  |
|  | The sewing machine head weighs approximately 88kg. The installation should be carried out by two or more people.   |  | Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.  |
|  | Do not connect the power cord until installation is complete.<br>If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.   |  | Install the safety covers to the machine head and motor.   |
|  | Hold the machine head with both hands when tilting it back or returning it to its original position.<br>Furthermore, do not apply excessive force when tilting back the machine head. The sewing machine may become unbalanced and fall down, and serious injury or damage to the sewing machine may result. |   |  |

### 3. INSTALLATION

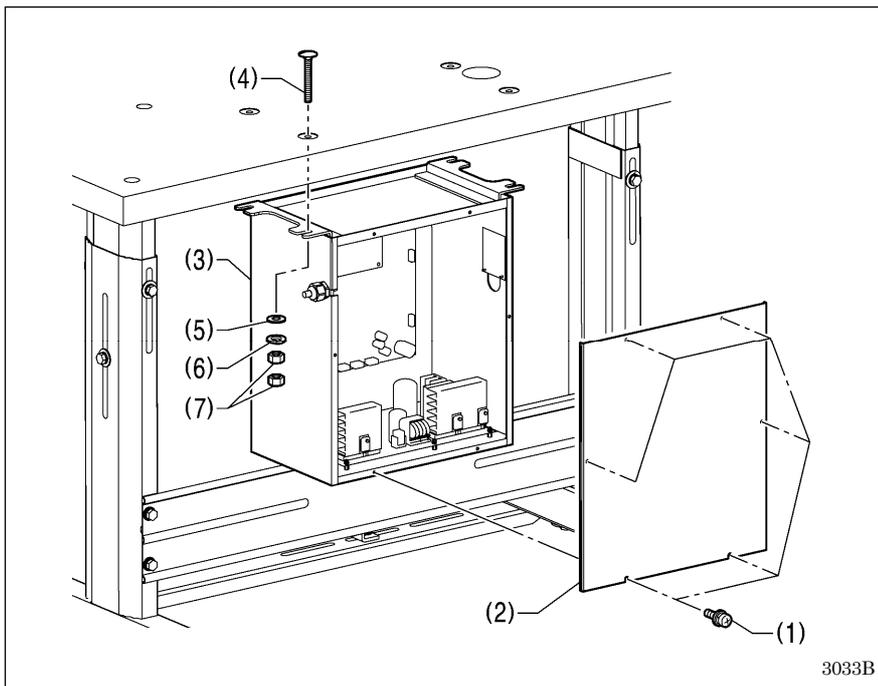
#### 3-1. Table processing diagram

- The thickness of the table should be at least 40 mm, and it should be strong enough to bear the weight and vibration of the sewing machine.
- Check that the control box is at least 10 mm away from the leg. If the control box and the leg are too close together, it may result in incorrect sewing machine operation.



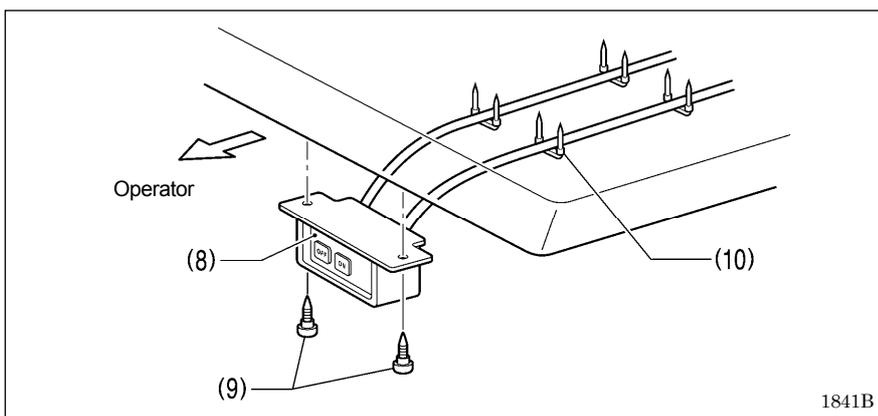
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### 3-2. Installing the control box



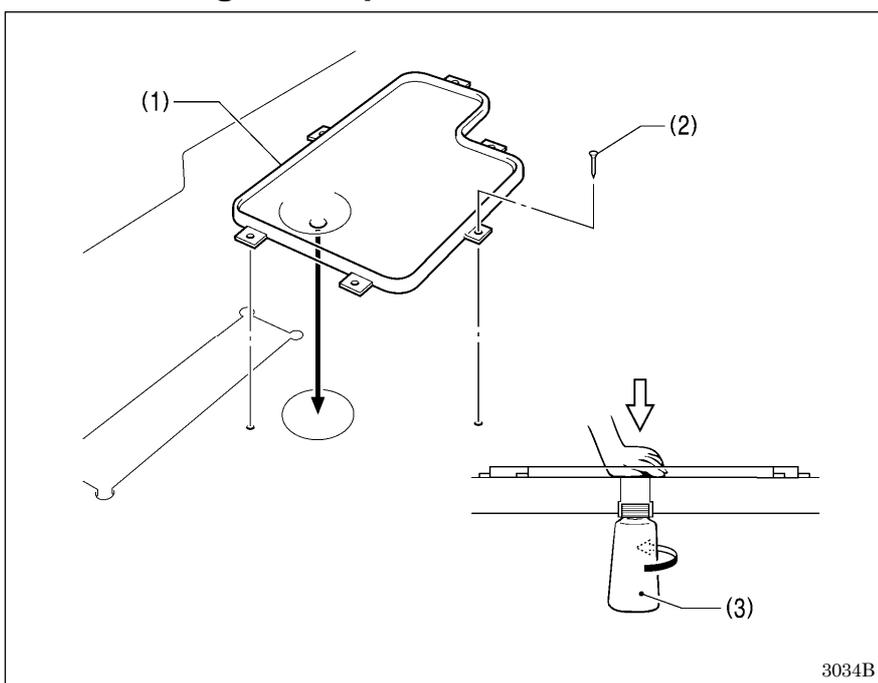
Remove the six screws (1), and then remove the control box cover (2).

- (3) Control box
- (4) Bolts [4 pcs.]
- (5) Plain washers [4 pcs.]
- (6) Spring washers [4 pcs.]
- (7) Nuts [8 pcs.]



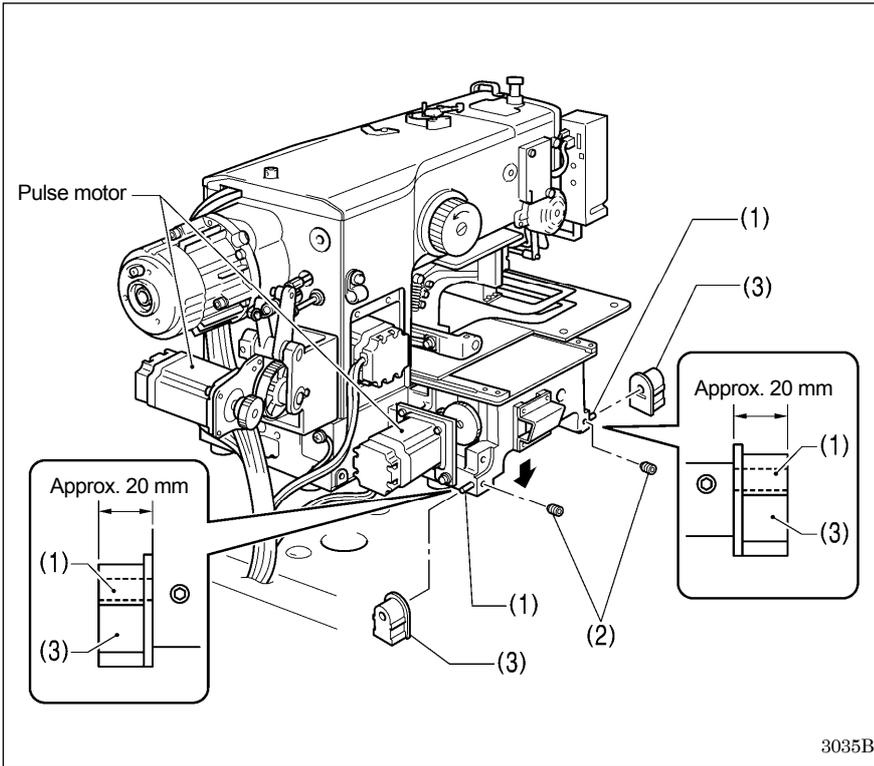
- (8) Power switch
- (9) Wood screws [2 pcs.]
- (10) Staples [4 pcs.]

### 3-3. Installing the oil pan



- (1) Oil pan
- (2) Nails [6 pcs.]
- (3) Waste oil tank

### 3-4. Installing the machine head



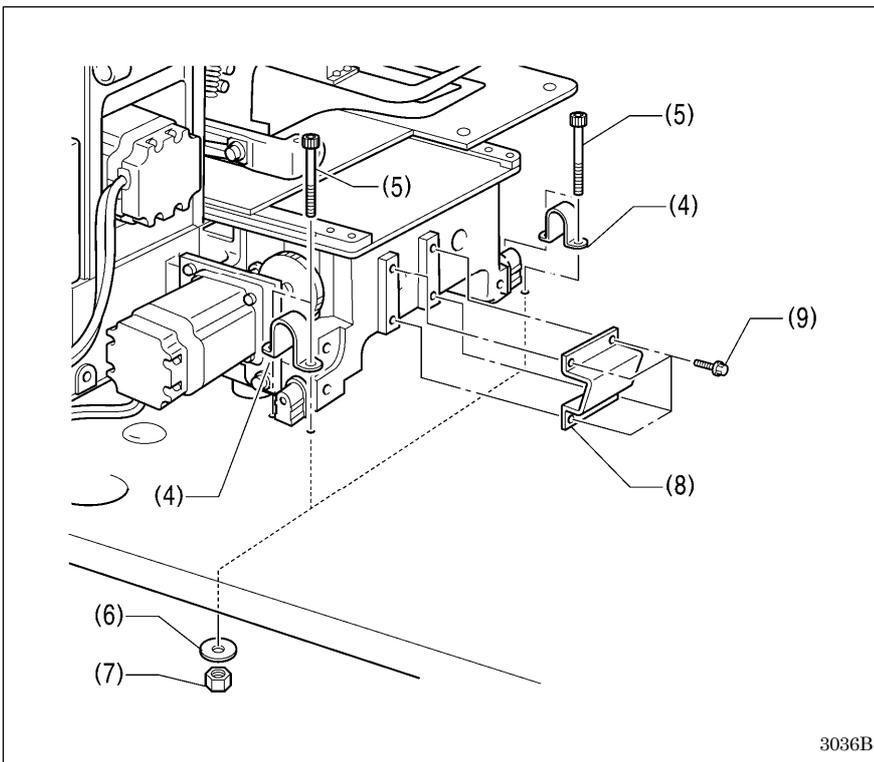
- (1) Pins [2 pcs.]
- (2) Set screws [2 pcs.]
- (3) Hinge rubber assemblies [2 pcs.]

Place the machine head gently on top of the oil pan.

**NOTE:**

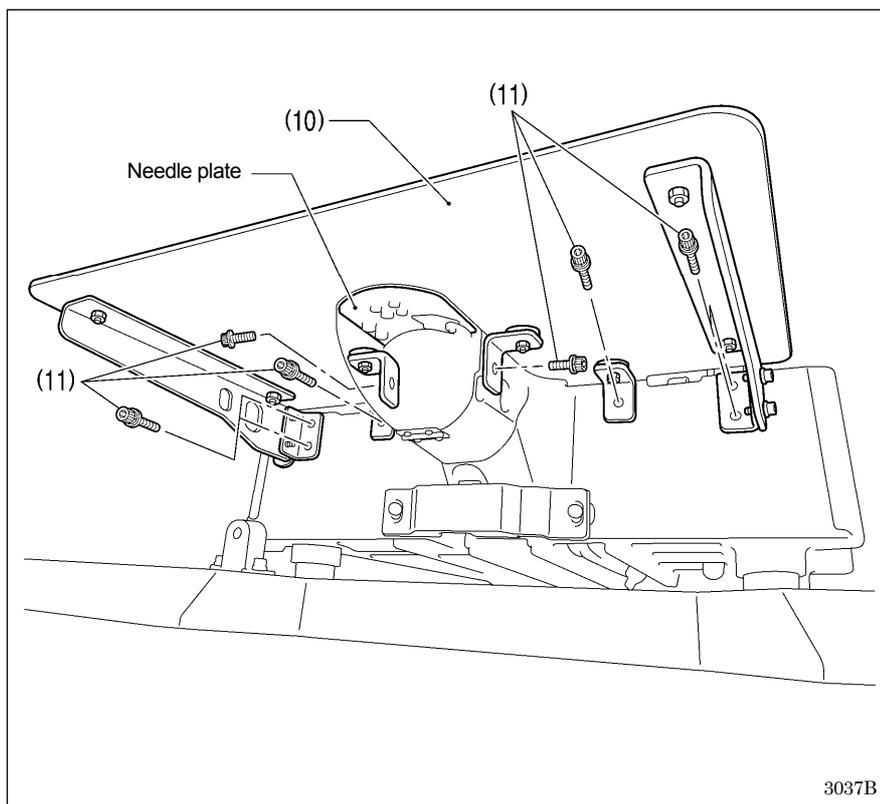
- Be careful not to get the cords clamped between the machine head and the oil pan.
- When holding the machine head, do not hold it by the pulse motor. This may cause problems with operation of the pulse motor.

3035B



- (4) Hinge holders [2 pcs.]
- (5) Bolts [4 pcs.]
- (6) Plain washers [4 pcs.]
- (7) Nuts [4 pcs.]
- (8) Head rest
- (9) Bolts with washer [4 pcs.]

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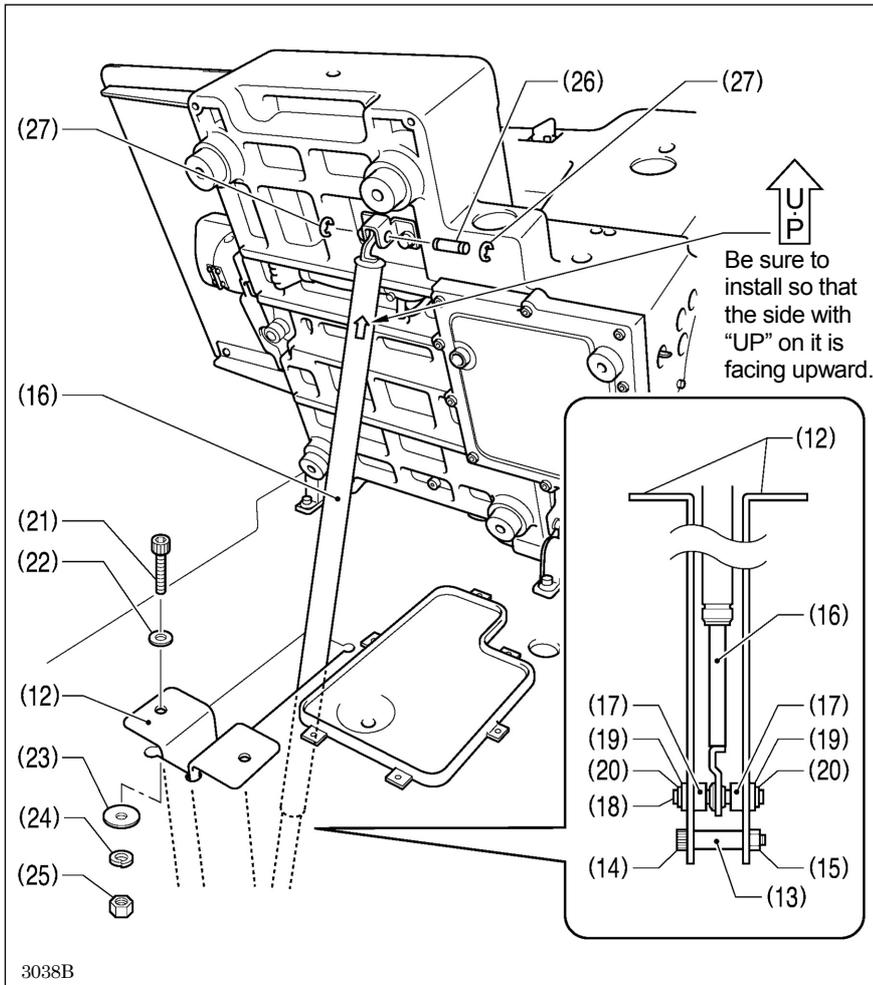
- (10) Auxiliary plate  
(11) Bolts with washer [8 pcs.]

Loosen the eight bolts with washer (11), and adjust so that the auxiliary plate (10) is 0 to 0.5 mm above the needle plate (10). Gently tilt back the machine head.

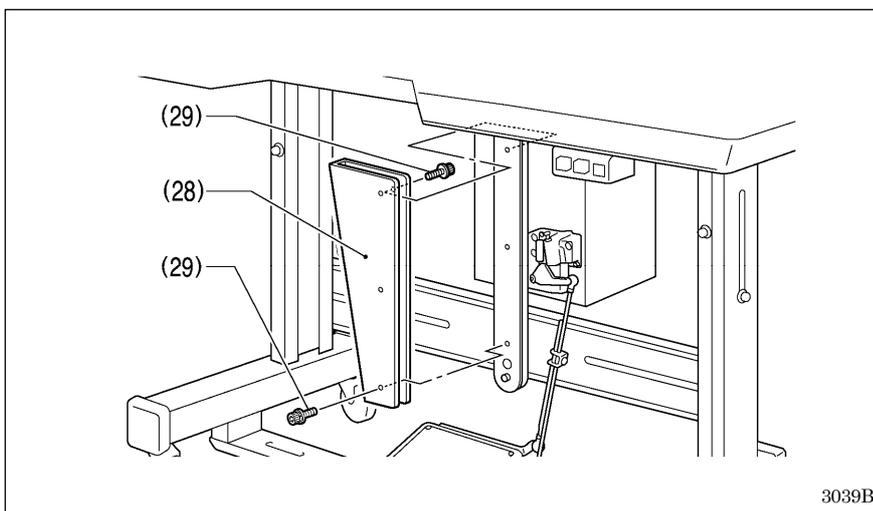
**NOTE:**

- Install the auxiliary plate (10) so that it is horizontal.  
If the auxiliary plate (10) is lower than the needle plate, the feed plate may get caught on the needle plate.
- Two or more people should tilt back the machine head, and it should be tilted gently while being held with both hands.

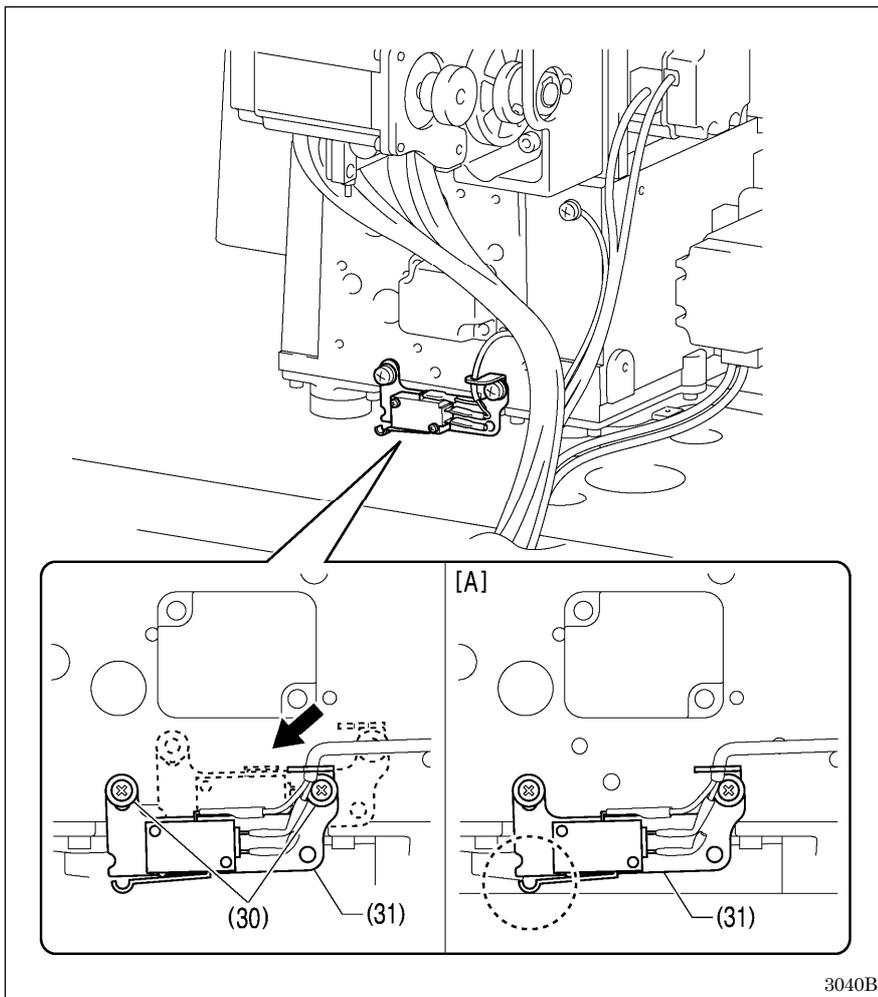
### 3. INSTALLATION



- (12) Gas spring holders [2 pcs.]
- (13) Spacer
- (14) Bolt
- (15) Nut
- (16) Gas spring
- (17) Shaft collars [2 pcs.]
- (18) Gas spring shaft D
- (19) Plain washers [2 pcs.]
- (20) Retaining rings E [2 pcs.]
- (21) Bolts [2 pcs.]
- (22) Plain washers (medium) [2 pcs.]
- (23) Plain washers (large) [2 pcs.]
- (24) Spring washers [2 pcs.]
- (25) Nuts [2 pcs.]
- (26) Gas spring shaft U
- (27) Retaining rings E [2 pcs.]



- (28) Gas spring support cover
- (29) Bolts with washer [6 pcs.]



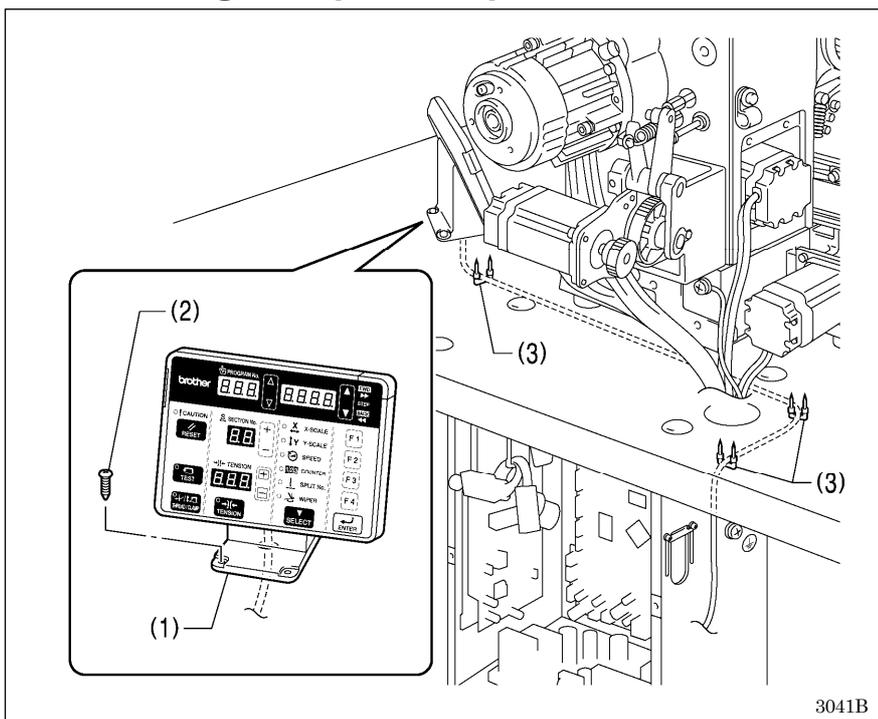
Gently return the machine head to its original position.

1. Remove the two screws (30), and then temporarily remove the machine head switch (31).
2. Use the two screws (30) which were removed to install the machine head switch (31) in the position shown in the illustration.
3. Check that the machine head switch as turned on as shown in figure [A].

\* If the machine head switch is not turned on, adjust the installation position while referring to “3-17. Checking the machine head switch”.

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### 3-5. Installing the operation panel



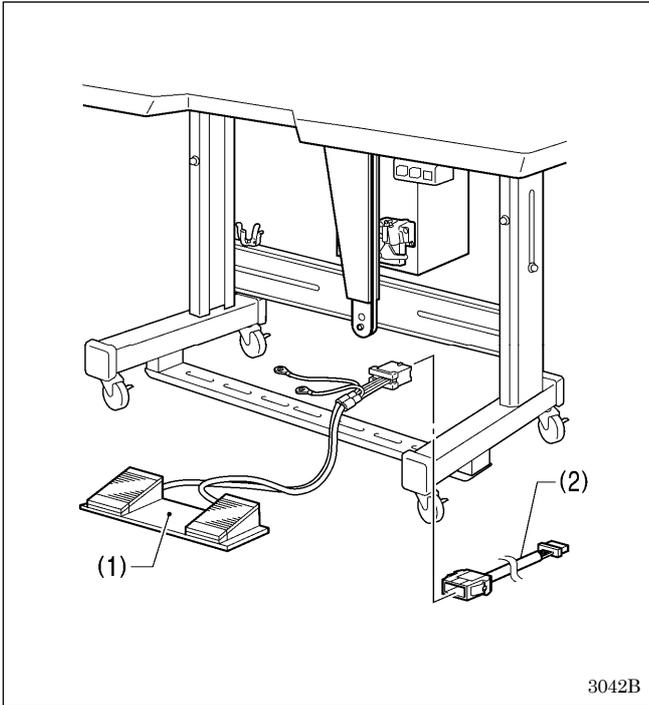
- (1) Operation panel
- (2) Wood screws [4 pcs]

\* Pass the panel cord through the hole in the table, and then insert it into the control box through the hole in the side of the control box.

- (3) Staples [3 pcs]

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### 3-6. Installing the two-pedal foot switch



- (1) Two-pedal foot switch
- (2) Conversion harness

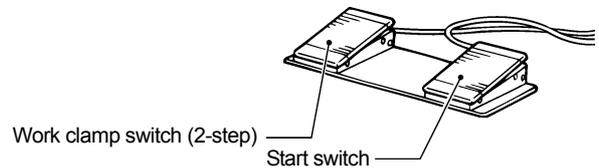
Connect the connector for the two-pedal foot switch (1) to the conversion harness (2). Insert the conversion harness (2) into the P15 (PEDAL) connector on the main P.C. board. (Refer to "3-7. Connecting the cords".)

\* Be sure to make the ground connection. (Refer to "3-8. Connecting the ground wire".)

#### <Foot switch operating method>

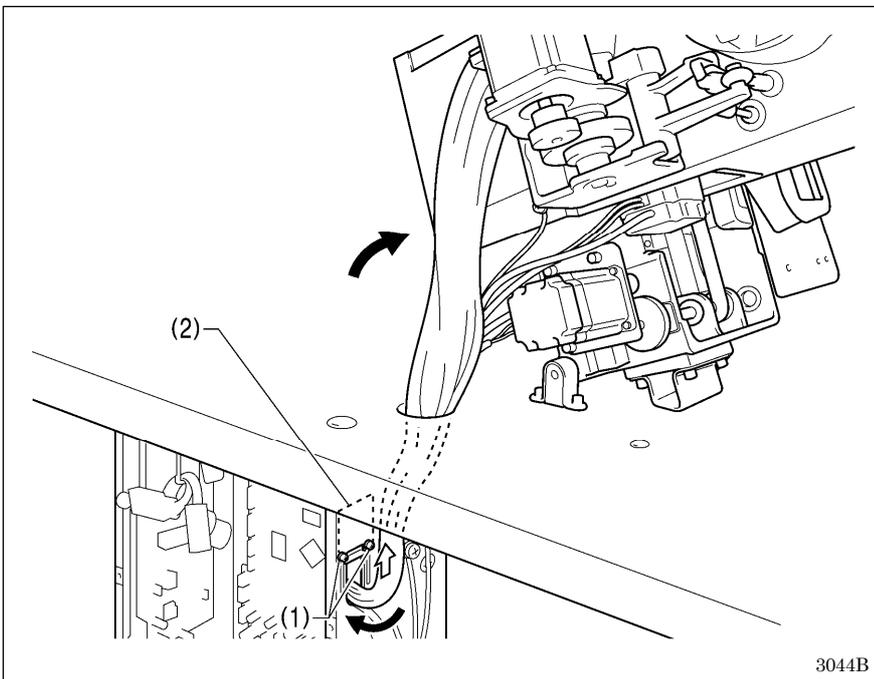
When the work clamp switch (left) is depressed, both work clamps are lowered, and when the start switch (right) is depressed, the sewing machine starts sewing.

\* The work clamp lowering method can be changed using memory switch No. 002. (Refer to "6-2. List of memory switch settings" in the instruction manual CD.)



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### 3-7. Connecting the cords



1. Gently tilt back the machine head.
2. Pass the cord bundle through the hole in the work table.
3. Loosen the two screws (1), and then open the cord presser plate (2) in the direction of the white arrow and pass the cord bundle through the opening.
4. Securely connect the connectors as indicated in the table below.

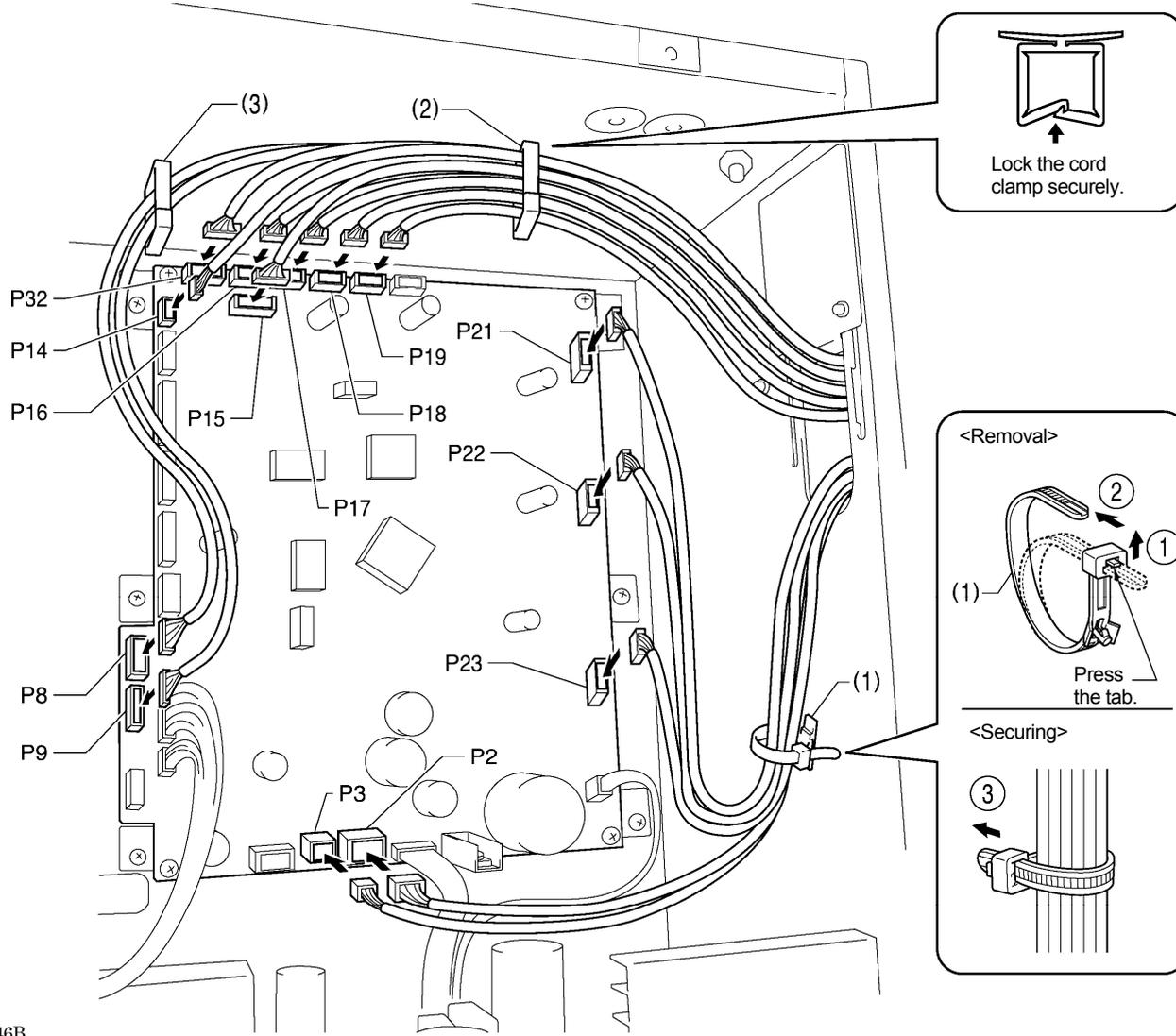
(Refer to following page.)

#### NOTE:

- Check that the connector is facing the correct way, and then insert it firmly until it locks into place.
- Secure the cables with cable ties and cord clamps, while being careful not to pull on the connector.

(Continued on next page.)

< Main P. C. board >



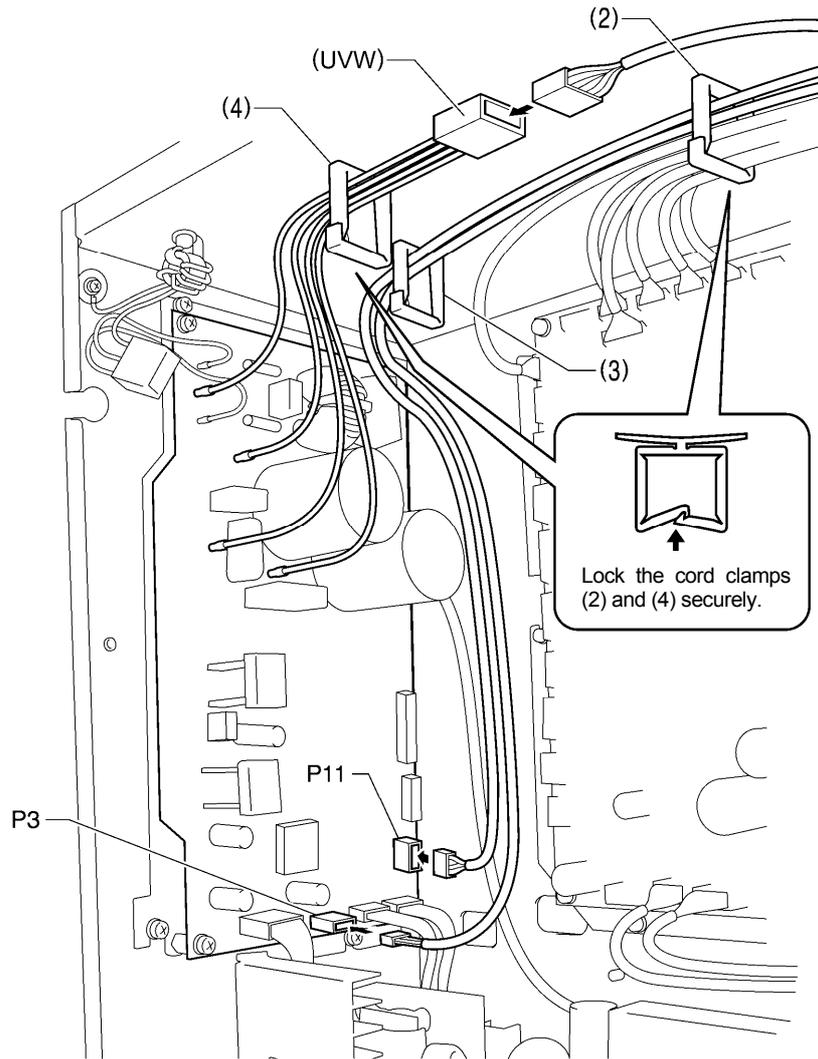
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Connectors	Connection location on main P. C. board	Cord clamps
X pulse motor encoder [5-pin] White	P17 (X-ENC)	(2)
Y pulse motor encoder [5-pin] Blue	P18 (Y-ENC)	(2)
Work clamp pulse motor encoder [5-pin] Black	P19 (P-ENC)	(2)
Machine head switch [3-pin]	P14 (HEAD-SW)	(2)
Conversion harness (two-pedal foot switch) [7-pin] White	P15 (PEDAL)	(2)
Machine head memory [6-pin]	P16 (HEAD-M)	(2)
Thread trimmer solenoid [6-pin]	P2 (SOL1)	(1)
Digital tension [4-pin]	P3 (SOL2)	(1)
X pulse motor [4-pin] White	P21 (XPM)	(1)
Y pulse motor [4-pin] Blue	P22 (YPM)	(1)
Work clamp pulse motor [4-pin] Black	P23 (PPM)	(1)
Operation panel [8-pin] Red	P32 (PROGRAMMER)	(2)
Home position sensor [12-pin] White	P8 (SENSOR1)	(2) (3)
STOP switch [6-pin] White	P9 (HEAD)	(2) (3)

**NOTE:** Route the X, Y and work clamp pulse motor harnesses so that they do not touch the power supply P.C. board.

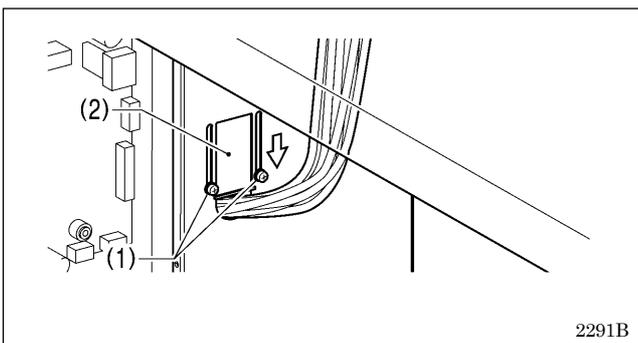
### 3. INSTALLATION

#### < Motor P. C. board >



3047B

Connectors	Connection location on motor P. C. board	Cord clamps/ cable ties
Upper shaft motor [4-pin]	(UVW)	(4)
Synchronizer [10-pin]	P11 (SYNC)	(2) (3)
Operation panel [4-pin]	P3 (PANEL)	(2) (3)



2291B

5. Close the cord presser plate (2) in the direction of the white arrow, and secure it by tightening the two screws (1).

**NOTE:**

Close the cord presser plate (2) securely so that no foreign objects, insects or small animals can get inside the control box.

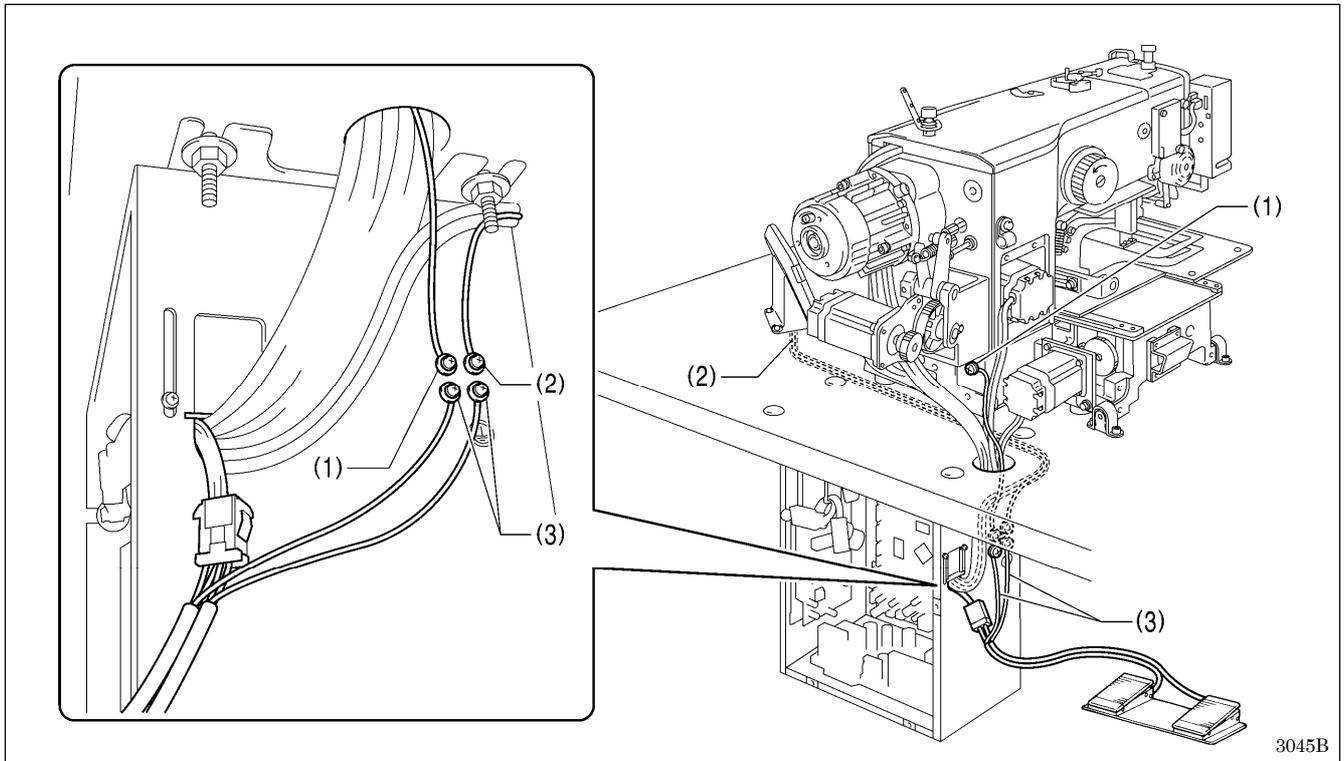
6. Check that the cords do not get pulled, and then gently return the machine head to its original position.

### 3-8. Connecting the ground wire

## ⚠ CAUTION



Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.



- (1) Ground wire from the machine head
- (2) Ground wire from operation panel
- (3) Ground wires from two-pedal foot switch harnesses (2 wires)

- Tighten the control box cover with the six screws. Check that the cords are not clamped by the cover at this time.

**NOTE:** Make sure that the ground connections are secure in order to ensure safety.

### 3. INSTALLATION

## 3-9. Connecting the power cord

# ⚠ CAUTION



Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.

Connect cords that match the voltage specifications.

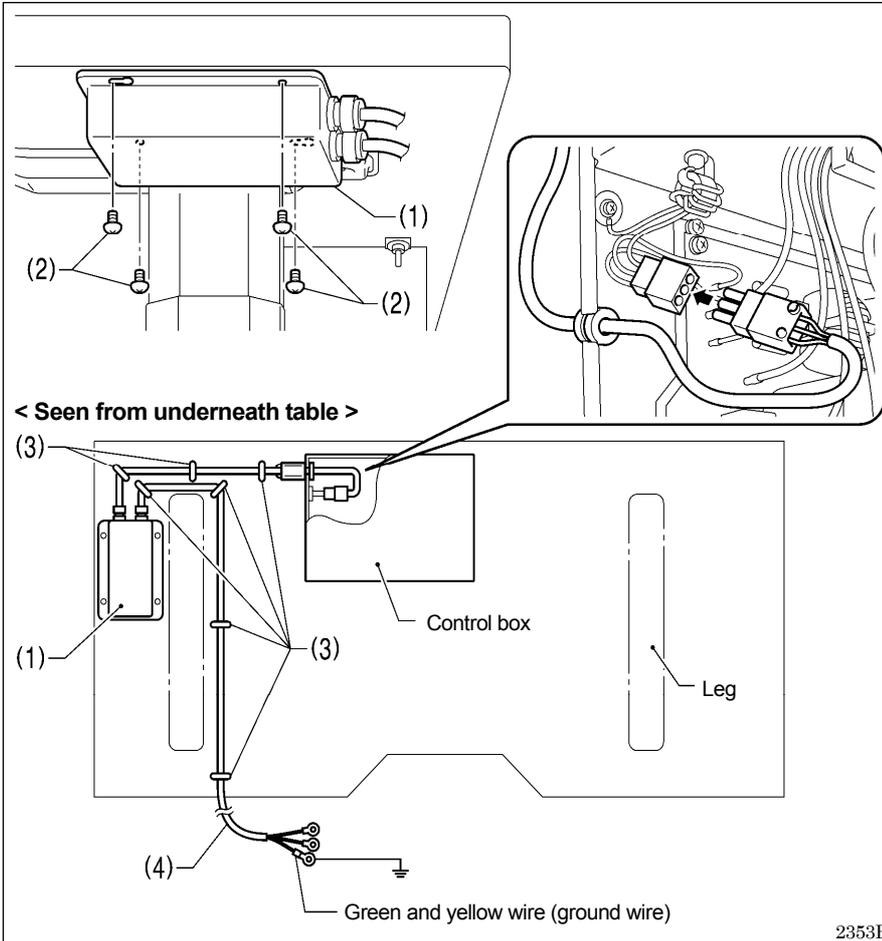
### < EU specifications >

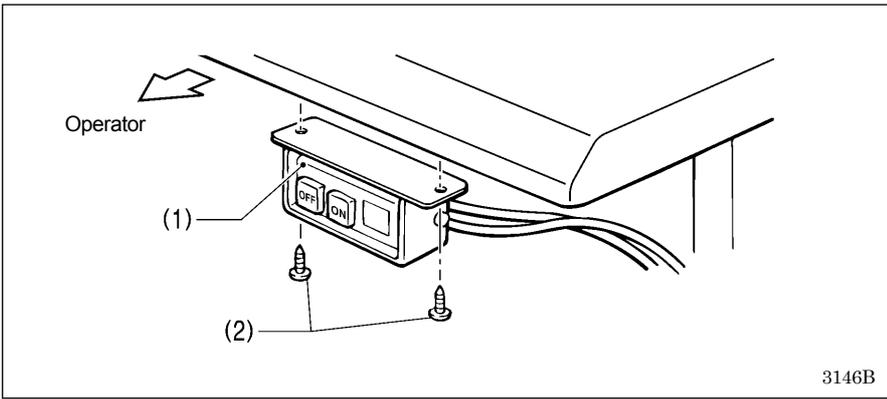
- (1) Filter box
- (2) Screws [4 pcs]
- (3) Staples [7 pcs]
- (4) Power cord

1. Attach an appropriate plug to the power cord (4). (The green and yellow wire is the ground wire.)
2. Insert the power plug into a properly-grounded electrical outlet.

### NOTE:

- Take care when tapping in the staples (3) to make sure that they do not pierce the cords.
- Do not use extension cords, otherwise machine operation problems may result.

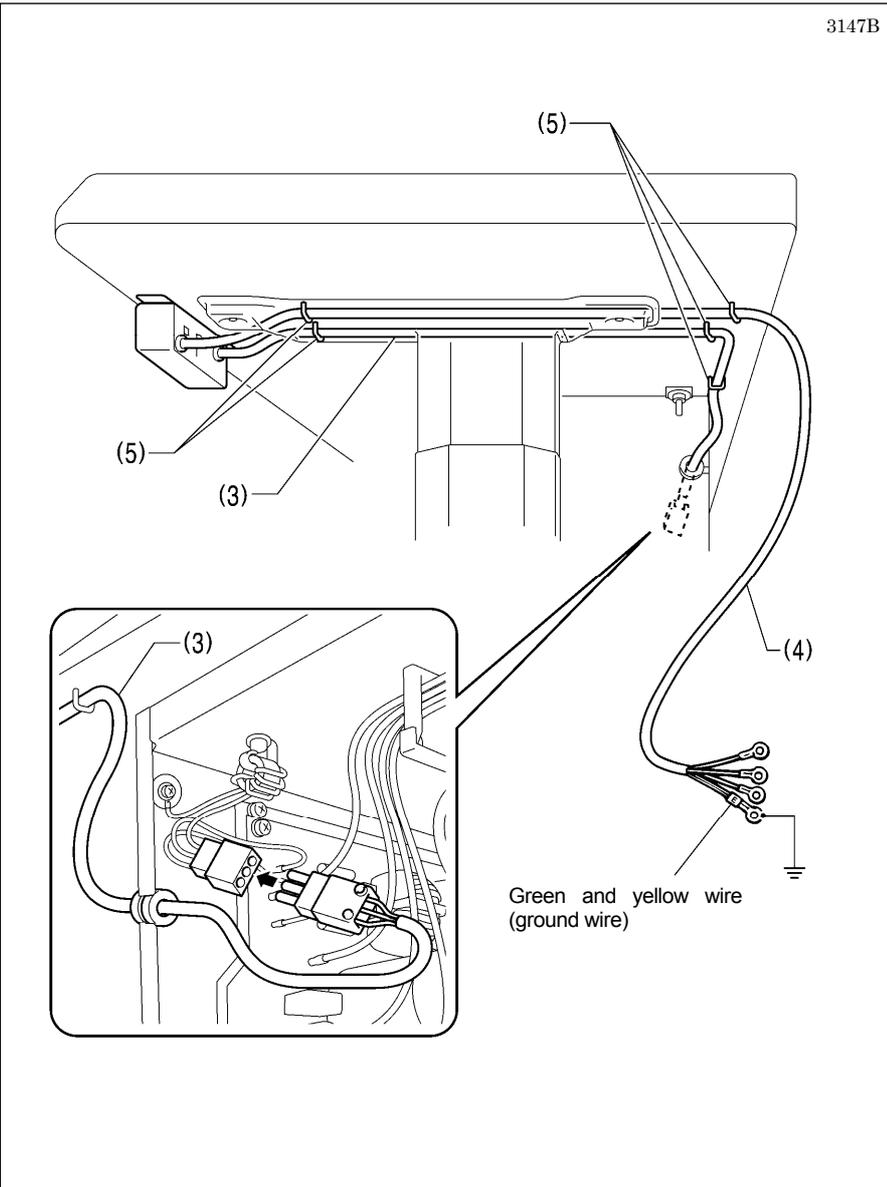




<200 V system >

- (1) Power switch
- (2) Screws [2 pcs]

3146B



3147B

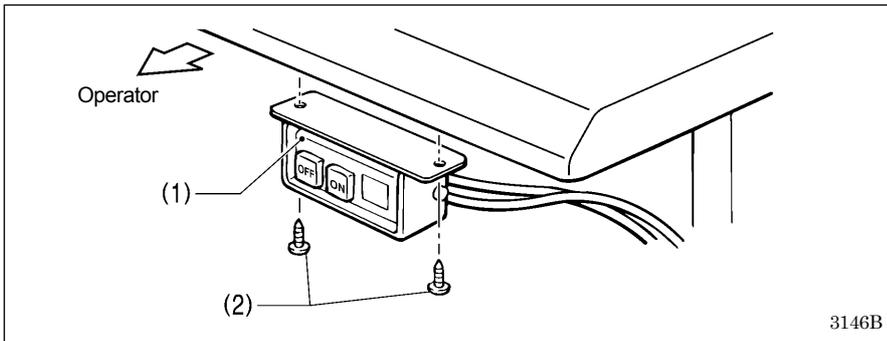
- (3) 3-pin power supply connector
- (4) Power cord
- (5) Staples [5 pcs]

1. Attach an appropriate plug to the power cord (4). (The green and yellow wire is the ground wire.)
2. Insert the power plug into a properly-grounded electrical outlet.

**NOTE:**

- Take care when tapping in the staples (5) to make sure that they do not pierce the cords.
  - Do not use extension cords, otherwise machine operation problems may result.
3. Use the six screws to tighten the cover of the control box. Check that none of the cords are being clamped by the cover at this time.

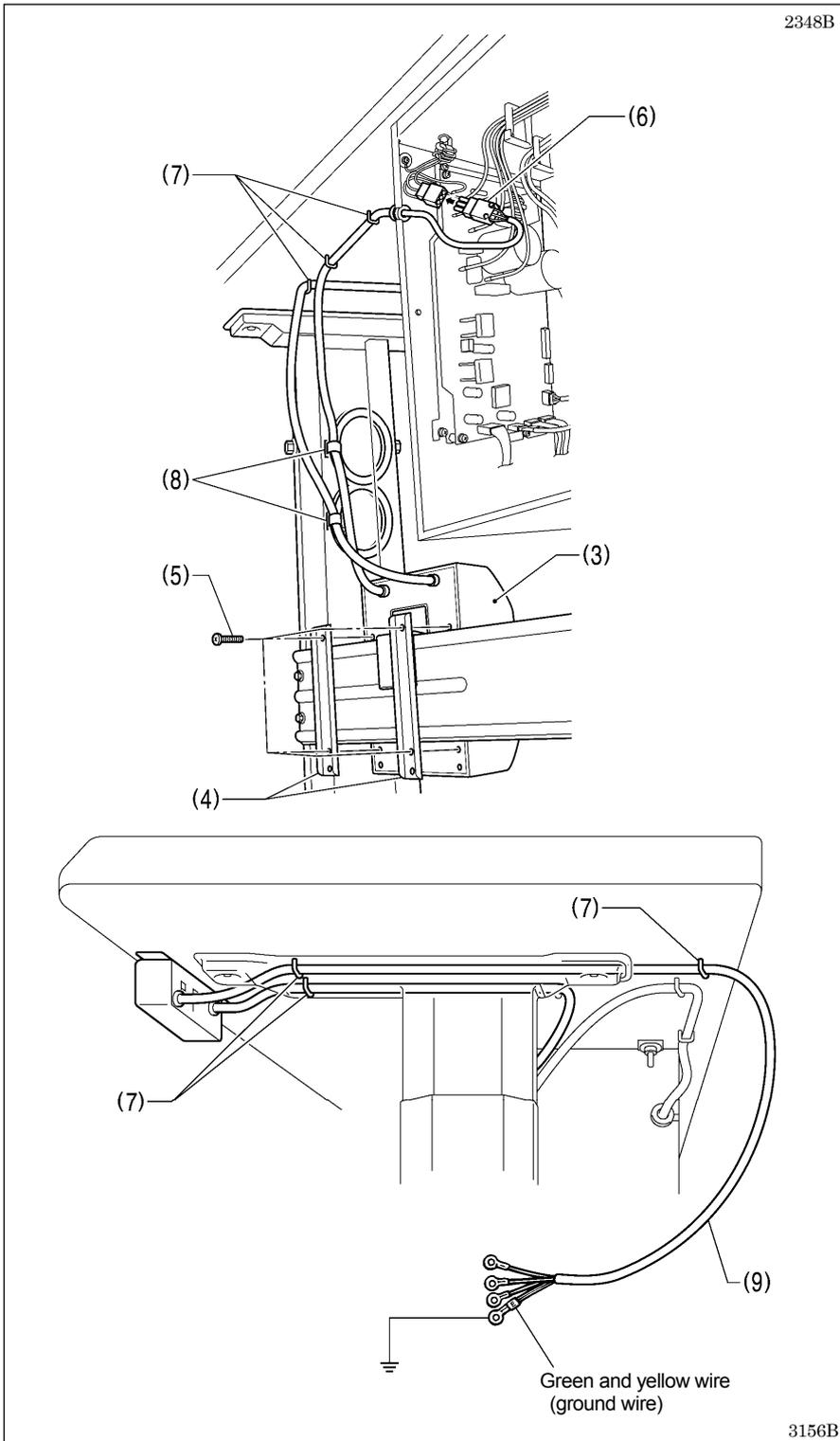
### 3. INSTALLATION



<100 V / 400 V system >

- (1) Power switch
- (2) Screws [2 pcs]

3146B



2348B

- (3) Transformer box
- (4) Transformer box plates [2 pcs]
- (5) Screw [with washer]
- (6) 3-pin power supply connector
- (7) Staples [6 pcs]
- (8) Cord clamps [2 pcs]
- (9) Power cord

1. Attach an appropriate plug to the power cord (9). (The green and yellow wire is the ground wire.)
2. Insert the power plug into a properly-grounded AC power supply.

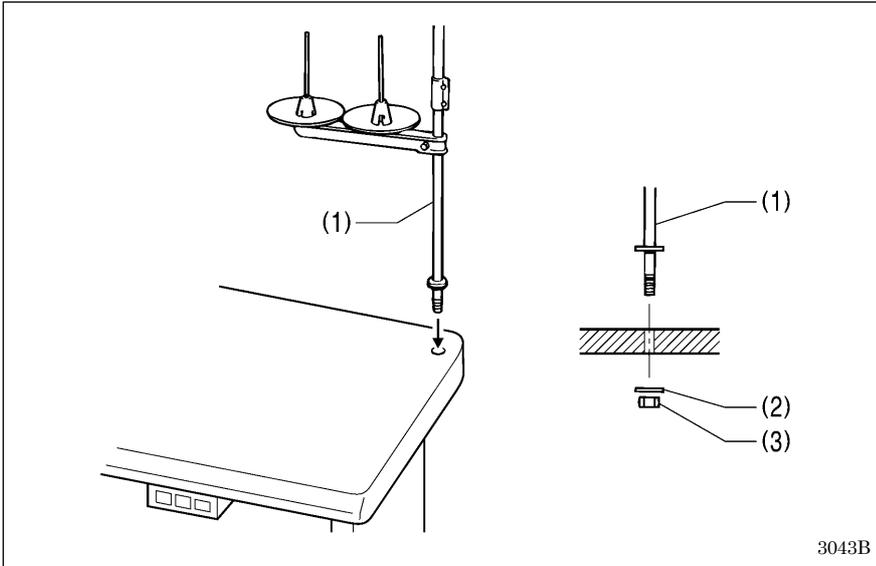
\* The inside of the control box uses single-phase power.

**NOTE:**

- If the ground connection is not secure, electric shocks, operating errors or damage to electronic components such as P.C. boards may occur.
  - Take care when tapping in the staples (7) to make sure that they do not pierce the cords.
  - Do not use extension cords, otherwise machine operation problems may result.
3. Use the six screws to tighten the cover of the control box. Check that none of the cords are being clamped by the cover at this time.

3156B

### 3-10. Installing the cotton stand

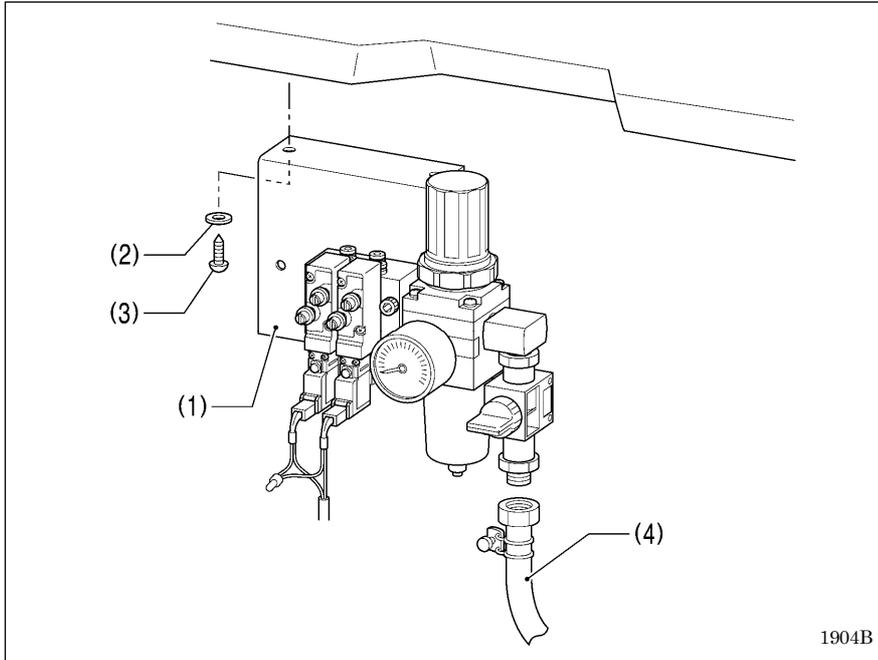


(1) Cotton stand

**NOTE:**

Fit the washer (2), and then securely tighten the nut (3) so that the cotton stand does not move.

### 3-11. Installing the pneumatic unit (pneumatic work clamp specifications)



Install underneath the work table.

- (1) Solenoid valve assembly
- (2) Washers [2 pcs.]
- (3) Wood screws [2 pcs.]
- (4) Rubber hose

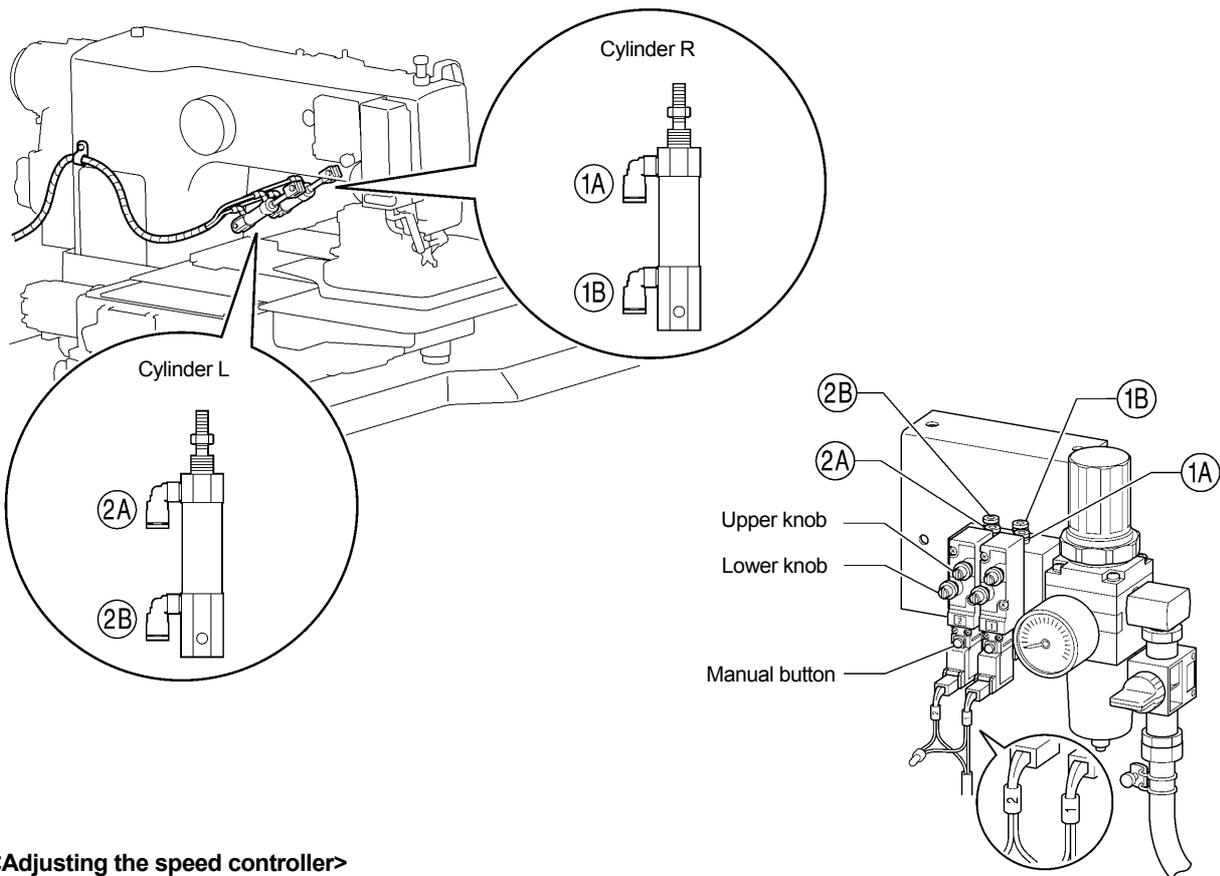
After installing the pneumatic unit, adjust the air pressure.  
(Refer to "10-16. Adjusting the air pressure" in the instruction manual CD.)

**NOTE:**

Make sure that the pneumatic unit does not touch the control box or the work table leg.

1904B

Connect each air tube to the position with the corresponding number.



**<Adjusting the speed controller>**

You can use the valve knobs to adjust the lifting and lowering speeds.

The valve knobs should be adjusted so that the left and right sides of the work clamp operate at the same speed.

- When the upper knob is tightened, the lifting speed becomes slower. When it is loosened, the lifting speed becomes faster.
- When the lower knob is tightened, the lowering speed becomes slower. When it is loosened, the lowering speed becomes faster.

You can operate the work clamp while the power is turned off by pressing the manual button.

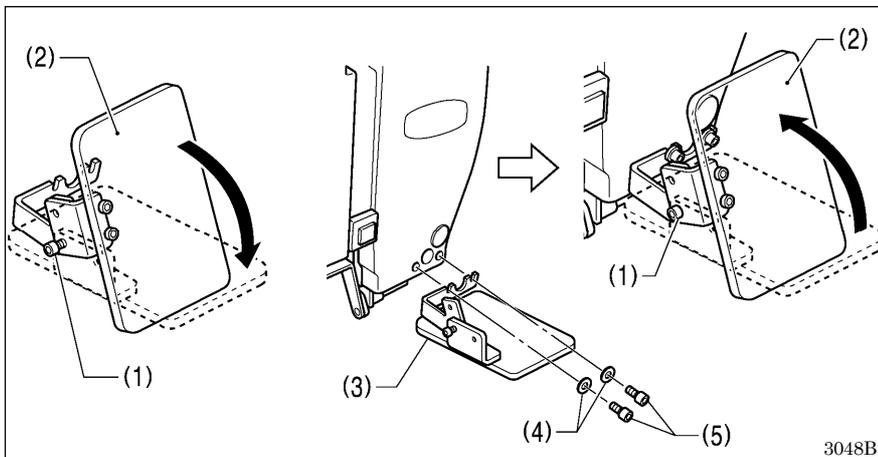
3097B 1905B

### 3-12. Installing the eye guard

## ⚠ CAUTION



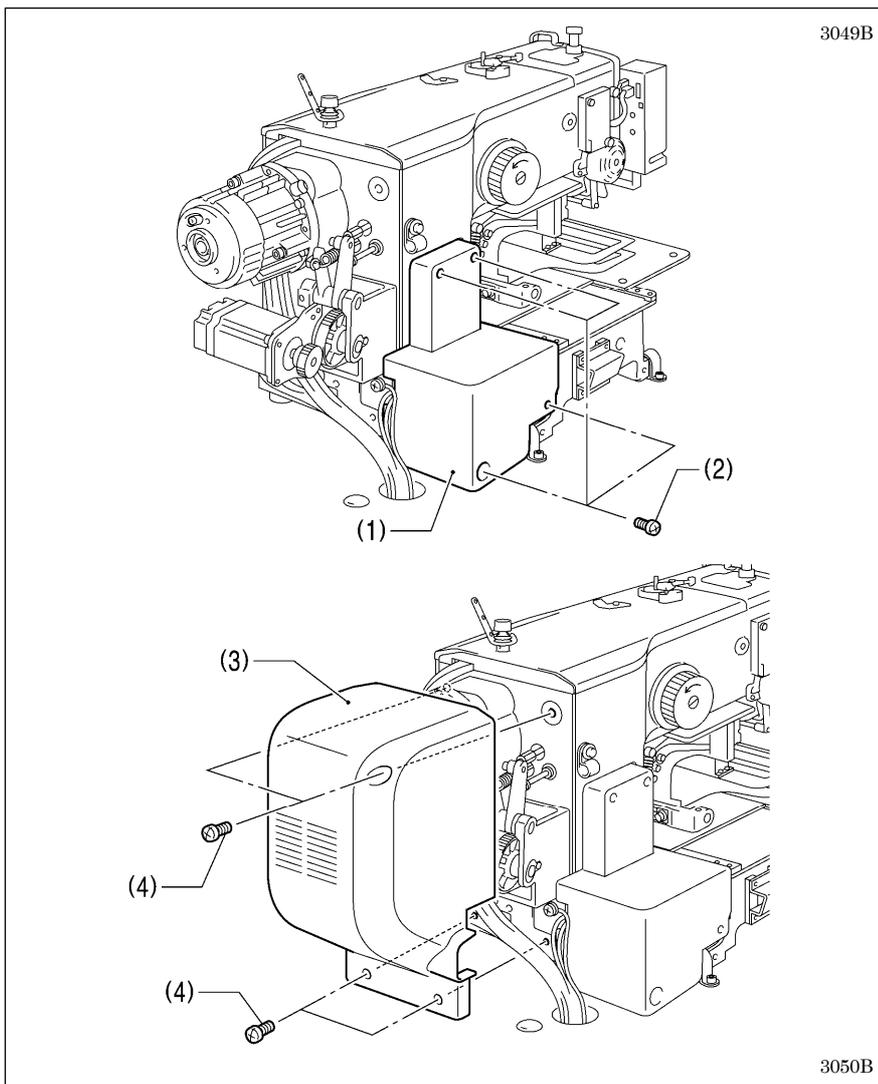
Attach all safety devices before using the sewing machine.  
If the machine is used without these devices attached, injury may result.



- (1) Bolt (loosen)
- (2) Eye guard (tilt forward)
- (3) Eye guard assembly
- (4) Plain washers [2 pcs.]
- (5) Bolts [2 pcs.]

After installing the eye guard assembly (3), return the eye guard (2) to its original angle, and then tighten the screw (1) to secure it in place.

### 3-13. Installing the side cover and rear cover



- (1) Side cover
- (2) Screws [4 pcs.]
- (3) Rear cover
- (4) Screws [4 pcs.]

**NOTE:**

Be careful not to clamp the cords when installing the side cover and the rear cover.

### 3-14. Lubrication

## ⚠ CAUTION



Do not connect the power cord until lubrication is complete.  
If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.

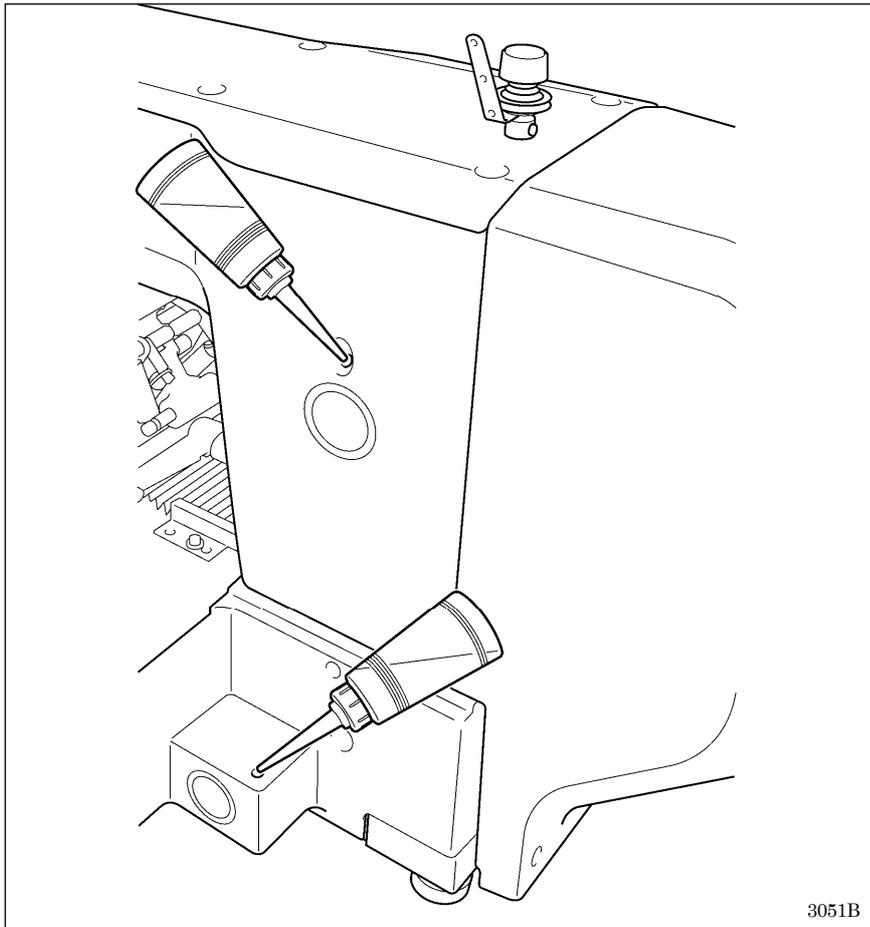


Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin. If the oil and grease get into your eyes or onto your skin, inflammation can result. Furthermore, do not drink or eat the lubricating oil or grease. They may cause diarrhea or vomiting. Keep the oil out of the reach of children.

The sewing machine should always be lubricated and the oil supply replenished before it is used for the first time, and also after long periods of non-use.

Use only the lubricating oil <JX Nippon Oil & Energy Corporation Sewing Lube 10N; VG10> specified by Brother.

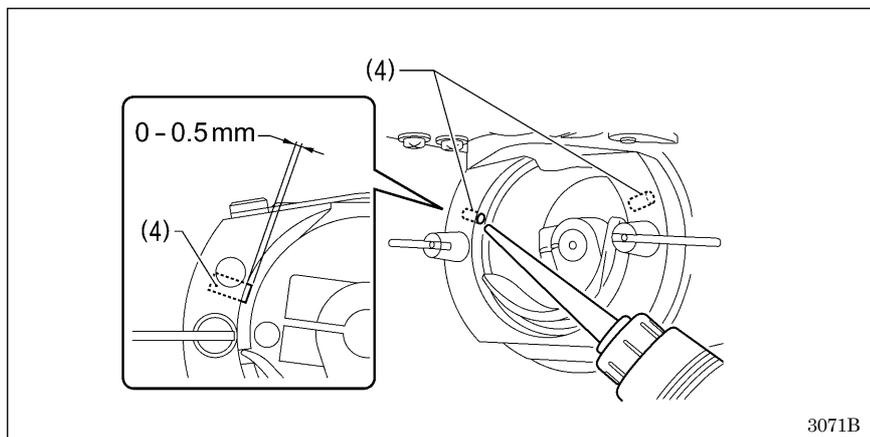
\* If this type of lubricating oil is difficult to obtain, the recommended oil to use is <Exxon Mobil EssoTex SM10; VG10>.



1. Fill the arm-side oil tank with oil.
2. Fill the bed-side oil tank with oil.

**NOTE:**

Be sure to fill the machine with oil when the oil level is down to about one-third full in the oil sight glass. If the oil drops below the one-third level, there is the danger that the machine may seize during operation.



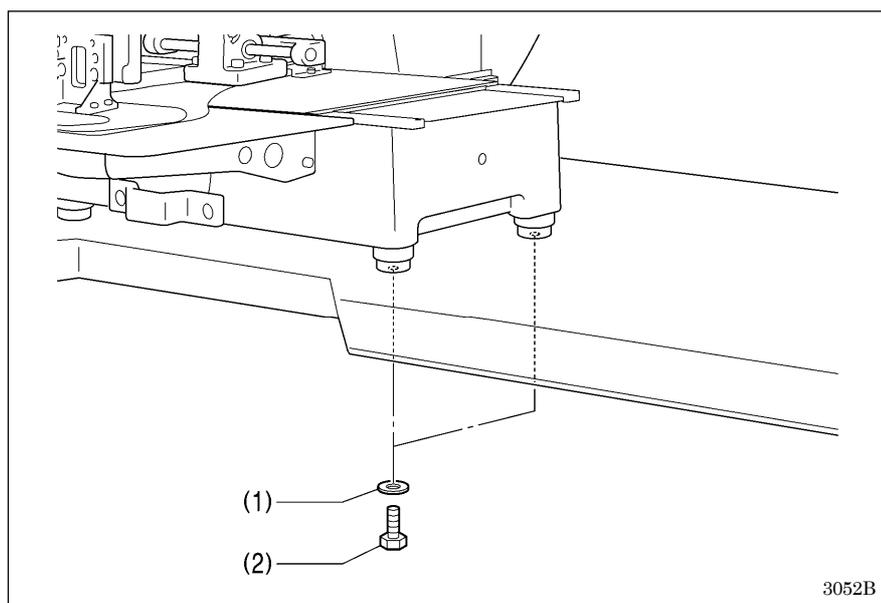
3. Pour oil in through the two holes of the shuttle race base assembly so that the felt (4) is lightly moistened.

**NOTE:**

- The two pieces of felt (4) should normally project by 0 to 0.5 mm from the hook race. Be careful not to push in the felt (4) when lubricating.
- If there is no more oil on the felt (4) of the shuttle race base assembly, problems with sewing may result.

### 3-15. Installing the machine head fixing bolt

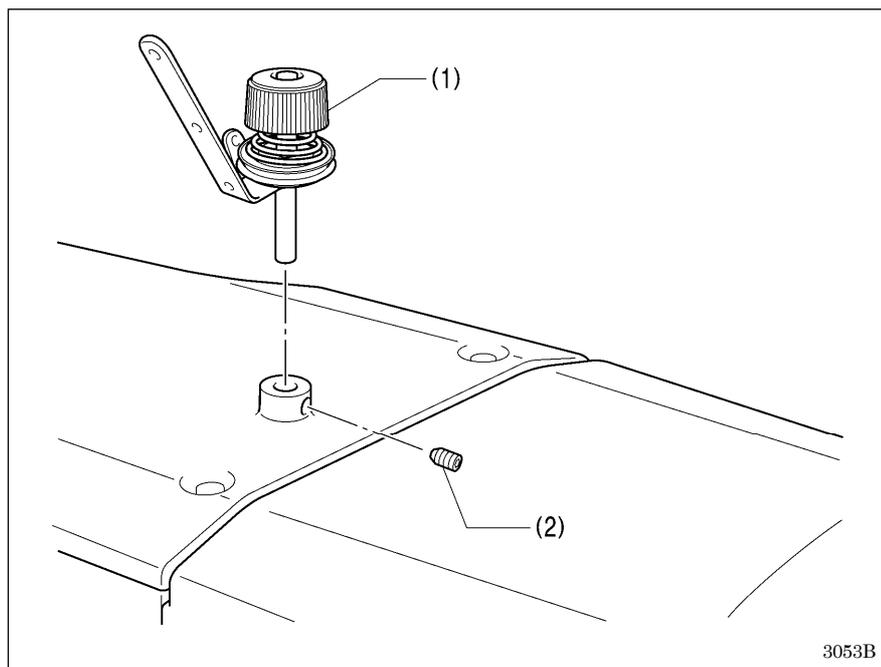
When transporting the sewing machine, secure the machine head to the table with the machine head fixing bolt.



- (1) Plain washer [2 pcs.]
- (2) Machine head fixing bolts [2 pcs.]

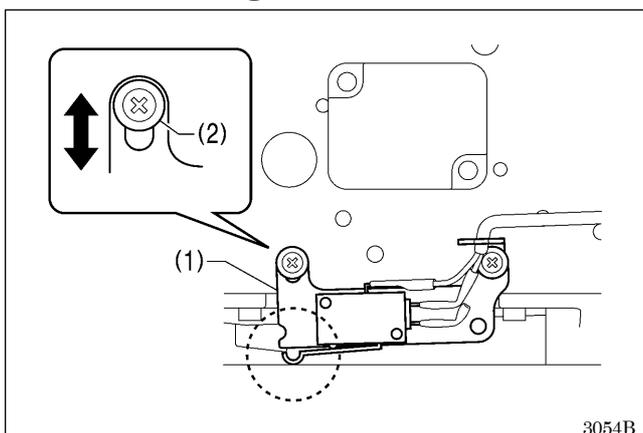
**NOTE:**  
When operating the sewing machine, remove the machine head fixing bolt.

### 3-16. Installing the bobbin winder tension



- (1) Bobbin winder tension
- (2) Set screw [1 pc.]

### 3-17. Checking the machine head switch



1. Turn on the power switch.
2. Check that no error numbers appear on the operation panel.

**<If error [E050], [E051] or [E055] is displayed>**  
If the machine head switch (1) is not turned on, error [E050], [E051] or [E055] will occur.

Use the screw (2) to adjust the installation position of the machine head switch as shown in the illustration.

## 4. PREPARATION BEFORE SEWING

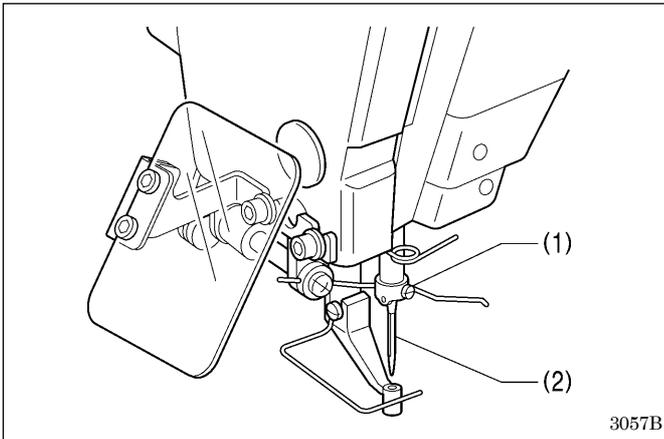
### 4-1. Installing the needle

#### ⚠ CAUTION



Turn off the power switch before installing the needle.

If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.

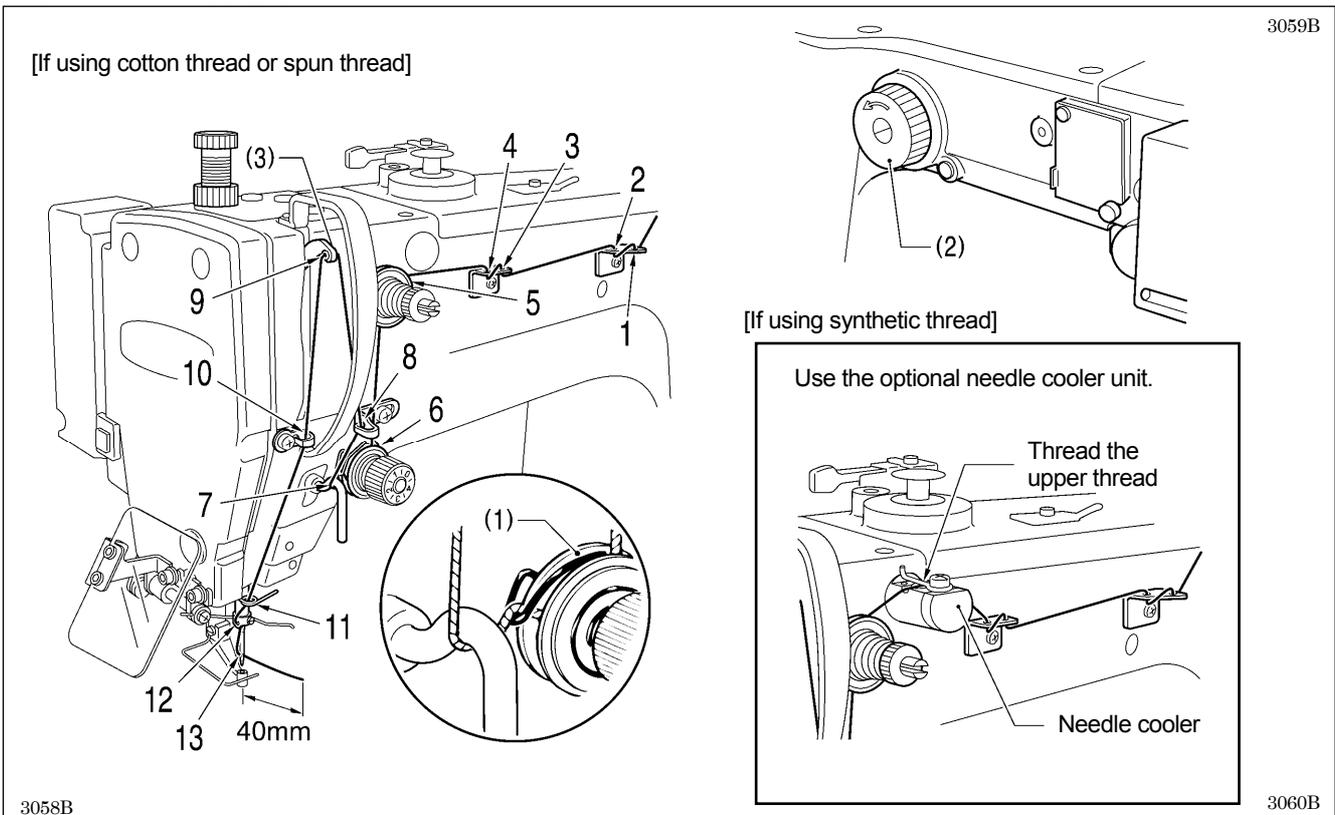


1. Loosen the set screw (1).
2. Insert the needle (2) in a straight line as far as it will go, making sure that the long groove on the needle is at the front, and then securely tighten the set screw (1).

### 4-2. Threading the upper thread

Thread the upper thread correctly as shown in the illustration below.

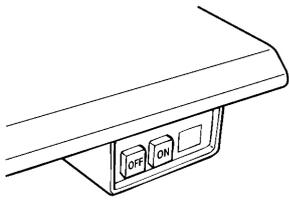
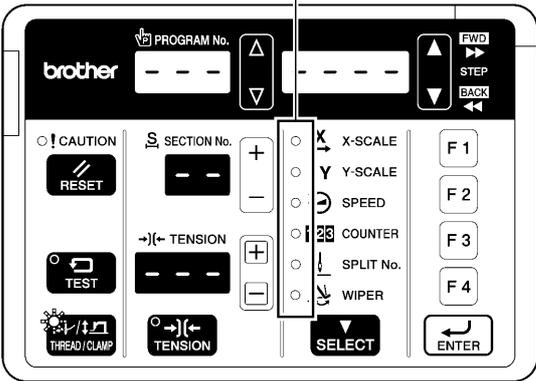
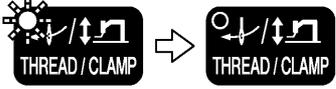
- \* When using threading mode for threading, the tension discs (1) will open so that the thread can be threaded more easily. (Refer to following page.)



- Turn the machine pulley (2) and raise the thread take-up (3) to its highest position before threading the upper thread. (This will make threading easier and it will prevent the thread from coming out at the sewing start.)
- When threading the thread through the needle, allow a distance of approximately 40 mm between the needle hole and the end of the thread.  
If the trailing length of the thread is too long, it may cause the thread to become tangled.

<Threading mode>

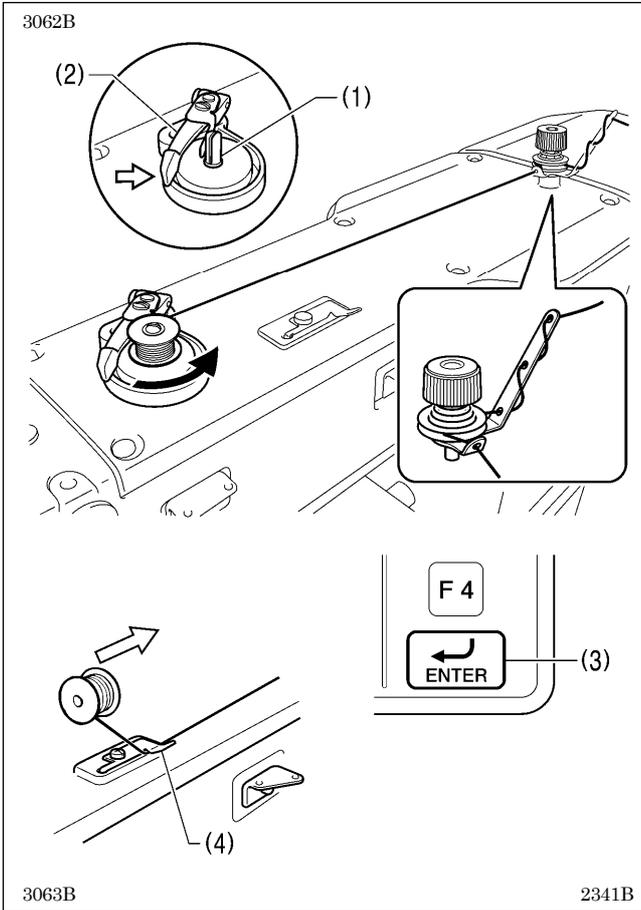
Threading mode is safe because the sewing machine will not start even when the foot switch is depressed.

<p>1</p>	 <p>Turn on the power switch.</p> <p style="text-align: right;">3055B</p>
<p>2</p>	<p>All indicators switch off</p>  <p>Press the THREAD/CLAMP key.</p>  <ul style="list-style-type: none"> <li>• The work clamp will drop.</li> <li>• The tension discs will open.</li> </ul> <p>THREAD/CLAMP indicator illuminates MENU indicator switches off</p> <p style="text-align: right;">3061B 4427Q</p>
<p>3</p>	<p><b>Threading the thread.</b></p>
<p>4</p>	<p><b>Ending threading mode</b></p>  <p>Press the THREAD/CLAMP key.</p> <ul style="list-style-type: none"> <li>• The work clamp will return to where it was before threading mode was started.</li> </ul> <p>THREAD/CLAMP indicator switches off</p> <p style="text-align: right;">2390B</p>

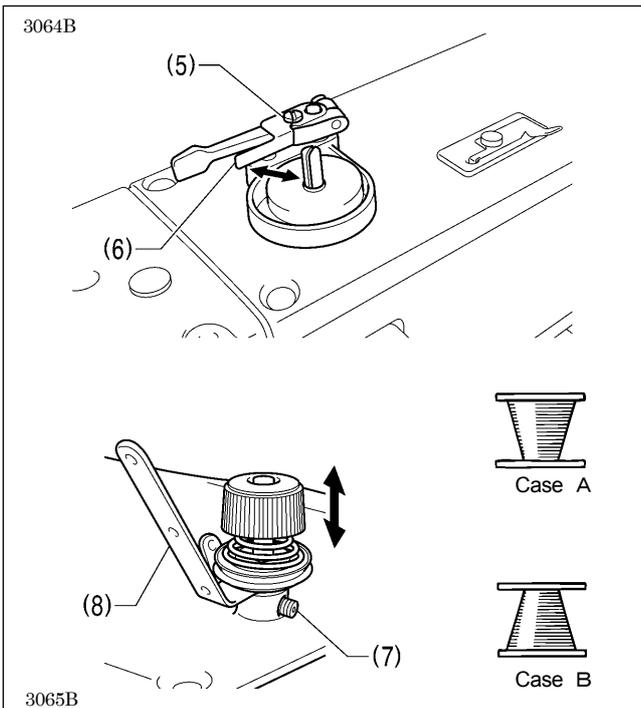
### 4-3. Winding the lower thread

## CAUTION

 Do not touch any of the moving parts or press any objects against the machine while winding the lower thread, as this may result in personal injury or damage to the machine.



1. Place the bobbin onto the bobbin winder shaft (1).
2. Thread the thread as shown in the illustration, wind the thread around the bobbin several times, and then press the bobbin presser arm(2).
3. Turn on the power switch.
4. Depress the foot switch to the second step. The feed mechanism will move to the home position.
5. Check that the needle does not touch the work clamp, and then while pressing the ENTER key (3), depress the foot switch to the 2nd step.
6. Release the ENTER key (3) after the machine starts operating, and keep depressing the foot switch until the lower thread stops being wound onto the bobbin.  
(If you release the foot switch before winding is complete, and then depress it again while pressing the ENTER key (3), winding will start again.)
7. Once winding of the set amount of lower thread (80 - 90% of the bobbin capacity) is completed, the bobbin presser arm (2) will return automatically.
8. Remove the bobbin, hook the thread onto the knife (4), and then pull the bobbin in the direction of the arrow to cut the thread.



#### Adjusting the bobbin winding amount

Loosen the screw (5) and move the bobbin presser (6).

#### If the thread winds onto the bobbin unevenly

Loosen the set screw (7) and move the bobbin wider tension assembly (8) up and down to adjust.

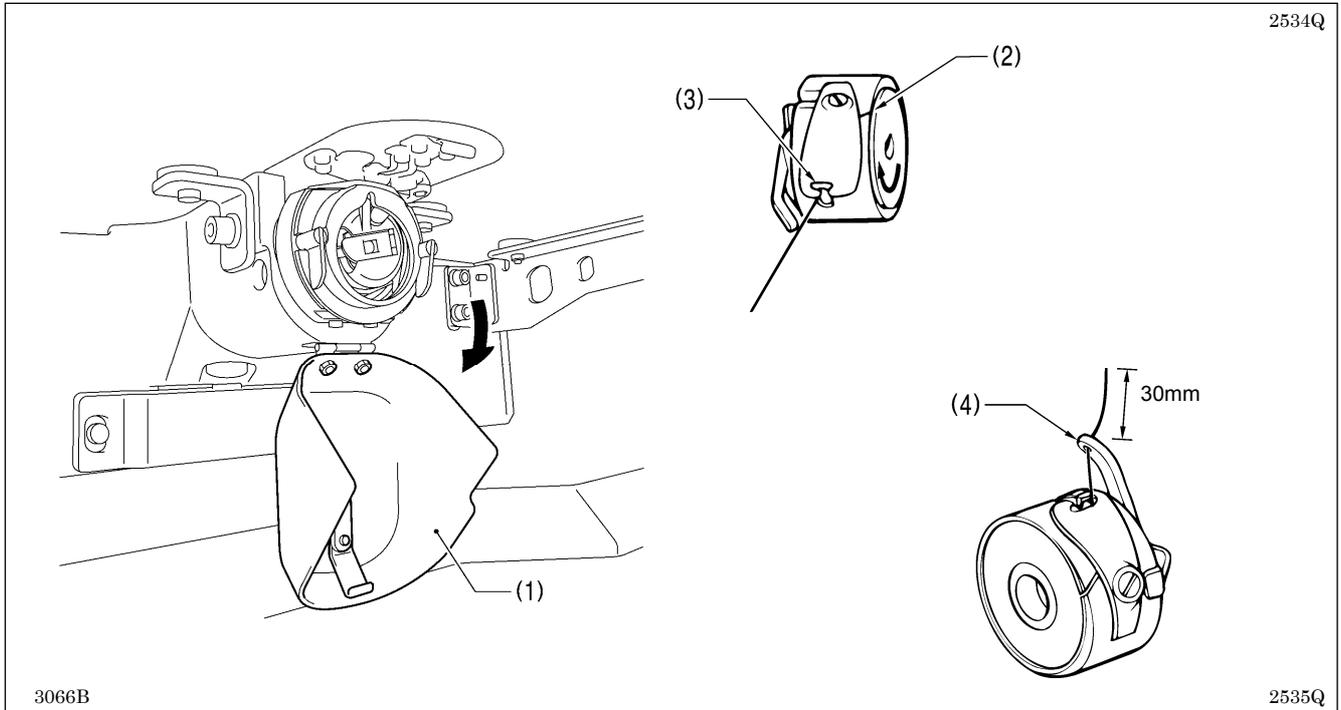
\* For case A, move the bobbin winder tension assembly (8) down, and for case B, move it upward.

## 4-4. Installing the bobbin case

**! CAUTION**

Turn off the power switch before installing the bobbin case.

If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.



1. Pull the shuttle race cover (1) downward to open it.
2. While holding the bobbin so that the thread winds to the right, insert the bobbin into the bobbin case.
3. Pass the thread through the slot (2) and pull it out from the thread hole (3).
4. Check that the bobbin turns in the direction of the arrow when the thread is pulled.
5. Pass the thread through the lever thread hole (4), and then pull out approximately 30 mm of thread.
6. Hold the latch on the bobbin case and insert the bobbin case into the rotary hook.

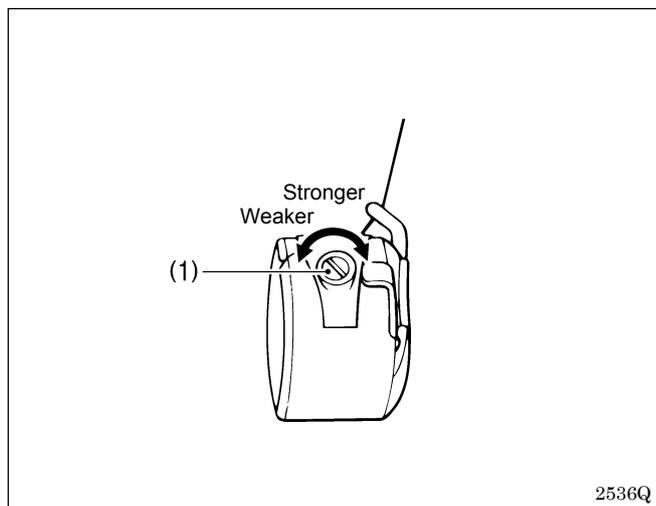
#### 4. PREPARATION BEFORE SEWING

### 4-5. Thread tension

[Thread tension reference]

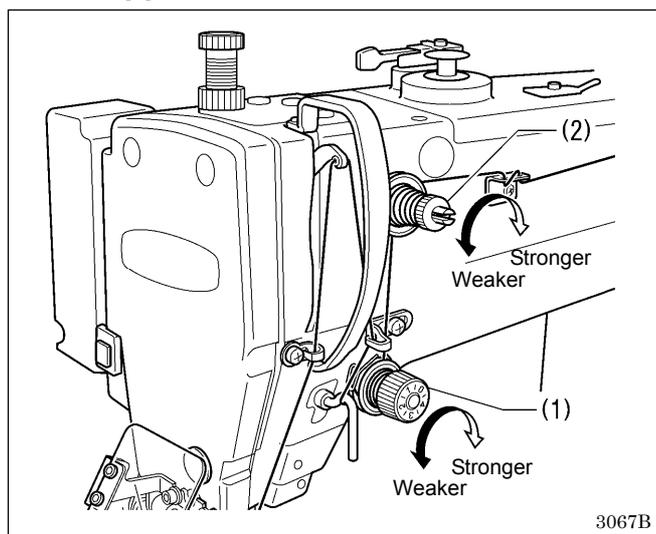
Specifications	Medium-weight materials (-03[])	Heavy-weight materials (-05[])	Seatbelt (-07[])
Upper thread	#50 or similar	#20 or similar	#4 or similar
Lower thread	#50 or similar	#20 or similar	#4 or similar
Upper thread tension (N)	0.8 – 1.2	1.4 – 1.8	1.2 – 2.0
Lower thread tension (N)	0.2 – 0.3		1.0 – 1.5
Pre-tension (N)	0.1 – 0.3	0.1 – 0.6	0.3 – 0.6
Needle	DP x 5 #16	DP x 17 #19	DP x 17 #25
Normal sewing speed	2,000 sti/min	2,000 sti/min	1,300 sti/min

#### 4-5-1. Lower thread tension



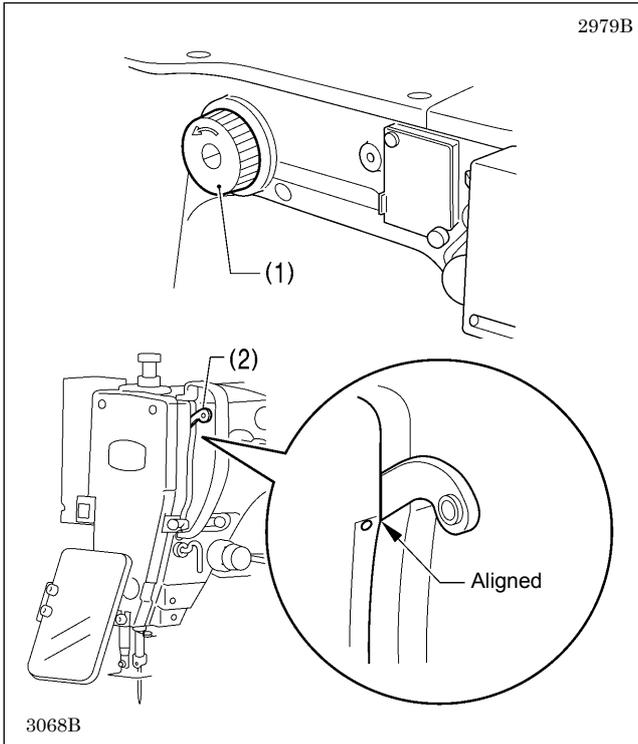
Adjust the thread tension to the weakest possible tension by turning the thread tension nut (1) until the bobbin case will not drop by its own weight while the thread end coming out of the bobbin case is held.

#### 4-5-2. Upper thread tension



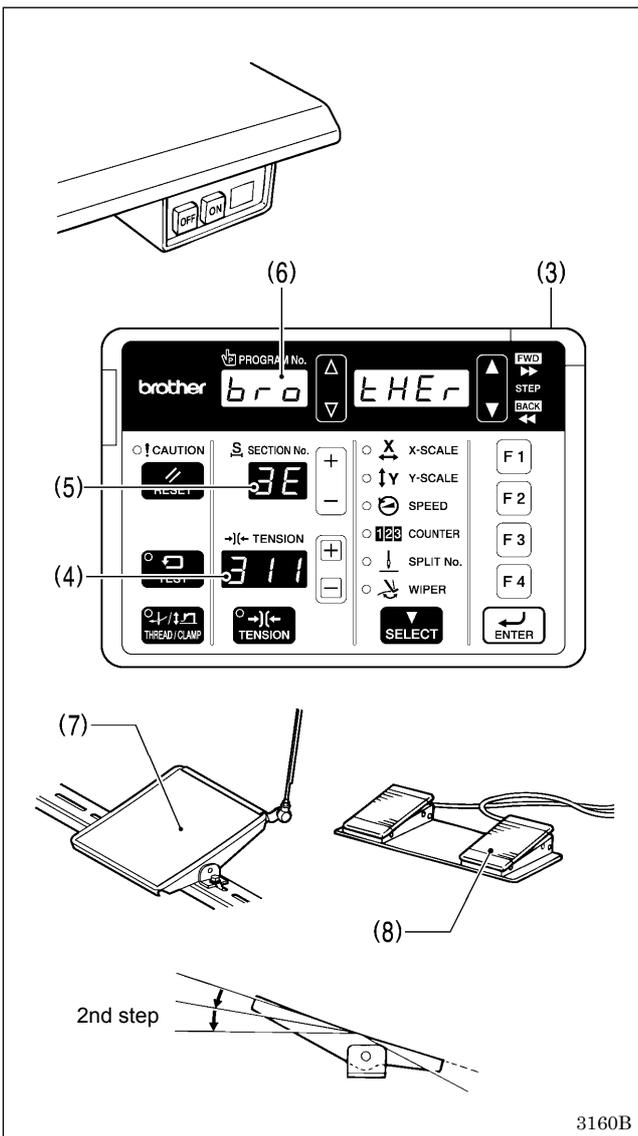
1. Turn the tension nut (1) (main tension) to adjust the tension as appropriate for the material being sewn.
2. Use the tension nut (2) (sub tension) to adjust the upper thread trailing length to about 40 mm.

### 4-6. Starting up



Before turning on the power switch, check that the needle bar is at the needle up stop position.

Turn the pulley (1) in the direction of the arrow until the ridge at the bottom of the thread take-up (2) is aligned with the index mark.



1. Turn on the power switch.

The POWER indicator (3) will illuminate, and the model name will appear in the tension value display (4) and the specifications will appear in the section No. display (5).

Specifications		Display
Medium-weight materials Motor-driven work clamp	-03S	3E
Medium-weight materials Pneumatic work clamp	-03A	3A
Heavy-weight materials Motor-driven work clamp	-05S	5E
Heavy-weight materials Pneumatic work clamp	-05A	5A
Seatbelts	-07A	7A

3151B 3152B 3153B 3154B 3155B

After this, the program number will flash in the program No. display (6).

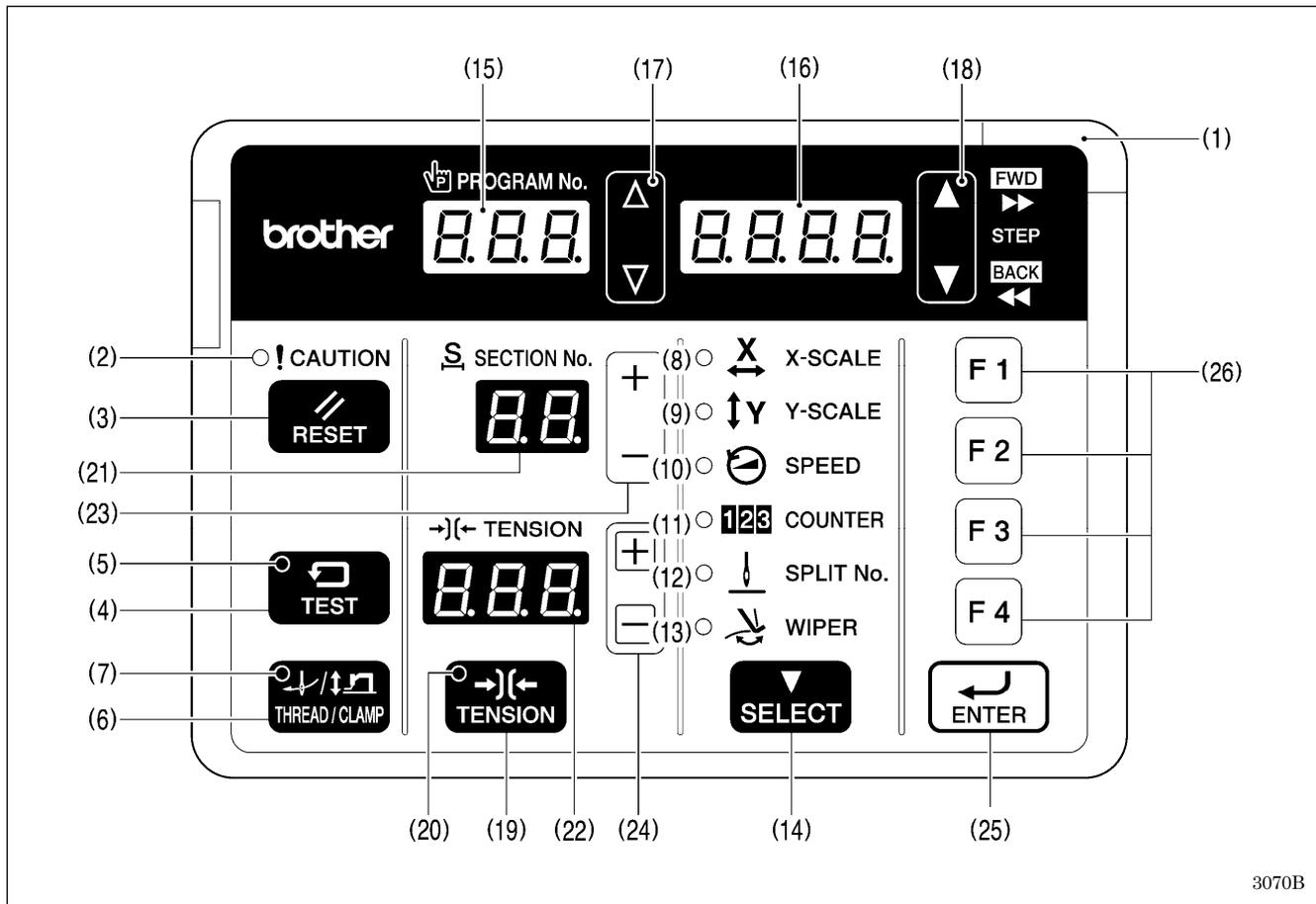
2. Depress the foot switch (7) to the 2nd step.  
The sewing machine will move to the home position and the work clamp will rise.  
(If using a two-pedal foot switch, lower the work clamp before depressing the start switch (8).)

**NOTE:**

If error "UP" appears when the foot switch is depressed, turn the pulley (1) in the direction of operation to clear the error.

## 5. USING THE OPERATION PANEL (BASIC OPERATIONS)

### 5-1. Name and function of each operation panel item



**(1) Power indicator**

Illuminates when the power is turned on.

**(2) CAUTION indicator**

Illuminates when an error occurs.

**(3) RESET key**

Used to reset errors.

**(4) TEST key**

Used to switch to test mode, or it can be used in combination with other keys to switch to other setting modes.

**(5) TEST indicator**

Illuminates when the TEST key (4) has been pressed.

**(6) THREAD/CLAMP key**

Used to start threading mode or work clamp height setting mode.

**(7) THREAD/CLAMP indicator**

Illuminates when the THREAD/CLAMP key (6) has been pressed.

**(8) X-SCALE indicator**

Illuminates when the SELECT key (14) is pressed to switch to the X-scale setting.

**(9) Y-SCALE indicator**

Illuminates when the SELECT key (14) is pressed to switch to the Y-scale setting.

**(10) SPEED indicator**

Illuminates when the SELECT key (14) is pressed to switch to the sewing speed setting.

**(11) COUNTER indicator**

Illuminates when the SELECT key (14) is pressed to switch to the lower thread or production counter setting.

**(12) SPLIT No. indicator**

Illuminates when the SELECT key (14) is pressed to show the split setting when split data (for specifying a pause while the program is running) exists.

**(13) WIPER indicator**

Illuminates when the SELECT key (14) is pressed to switch to the thread wiper.

**(14) SELECT key**

Used to select the desired menu (horizontal and vertical scale, sewing speed, counter, (split No.), thread wiping).

**(15) PROGRAM No. display**

Shows information such as program numbers.

**(16) Menu display**

Displays information such as menu setting values, memory switch settings and error codes.

**(17) Setting keys ▽ ▲**

Used to change the value which is displayed in the PROGRAM No. display (15).

**(18) Setting keys ▼ ▲**

Used to change the value which is displayed in the menu display (16).

**(19) TENSION key**

Not used.

**(20) TENSION indicator**

Not used.

**(21) SECTION No. display**

Not used.

**(22) TENSION display**

Shows the program number when copying programs and using SD cards.

**(23) Setting keys [+ , -]**

Not used.

**(24) Setting keys [   ]**

Not used.

**(25) ENTER key**

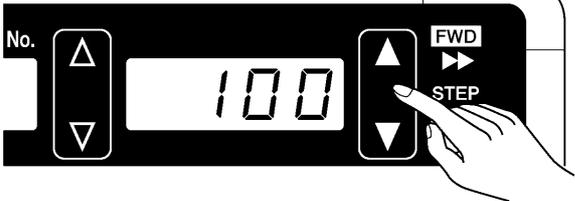
Used to accept the values which are displayed in places such as the menu display (16).

**(26) Function keys [F1, F2, F3, F4]**

Used to directly select program numbers and cycle program numbers.

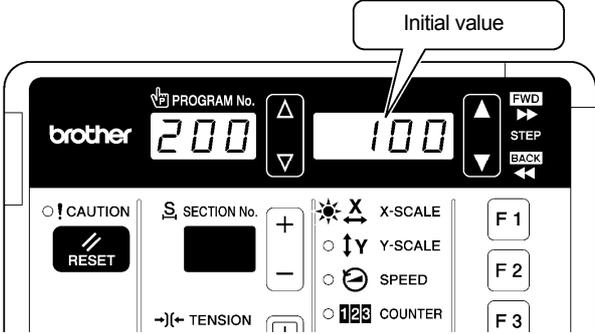
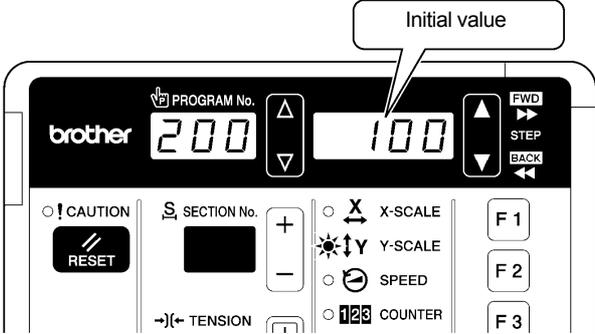
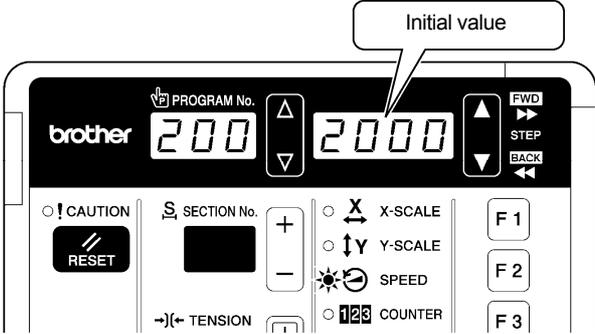
## 5-2. Program setting method

For details on the sewing data reading method, refer to "6. USING SD CARDS".

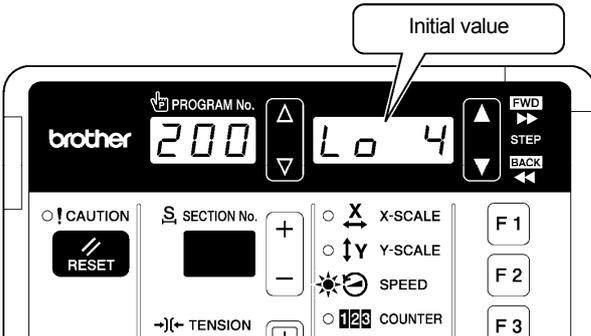
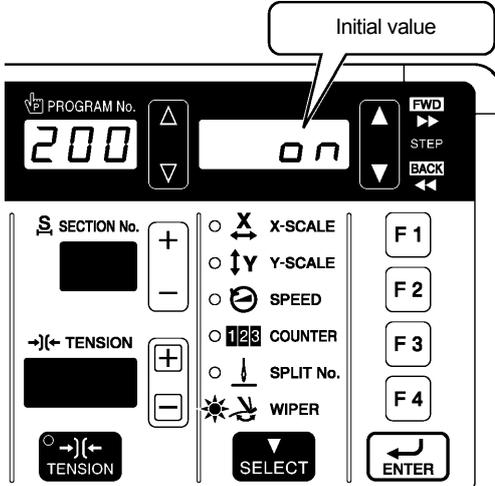
<p><b>1</b></p>	<p><b>Select the item to be changed.</b></p>  <p>2401B</p> <p><b>X-scale → Y-scale → Sewing speed → Slow start pattern → Counter → Split No. → Thread wiping</b></p>	<p>Press the SELECT key.</p> <ul style="list-style-type: none"> <li>The selected parameter changes in the order shown in the illustration below each time the SELECT key is pressed.</li> </ul>
<p><b>2</b></p>	<p><b>Change the setting for the parameter.</b> (Refer to "5-2-1. Parameter list" on the next page for details on parameter changes.)</p>  <p>3072B</p>	<p>Press the ▲ or ▼ key to change the parameter setting.</p>
<p><b>3</b></p>	<p><b>Repeat steps 1 to 2 above to record the settings for each parameter.</b></p>	

- \* When memory switch No. 400 is set to ON, the horizontal scale, vertical scale, sewing speed and work clamp height can be recorded separately for each program number.
- \* When memory switch No. 100 is set to ON, slow start patterns can be recorded separately for each program number.
- \* For details on memory switches, refer to "6-1. Setting memory switches" in the instruction manual CD.

5-2-1. Parameter list

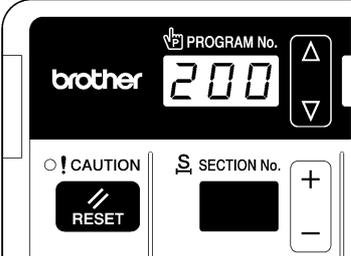
Parameter	Setting range and initial value	Display
<p><b>X-scale</b></p>	<p>0% - 400% (Limited by available sewing area.)</p> <p>(Initial value is 100%.)</p> <p>* The setting can be displayed in “mm” units by setting memory switch No. 402 to “ON”.</p>	 <p style="text-align: right;">3073B</p>
<p><b>Y-scale</b></p>	<p>0% - 400% (Limited by available sewing area.)</p> <p>(Initial value is 100%.)</p> <p>* The setting can be displayed in “mm” units by setting memory switch No. 402 to “ON”.</p>	 <p style="text-align: right;">3074B</p>
<p><b>Sewing speed</b></p>	<p>200 sti/min to 2800 sti/min Setting units are 100 sti/min.</p> <p>(Initial value is 2000 sti/min.)</p>	 <p style="text-align: right;">3075B</p>

## 5. USING THE OPERATION PANEL (BASIC OPERATIONS)

Parameter	Setting range and initial value	Display																																																		
<b>Slow start pattern</b>	Lo1-Lo9 (Initial values: Lo4)																																																			
	<p>The starting-up speed at the sewing start can be adjusted.</p> <p>* The smaller the number, the slower the start. * This is used to stop the thread from pulling out at the sewing start, and at times when skipped stitches might easily occur.</p>																																																			
		3076B																																																		
		(sti/min)																																																		
	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th></th> <th>Lo1</th> <th>Lo2</th> <th>Lo3</th> <th>Lo4</th> <th>Lo5</th> <th>Lo6</th> <th>Lo7</th> <th>Lo8</th> <th>Lo9</th> </tr> </thead> <tbody> <tr> <td>Sewing speed for 1st stitch</td> <td>200</td> <td>200</td> <td>300</td> <td>400</td> <td>400</td> <td>400</td> <td>400</td> <td>600</td> <td>800</td> </tr> <tr> <td>Sewing speed for 2nd stitch</td> <td>200</td> <td>300</td> <td>400</td> <td>400</td> <td>500</td> <td>600</td> <td>800</td> <td>1000</td> <td>1200</td> </tr> <tr> <td>Sewing speed for 3rd stitch</td> <td>300</td> <td>400</td> <td>500</td> <td>600</td> <td>800</td> <td>1000</td> <td>1200</td> <td>1600</td> <td>*1</td> </tr> <tr> <td>Sewing speed for 4th stitch</td> <td>500</td> <td>600</td> <td>700</td> <td>900</td> <td>1200</td> <td>1400</td> <td>*1</td> <td>*1</td> <td>*1</td> </tr> </tbody> </table>		Lo1	Lo2	Lo3	Lo4	Lo5	Lo6	Lo7	Lo8	Lo9	Sewing speed for 1st stitch	200	200	300	400	400	400	400	600	800	Sewing speed for 2nd stitch	200	300	400	400	500	600	800	1000	1200	Sewing speed for 3rd stitch	300	400	500	600	800	1000	1200	1600	*1	Sewing speed for 4th stitch	500	600	700	900	1200	1400	*1	*1	*1	
	Lo1	Lo2	Lo3	Lo4	Lo5	Lo6	Lo7	Lo8	Lo9																																											
Sewing speed for 1st stitch	200	200	300	400	400	400	400	600	800																																											
Sewing speed for 2nd stitch	200	300	400	400	500	600	800	1000	1200																																											
Sewing speed for 3rd stitch	300	400	500	600	800	1000	1200	1600	*1																																											
Sewing speed for 4th stitch	500	600	700	900	1200	1400	*1	*1	*1																																											
		*1 Sewing will be carried out at the sewing speed which is set by the parameters.																																																		
<b>Counter</b>	Refer to "5-2-3. Using the production counter" in the instruction manual CD.																																																			
<b>Split No.</b>	Refer to "5-2-4. Split number setting method" in the instruction manual CD.																																																			
<b>Thread wiping</b>	ON, OFF (Initial setting is "ON".)																																																			
		3158B																																																		

### 5-3. Copying programs

Sewing programs can be copied to other program numbers.

<p><b>1</b> Press the <math>\Delta</math> or <math>\nabla</math> key to select the program number that you would like to use as the copying destination.</p>	 <p>For example, to copy program number 200:</p>
<p><b>2</b> Switch to program copy mode.</p>	<p>While pressing the TEST key, press the SELECT key.</p> <div style="text-align: center;">  +  </div> <ul style="list-style-type: none"> <li>• “CoPy” will appear in the menu display, and the copying destination program number will appear in the tension value display.</li> </ul>
<p><b>3</b> Select the copying destination program number.</p>	<p>Press the <math>\oplus</math> or <math>\ominus</math> key to change the copying destination program number.</p> <ul style="list-style-type: none"> <li>* If a program has already been recorded in the selected copying destination program number, “..” will appear in the section display.</li> </ul>
<p><b>4</b> Copy the program.</p>	<p>Press the ENTER key.</p> <div style="text-align: center;">  </div> <ul style="list-style-type: none"> <li>• The program items will be copied.</li> </ul>

3084B

3161B

2397B

3085B

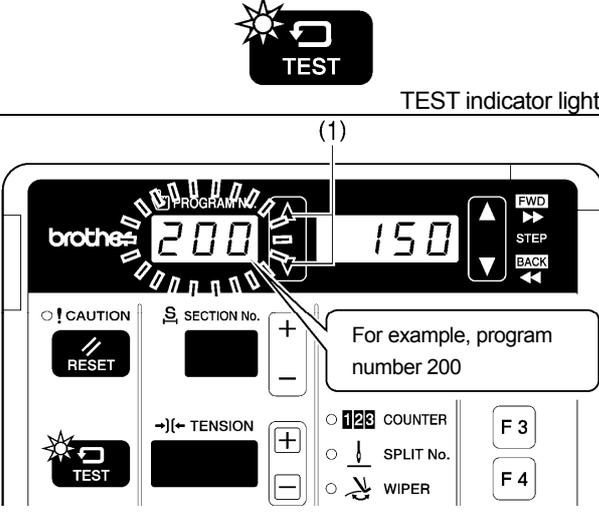
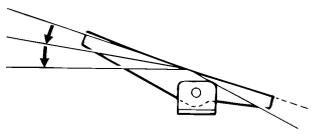
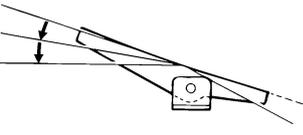
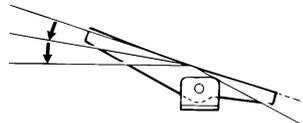
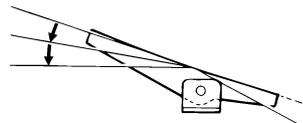
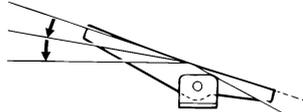
2382B 2383B

3086B

2414B

### 5-4. Checking the sewing pattern

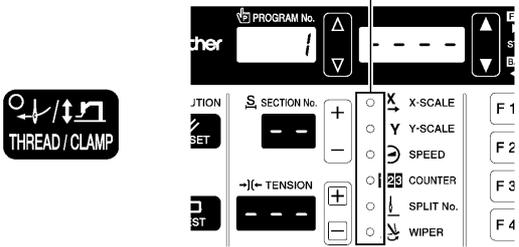
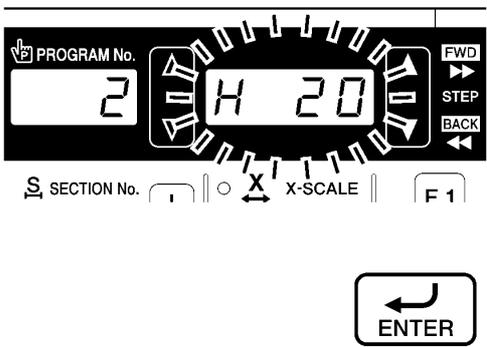
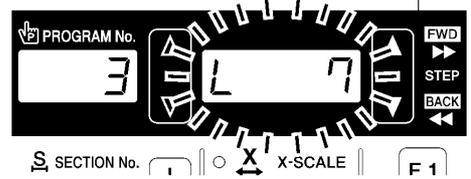
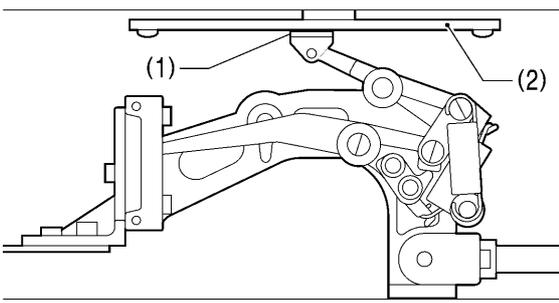
Use test feed mode to operate the feed mechanism in order to check the needle movement.  
Check that the needle hole does not come out from the frame of the work clamp.

<p>1</p>	 <p>TEST indicator lights</p> <p>Program No. flashes → illuminates</p>	<p>1. Press the TEST key.</p> <ul style="list-style-type: none"> <li>The number of stitches remaining until the final stitch will be displayed in the menu display.</li> </ul> <p>2. Press the <math>\Delta</math> or <math>\nabla</math> key (1) to set the program number that you would like to check.</p> <p>If the PROGRAM No. display is flashing, depress the foot switch to the 2nd step.</p> <ul style="list-style-type: none"> <li>The feed mechanism will move to the home position and the program number will change from flashing to illuminated.</li> </ul>  <p>2501B</p> <p>3087B 4441Q</p>
<p>2</p>	<p><b>Start continuous test feed mode.</b></p>  <p>4441Q</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>[Test interrupt mode]</b></p>  <p>2nd step</p>  <p>TEST indicator flashes</p> <p><b>[Paused sewing standby mode]</b></p>  <p>2nd step</p>  <p>TEST indicator switches off</p>  </div>	<p>Depress the foot switch to the 2nd step and then release it.</p> <ul style="list-style-type: none"> <li>The feed mechanism starts moving continuously one stitch at a time. (The stitch number display will be decremented by one stitch at a time.)</li> <li>The TEST indicator will flash.</li> </ul> <p><b>[Fast-forward test mode]</b></p> <p>If you depress the foot switch to the 1st step while the feed mechanism is moving, the speed of the feeding operation will become faster while the foot switch is being depressed.</p> <p>If you would like to stop the feeding operation, press the TEST key.</p> <ul style="list-style-type: none"> <li>If you depress the treadle to the 2nd step, feeding operation will restart.</li> </ul> <p>If you would like sewing to resume from the point where it was paused, press the TEST key while test feeding is paused to switch off the TEST indicator.</p> <ul style="list-style-type: none"> <li>If you depress the treadle to the 2nd step, sewing will start.</li> </ul> <p>If you press the <math>\Delta</math> key (2) while this mode is active, the feed mechanism will move forward by one stitch, and if you press the <math>\nabla</math> key (3), the feed mechanism will move back by one stitch. (The feed will move quicker if you keep the key pressed down.)</p> <ul style="list-style-type: none"> <li>If you press the RESET key, the feed mechanism will return to the sewing start position.</li> </ul> <p>2404B 2416B 4441Q</p> <p>2417B</p>
<p>3</p>	<p><b>Once the test feed reaches the final stitch, the feed mechanism stops moving.</b></p>  <p>TEST indicator switches off</p>	<p>Press the TEST key.</p> <p>2404B</p>
<p>4</p>	<p>1st step</p> 	<p>Depress the foot switch to the 1st step. The work clamp will rise and the preparation for sewing will be completed.</p> <p>4441Q</p>

## 5-5. Setting the work clamp lift amount

The settings for the work clamp and intermediate work clamp lift amount can be changed using the operation panel.

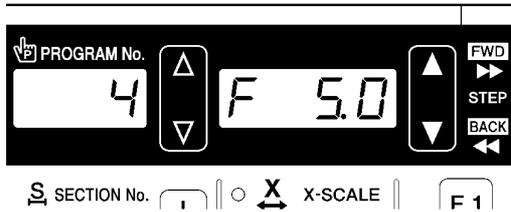
\* For pneumatic work clamp specifications, only threading mode and intermittent presser foot height setting mode will be available.

<b>1</b>	<p style="text-align: center;">All indicators switch off</p>  <p style="text-align: center;">THREAD/CLAMP indicator illuminates MENU indicator switches off</p>	<p>Press the THREAD/CLAMP key. The sewing machine will switch to threading mode.</p> <ul style="list-style-type: none"> <li>" 1" will appear in the PROGRAM No. display, and the work clamp will be lowered.</li> </ul>
<b>2</b>	<p><b>Motor-driven work clamp specifications only</b></p> 	<p>Press the <math>\Delta</math> key. The sewing machine will switch to work clamp height setting mode.</p> <ul style="list-style-type: none"> <li>" 2" will appear in the PROGRAM No. display, and the work clamp will be raised to the setting value which appears in the menu display. (Work clamp height setting: 15 – 25)</li> </ul> <p>Press the <math>\blacktriangle</math> or <math>\blacktriangledown</math> key to set the work clamp height.</p> <ul style="list-style-type: none"> <li>The work clamp will be raised or lowered to the height of the setting value.</li> <li>If you press the <math>\blacktriangle</math> or <math>\blacktriangledown</math> key to change the height, the height display will flash.</li> <li>If you press the RESET key while the height display is flashing, the setting value will return to the value before the change was made.</li> <li>Press the ENTER key to accept the setting.</li> </ul>
	<p><b>When the setting value for memory switch No. 003 is "2"</b></p> 	<p>Press the <math>\Delta</math> key. The sewing machine will switch to intermediate work clamp height setting mode.</p> <ul style="list-style-type: none"> <li>" 3" will appear in the PROGRAM No. display, and the work clamp will move to the setting value that appears in the menu display. (Intermediate work clamp height setting: 1 – 15)</li> </ul> <p>Press the <math>\blacktriangle</math> or <math>\blacktriangledown</math> key to set the intermediate work clamp height.</p> <ul style="list-style-type: none"> <li>The work clamp will be raised or lowered to the height of the setting value.</li> <li>If you press the <math>\blacktriangle</math> or <math>\blacktriangledown</math> key to change the intermediate work clamp height, the height display will flash.</li> <li>If you press the RESET key while the height display is flashing, the setting value will return to the value before the change was made.</li> <li>Press the ENTER key to accept the setting.</li> </ul>
	<p><b>NOTE:</b> When setting the work clamp height and the intermediate presser foot work clamp height, check that the slider (1) is touching the work clamp lifter plate assembly (2).</p>	

3091B

## 5. USING THE OPERATION PANEL (BASIC OPERATIONS)

3



Press the  $\Delta$  key.

The sewing machine will switch to intermittent presser foot height setting mode.

- "4" will appear in the PROGRAM No. display, and the work clamp will rise to the setting value that appears in the menu display. (Intermittent presser foot height setting: 0.0 – 10.0)

Press the  $\blacktriangle$  or  $\blacktriangledown$  key to set the intermittent presser foot height.

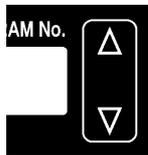
- The intermittent presser foot will rise or drop to the height of the new value that has been set.
- If you press the RESET key while the height display is flashing, the setting value will return to the value before the change was made.
- Press the ENTER key to accept the setting.

**NOTE:**

After making the setting, be sure to turn the pulley once by hand and check that the intermittent presser foot does not touch the needle bar.

3092B

<Changing modes>



Motor-driven work clamp specifications

- " 1" Threading mode ←
- ↑↓
- " 2" Work clamp height setting mode
- ↑↓
- " 3" Intermediate work clamp height setting mode (\*)
- ↑↓
- " 4" Intermittent presser foot height setting mode
- ↑

\* When the setting value for memory switch No. 003 is "2"

Pneumatic work clamp specifications

- " 1" Threading mode
- ↑↓
- " 4" Intermittent presser foot height setting mode

3093B

4 Ending setting mode

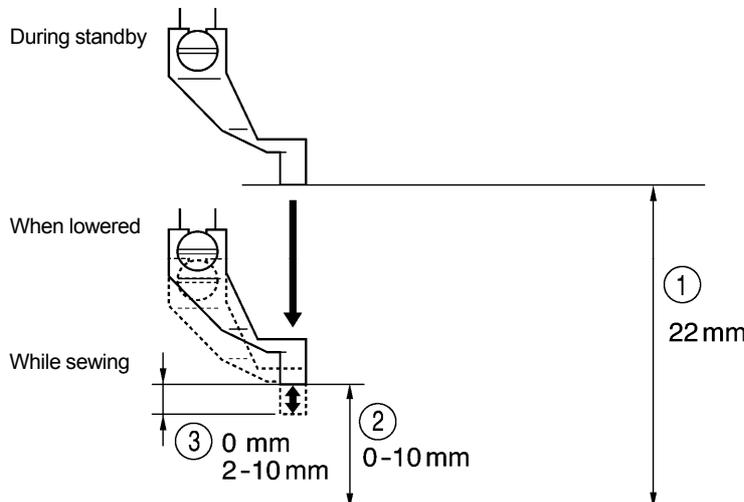


Press the THREAD/CLAMP key.

- The setting values will be memorized.
- The work clamp will return to where it was before setting mode was started.

THREAD/CLAMP indicator switches off

### Intermittent presser foot operation



① Intermittent presser foot lift amount

② Intermittent presser foot height

The settings can be made by the above operations.

However, set the intermittent presser foot height to a higher setting than the intermittent stroke.

\* If it is set smaller, the intermittent presser foot will come into contact with the needle plate.

③ Intermittent stroke

When making the adjustment, refer to "10-14. Changing the intermittent stroke" in the instruction manual CD.

5033Q

## 6. USING SD CARDS

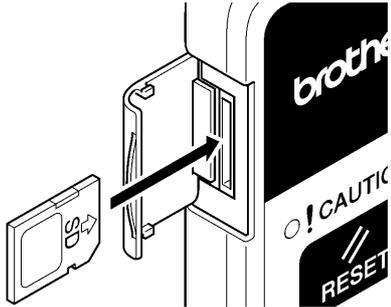
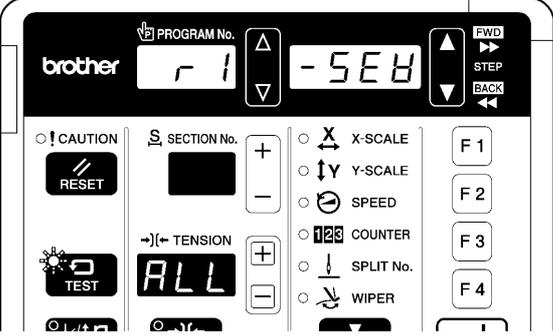
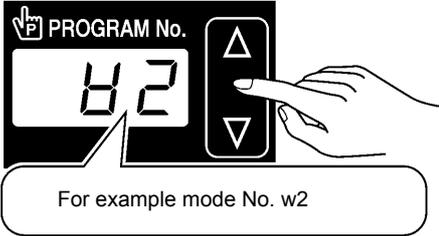
### 6-1. Notes on handling SD cards (commercially available)

- Use an SD card or a multimedia card with a capacity of 2GB or less.
- Do not disassemble or alter SD cards.
- Do not bend, drop, scratch or place heavy objects on top of the SD cards.
- Do not allow the SD cards to become wet, such as with water, oil, solvents, drinks or any other liquids.
- Do not use or store the SD cards in a locations exposed to strong static electricity or electrical interference.
- Do not use or store the SD cards in a locations exposed to vibrations or impacts, direct sunlight, extreme dust (or lint), high temperatures, high humidity, severe temperature fluctuations, or strong magnetic forces (such as from speakers).
- Do not subject the SD cards to vibration or shocks or remove them from the sewing machine while data reading or writing is in progress.
- Data on the SD cards may be lost or damaged due to some malfunction or accident. We recommend backing up important data.
- The SD cards that you purchased is already formatted. We recommend that the SD cards not be reformatted.
- The recommended SD cards are those sold by SanDisk and Panasonic. Cards from other manufacturers may use different formatting methods and may not work correctly as a result.

For additional information, refer to the instruction manual included with the SD cards that you have purchased.

- \* This product is compatible with SD cards that have been formatted using the FAT16/32 method. Cards that have been formatted using other formatting methods cannot be used.
- \* All other company and product names mentioned in this instruction manual are trademarks or registered trademarks of their respective companies. However, the explanations for markings such as TM are not clearly described within the text.

## 6-2. Preparation for reading and writing data

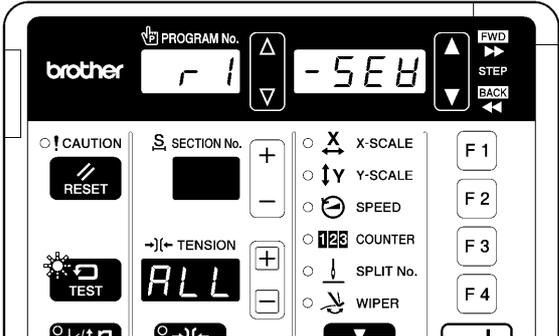
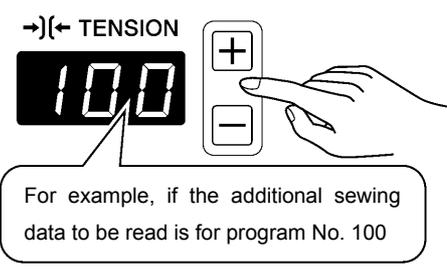
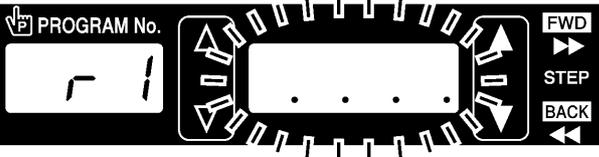
<p>1</p>		<p>Insert the SD card into the SD slot.</p> <p><b>NOTE:</b></p> <ul style="list-style-type: none"> <li>• Make sure the SD card is facing the correct way.</li> <li>• The cover should be closed at all times except when the SD card is inserted and removed, otherwise dust may cause trouble.</li> </ul>
<p>2</p>	<p>Turn on the power switch.</p>	<p>2650B</p>
<p>3</p>	<p><b>Switching to SD data read/write mode</b></p>  <p>TEST indicator flashes</p>	<p>While pressing the TEST key, press the ENTER key.</p>  <p>2652B</p> <ul style="list-style-type: none"> <li>• “sd” will appear in the PROGRAM No. display and “read” will appear in the menu display while the SD card is being read.</li> <li>• Once reading of the SD card is complete, the mode number will appear in the PROGRAM No. display and the setting for that mode number will appear in the menu display.</li> <li>• The initial mode is additional sewing data reading mode. (Refer to “Read/write mode list” below.)</li> </ul>
<p>4</p>		<p>Press the <math>\Delta</math> or <math>\nabla</math> key to select the mode.</p> <p>2653B</p>

### [Read/write mode list]

PROGRAM No. display	Menu display	Setting items
r 1	[-Sew]	Additional sewing data is read from the SD card. *
w 2	[Sew-]	Additional sewing data is written to the SD card.
r 3	[-MEM]	Memory switch settings are read from the SD card.
w 4	[MEM-]	Memory switch settings are written to the SD card.
r 5	[-PrG]	Reads sewing program data and cycle program data from the SD card.
w 6	[PrG-]	Writes sewing program data and cycle program data to the SD card.
r 7	[-ALL]	Reads all sewing machine data (sewing program data, cycle program data, memory switch settings and additional sewing data) from the SD card.
w 8	[ALL-]	Writes all sewing machine data (sewing program data, cycle program data, memory switch settings and additional sewing data) to the SD card.
w9	[LoG-]	Error log data is written to the SD card.

\* The additional sewing data that can be used with this sewing machine is data which has been created for the BAS-311H or for the BAS-300G/311G.

## 6-3. Reading additional sewing data

1	 <p style="text-align: right;">3098B</p>	<p>Select the “r 1” SD data read/write mode. (Refer to “6-2. Preparation for reading and writing data”.)</p> <ul style="list-style-type: none"> <li>The number of the additional sewing data in the SD memory card folder will appear in the tension display. (The initial value displayed is “ALL”.)</li> </ul>
2	 <p style="text-align: right;">3099B</p>	<p>Press the  or  key to select the number for the additional sewing data that you would like to be read (ALL, 100 to 999).</p> <ul style="list-style-type: none"> <li>When “ALL” is displayed, all of the additional sewing data will be read at once.</li> <li>Only the data in the SD card folder corresponding to the additional sewing data number will be displayed. (If there is not a single item of data in the folder, “---” will be displayed.)</li> </ul>
3	 <p style="text-align: center;">While reading</p> <p>→)(← TENSION </p> <p>The number for the additional sewing data number which is currently being read will appear in the tension value display.</p> <p style="text-align: right;">2657B 3100B</p>	<p>Press the ENTER key.</p>  <p style="text-align: right;">2414B</p> <ul style="list-style-type: none"> <li>The buzzer will sound and the selected additional sewing data will be read from the SD card and copied into the sewing machine's internal memory.</li> <li>If no additional sewing data exists, an error buzzer will sound.</li> </ul>
4	 <p style="text-align: right;">3101B</p>	<p>When the display returns to the status in step 1, reading of the additional sewing data is complete.</p> <ul style="list-style-type: none"> <li>If you would like to use any other read/write modes, press the  or  key to select the mode and then run it.</li> </ul>
5	<p>Ending read/write mode</p>  <p>TEST indicator switches off</p> <p style="text-align: right;">2404B</p>	<p>Press the TEST key.</p>

\* Contact the place of purchase for information on other reading and writing modes.

# 7. SEWING

## ! WARNING



Do not allow any liquids to get onto this sewing machine, otherwise fire, electric shocks or operating problems may occur.



If any liquid gets inside the sewing machine (machine head or control box), immediately turn off the power and disconnect the power plug from the electrical outlet, and then contact the place of purchase or a qualified technician.

## ! CAUTION



Turn off the power switch at the following times.

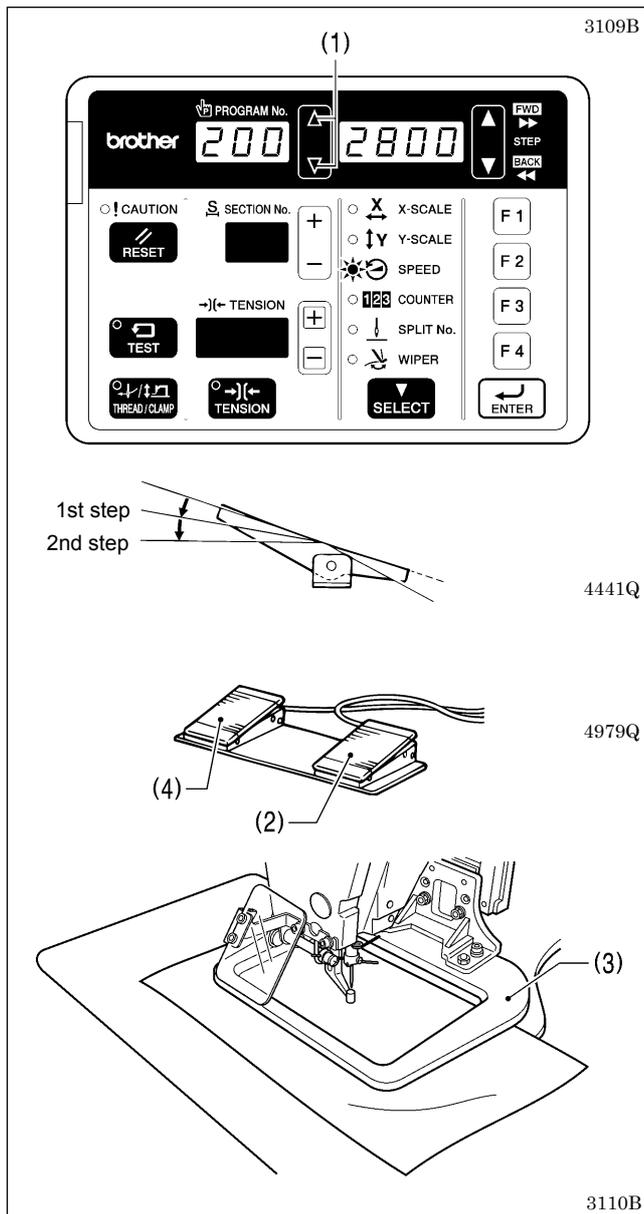
If the foot switch is depressed by mistake, the sewing machine might start operating and injury could result.

- When threading the needle
- When replacing the bobbin and needle
- When not using the machine and when leaving the machine unattended



Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.

## 7-1. Sewing



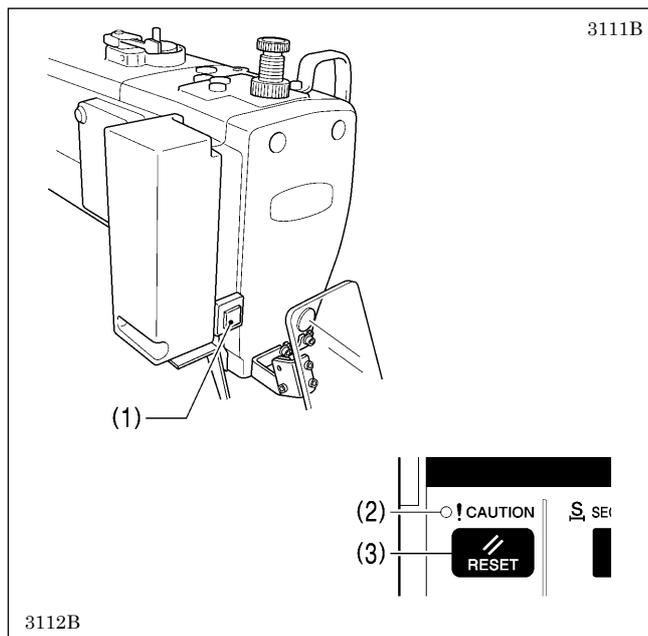
1. Turn on the power switch.
2. Press the  $\Delta$  or  $\nabla$  key (1) to select the sewing program number that you would like to use.
  - \* Refer to "6-3. Reading additional sewing data" for details on reading sewing data from a SD card.

3. Depress the foot switch to the 2nd step. (If using a two-pedal foot switch, lower the work clamp (3) before depressing the start switch (2).)
  - The feed mechanism will move to the home position.
4. Place the material under the work clamp (3).
5. Depress the foot switch to the 1st step. (If using a two-pedal foot switch, depress the work clamp switch (4).)
  - The work clamp will be lowered.
6. Depress the foot switch to the 2nd step. (If using a two-pedal foot switch, depress the start switch (2).)
  - The sewing machine will start sewing.
7. After sewing is completed, the thread trimmer will operate, and then the work clamp (3) will be raised.

Use a work clamp which will hold the material securely so that it does not slip. If the material slips when using the standard work clamp and feed plate, process them so that the material does not slip.

## 7-2. Using the STOP switch

If you press the STOP switch (1) while sewing or test feeding is in progress, the CAUTION indicator (2) will illuminate and the sewing machine will stop immediately.



### <Clearing>

1. Press the RESET key (3).
  - The thread will be trimmed, and then the CAUTION indicator (2) will switch off and the buzzer will stop sounding.
2. If you do not wish to continue sewing, press the RESET key (3) once more.
  - The program number will flash. Carry out preparation for the next sewing.

### <Continuing sewing from a stopping point>

If you have pressed the STOP switch (1) at times such as if the thread breaks while sewing or the lower thread runs out, you can resume sewing from the point where the thread ran out.

<b>1</b>		<p>Press the RESET key.</p> <ul style="list-style-type: none"> <li>• The thread will be trimmed, and then the CAUTION indicator will switch off and the buzzer will stop sounding.</li> </ul>
<b>2</b>		<p>Press the ▼ key to return to the position where sewing stopped.</p> <ul style="list-style-type: none"> <li>• When you press the ▼ key, the feed mechanism will move backward one stitch at a time, and when you press the ▲ key, it will move forward one stitch at a time. (The feed will move quicker if you keep the key pressed down.)</li> </ul>
<b>3</b>		<p>Depress the foot switch to the 2nd step. (If using a two-pedal foot switch, depress the start switch.)</p> <ul style="list-style-type: none"> <li>• The sewing machine will start operating and sewing will start.</li> </ul>

# Document CD



For cleaning, standard adjustments and more details, please refer to the instruction manual contained in the Document CD.

3168M

## Contents of the Document CD

The following documents are available on the CD.

- Basic Operation Manual
- Instruction Manual
- Parts Book
- Work clamp processing diagram (motor-driven work clamp specifications)
- Work clamp processing diagram (pneumatic work clamp specifications)
- Feed plate processing diagram

## Recommended system configuration for using the Document CD

OS:	Windows® XP Service Pack 2, Windows Vista®, Windows® 7
Browser version:	Microsoft® Internet Explorer 6 Service Pack 1 or higher
Screen resolution:	1024 x 768 pixels or more
Plug in (required to access):	Adobe Reader 8.0 or higher

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Windows® and Microsoft® Internet Explorer are either registered trademarks of Microsoft Corporation in the United States and/ or other countries.

\* Please note that the contents of this manual may differ slightly from the actual product purchased as a result of product improvements.

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