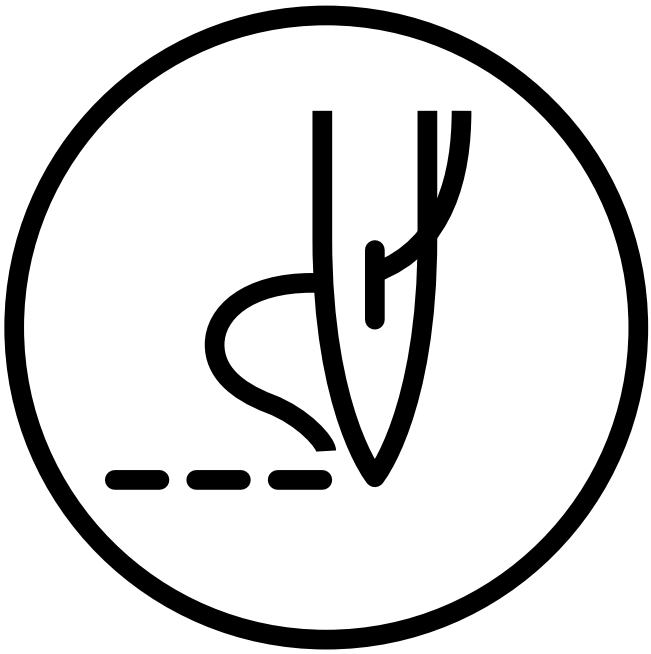
BAS-6150

INSTRUCTION MANUAL

Please read this manual before using the machine.
Please keep this manual within easy reach for quick reference.

AUTOMATIC LOCKSTITCH POCKET WELT SEWER



brother®

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

The nature of industrial sewing machine requires operators to be always exposed to the hazard to themselves, because they have to work very close to moving parts such as the needle and thread take-up lever. Prior to using, be sure to be well informed of instructions for safe and correct operation of the machine by experts and/or instructors.

SAFETY INSTRUCTIONS

1 Safety indications and their meanings

This instruction manual and the indications & symbols labeled on the machine are provided to ensure safe operation of this machine and to prevent hazards from an operator and/or other people. The meanings of these indications and symbols are given below.

Indications

⚠ **DANGER**	**The instructions following this term indicate situations where negligence of the instructions will almost certainly result in death or severe injury.**
⚠ **CAUTION**	**The instructions following this term indicate situations where negligence of the instructions to operation could cause hazards to the material and body.**

Symbols

 ..... **This symbol (△) indicates what an operator must be careful of.**
The picture inside the triangle indicates the nature of the caution that must be observed. (For example, the symbol on the left means "beware of injury".)

 .....**This symbol (⃠) indicates what you must not do.**

 .....**This symbol (●) indicates what you must do.**
The picture inside the circle indicates what must be done. (For example, the symbol on the left means "you must set the ground connection".)

⚠ DANGER

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

⚠ CAUTION

Requirements for environment

- Use the machine in an area free of the impact from sources of strong electrical noise such as high-frequency welders. Sources of strong electrical noise may cause problems with correct operation of the machine.
- Any fluctuations in the power supply voltage should be within ±10% of the rated voltage for the machine. Voltage fluctuations greater than this range may cause problems with correct operation of the machine.
- The power supply capacity should be greater than the requirements for electrical consumption of the machine. Insufficient power supply capacity may cause problems with correct operation of the machine.
- The air supply capacity should be greater than the requirements for air consumption of the machine. Insufficient air supply may cause problems with correct operation of the machine.
- The ambient temperature during use should be within the range from 5°C to 35°C Temperature lower or higher than this range may cause problems with correct operation of the machine.
- The relative humidity in operation should be within the range from 45% to 85% and no dew formation should occur in any device. Excessive dry or humid environment and dew formation may cause problems with correct operation of the machine.
- Avoid exposure to direct sunlight in operation. Exposure to direct sunlight may cause problems with correct operation of the machine.
- When an electrical storm occurs, turn off the power and plug off the power cord. Lightening may cause problems with correct operation of the machine.
- Do not use the machine outdoors.

Installation

- Machine installation should be carried out only by a qualified technician.
- Contact your Brother dealer or a qualified electrician for any electrical wiring.
- The machine weighs 225kg. The installation should be carried out by two persons or more.
- Do not plug in the power cord before the installation is completed. Unintended press on the foot switch may cause injury.
- Be sure to connect ground. Insecure grounding may cause problems with correct operation and a serious electrical shock.
- Be sure to wear protective goggles and gloves when handling lubricating oil or grease so that no oil or grease gets into your eyes or onto your skin. Do not eat or drink lubrication oil or grease in order not to have vomiting or diarrhea. Keep oil and grease out of the reach of children.
- Install the machine well apart from sources of strong electrical noise such as high-frequency welding equipment. Otherwise, incorrect machine operation may result.
- Place the leveling sheet on the sound floor and secure the machine with casters so that it will not move.

⚠ CAUTION

Sewing

The machine should be operated only by operators who have been trained for safety operation.

Do not let children access to the machine.

The machine should not be used for any other application than sewing.

Be sure to wear protective goggles when operating the machine. Otherwise, a broken needle may get in your eyes and cause injury.

Turn off the power on the following occasions. Otherwise, unintended press on the foot switch may cause injury.

- When replacing a needle
- When not operating the machine and leaving it unattended

Do not operate the machine where an aerosol product (air spray) is used or where oxygen is being administered.

Attach all safety devices before using the machine. Operation without safety device may cause injury.

Do not touch any of the moving parts nor press any objects against the machine in operation. Any touch or press may cause damage to the machine or injury to human body.

Do not put objects or a screwdriver in the exhaustion outlet or inside the machine. Accidental touch on an area with high voltage may cause electrical shock.

Do not damage, process, heat, and apply excessive force to the power cord or other wiring cords. Breakage of the power cord and other wiring cords may cause fire or electric shock.

Turn off the power switch when the control unit is subject to water or chemicals. Continuous operation of the control unit subjected to water or chemicals may cause fire or electrical shock.

Turn off the power switch when incorrect operation and abnormal sound or smell are noticed. Contact your Brother dealer or a qualified technician.

Contact your Brother dealer or a qualified technician when the machine is in trouble.

Cleaning

Turn off the power switch before cleaning. Unintended press on the foot switch may cause injury.
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.

Be sure to wear protective goggles and gloves when handling lubricating oil or grease so that no oil or grease gets into your eyes or onto your skin. Do not eat or drink lubrication oil or grease in order not to have vomiting or diarrhea. Keep oil and grease out of the reach of children.

Maintenance and inspection

Be sure to turn off the power switch when the machine is raised. Unintended press on the foot switch may cause injury.

Turn off the power switch and pull off the plug by holding not of the cord but of the plug for the following occasions. Otherwise, unintended press on the foot switch may cause injury.
- **maintenance, adjustment, and repairment**
- **replacement of consumable parts such as the rotary hook, knife, lamp, etc**

When adjustment has to be done with the power switch and air supply on, pay enough attention to safety. Detach the air tube of air source and set the pointer of the pressure gauge to [0] for inspection, adjustment, and repair of air using devices.

If safety devices are once detached, re-attach them to the original position. Make a check to confirm that they are in proper function.

Loss and others due to remodeling the machine are excluded from the scope of warranty.

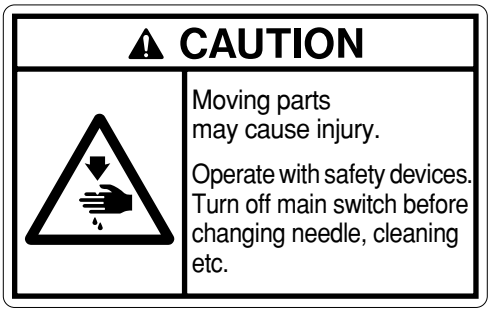
Do not put scissors, needles, threads, tools on the table when the machine is set upright. Falling down of them may cause damage to the machine or injury to human body.

Ask your Brother dealer or a qualified technician for electrical maintenance and inspection.

3 Warning labels

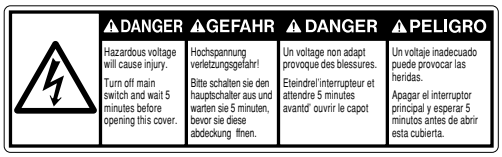
*** The following labels appear on the machine.**
Please follow instruction described on the labels when using the machine. If labels have been removed or become illegible, contact your dealer.

1

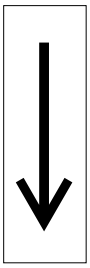


Safety devices: cover, take-up lever cover, guard bar

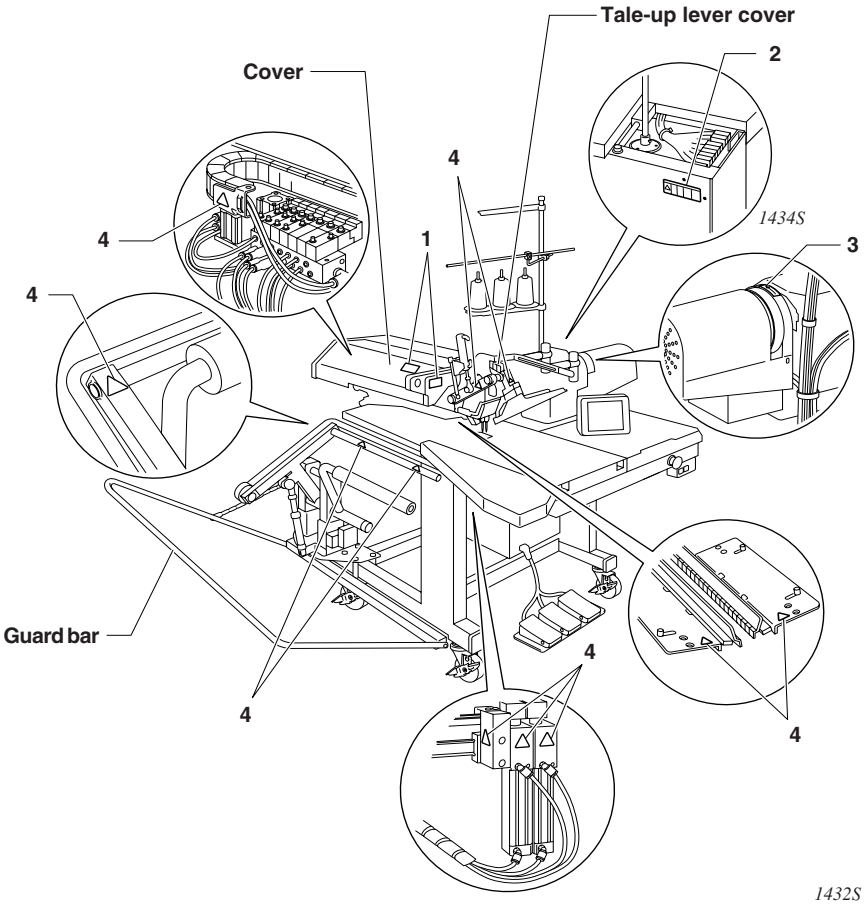
2



3 **Direction of operation**



4 **Moving parts may cause injury.**



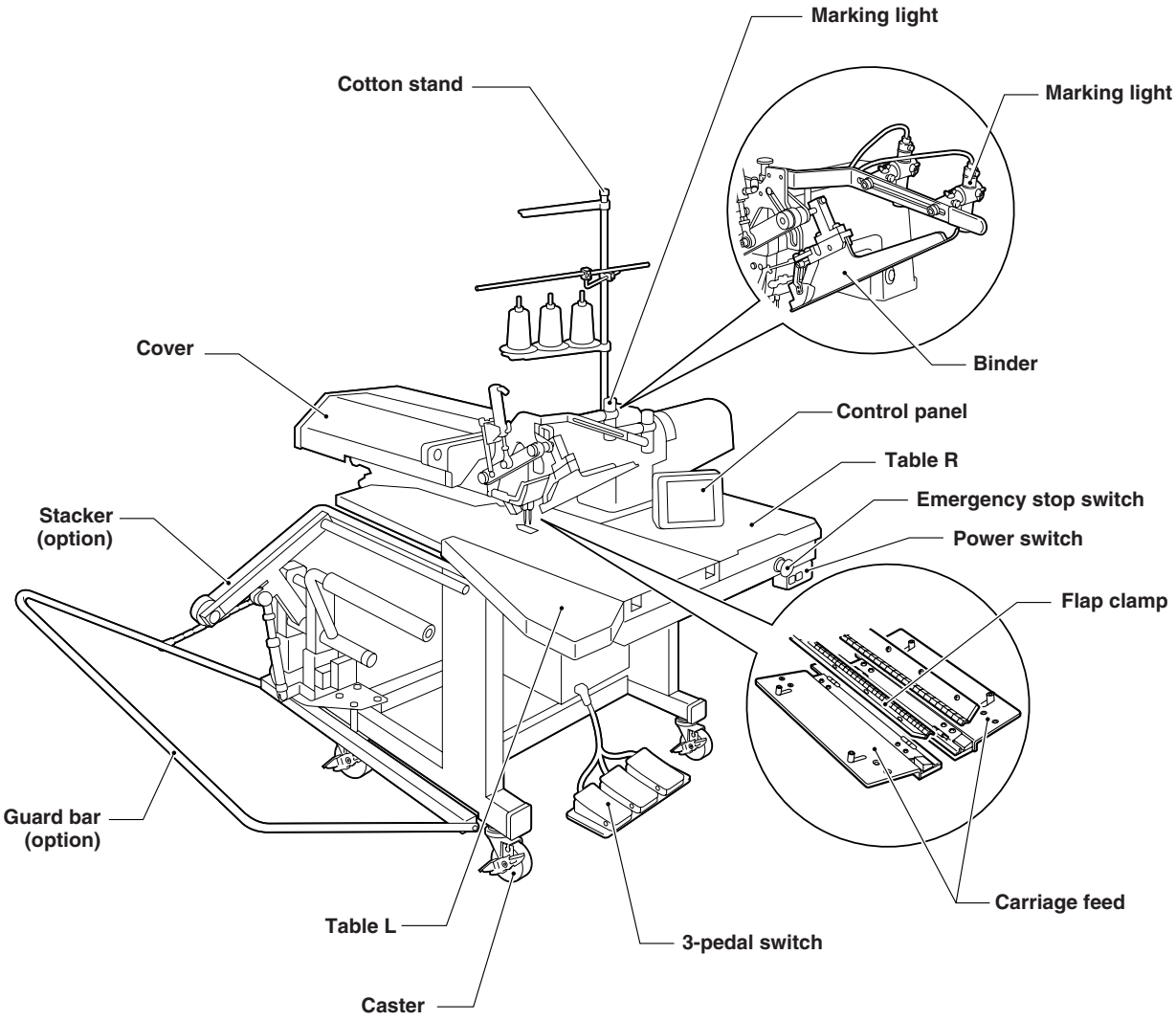
Contents

Chapter 1 Machine Preparation

1. Specifications

Model			151-6150
Head			118-U73 (the machine with double needles and center knife)
Sewing speed			Maximum 3000rpm (3000, 2800, 2500, 2200, 2000, 1800, 1500, 1200, 1000, 800, 500, 200 rpm)
Welting			Parallel double welting, parallel single welting (with flap, without flap)
Stitch length	Standard pitch		Standard 2.4 mm (1.8 - 3.4mm)
	Back tack pitch	Condense	Standard 1mm (0.4 - 2.0mm)
		V.N. back tack	Standard 1mm (0.8 - 3.4mm)
Seam length		Minimum	30mm (center knife ON), 15mm (center knife OFF)
		Maximum	220mm (standard), 250mm (option)
Program number			10 (enable to copy)
Cycle program number			5 (4 prgrams/1 cycle, stacker movable in the middle)
Lower thread counter			0 - 999 (disable when remaining amount detection device in use)
Sensor check function			Display of conditions of sensors, switches, etc
Needle gauge			8, 10, 12, 14, 16, 18, 20 mm (Standard: 12mm)
Needle to be used			Mtx190#16 (#14 - #18)
Rotary hook			Horizontal double hook
Power			3 phase 200V,220V,380V,400V,415V, 600VA
Air pressure/air consumption			0.49Mpa, 10l /min
Weight			225kg
Dimensions			W1,010mm x D1,350mm x H1,200mm

2. Name of parts



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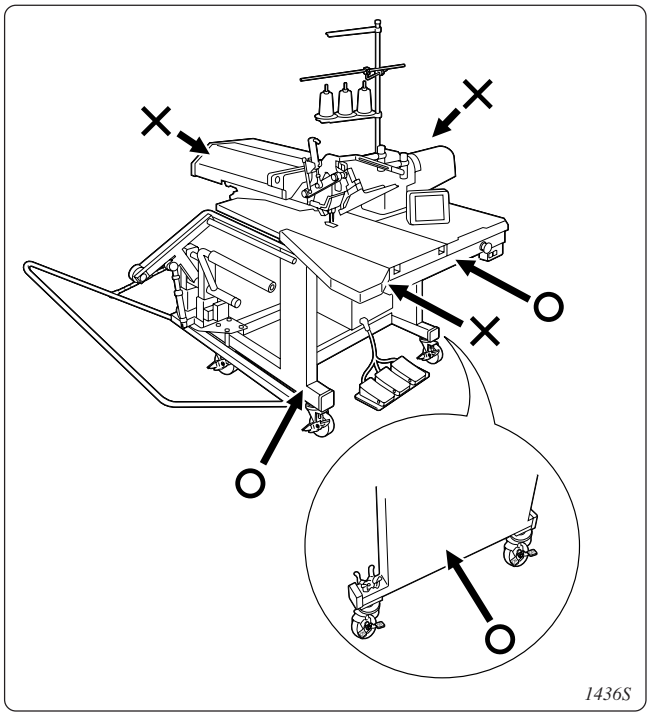
3. Installation

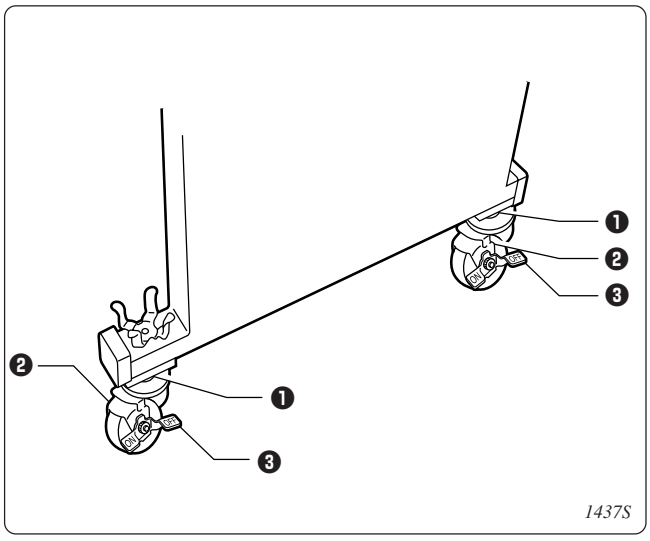
3-1. How to carry the machine



Lift up the main body (the frame) to carry the machine.

(Note) Be sure not to hold and lift the table, equipment, cover, sub-frame, etc. to lift the power table.

3-2. How to install the machine



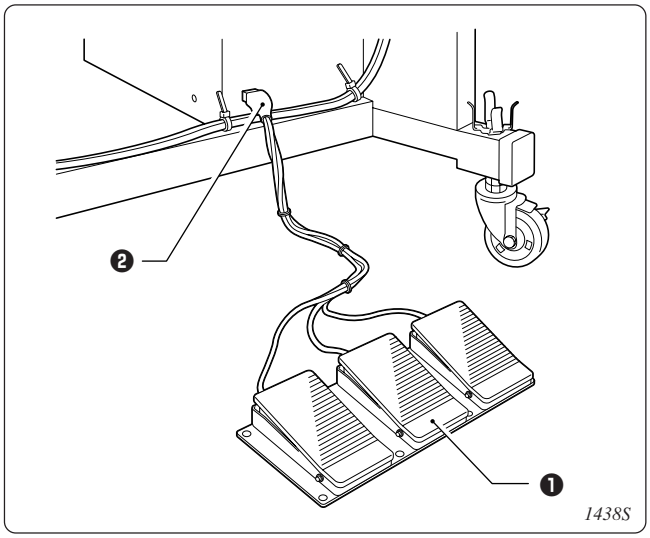
1. **Loosen nut ❶ and adjust the height of caster ❷ so that the power table be parallel with the surface of the floor.**

2. **Descend lever ❸ in order not to move the main body and fix caster ❷.**

   Up lever ❸, then the main body can be movable.

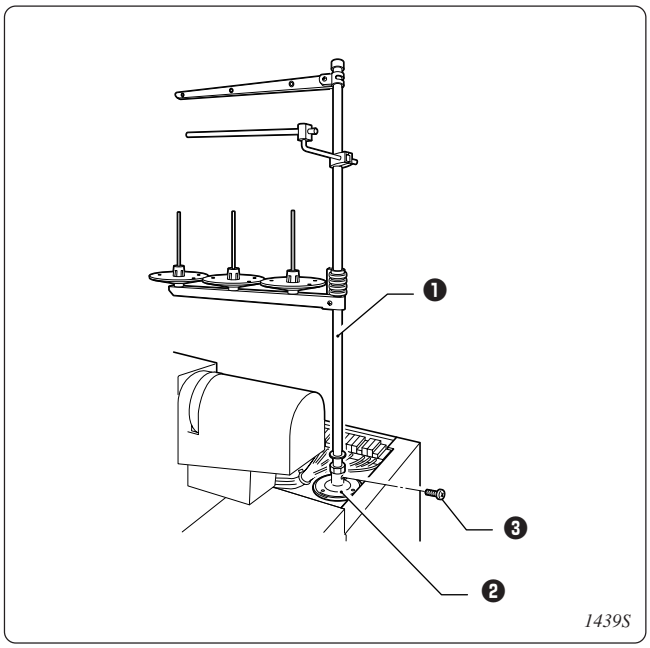
   (Note) If the floor is not solid enough, the machine may become unstable. Lay something solid like concrete plates and precede the installation steps.

3-3. Installation of the 3-pedal foot switch



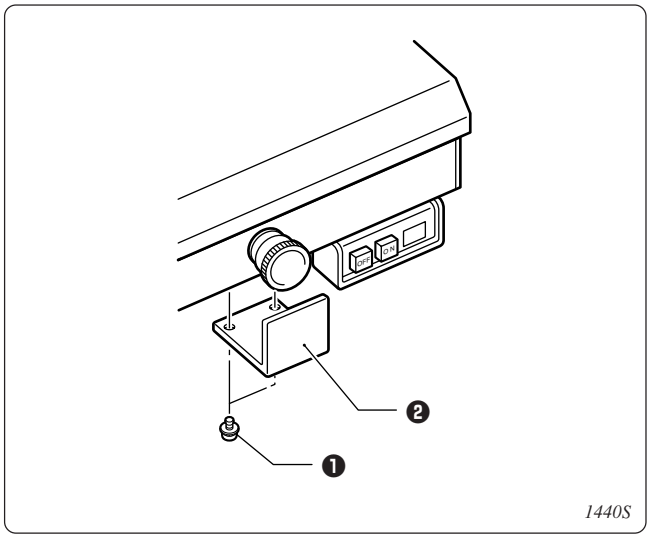
Plug connector ❷ of 3-pedal foot switch ❶ into the connector on the front side.

3-4. Attachment of the cotton stand



Put cotton stand ❶ into bracket ❷ and fix with screw ❸.

3-5. Detachment of the emergency stop switch cover

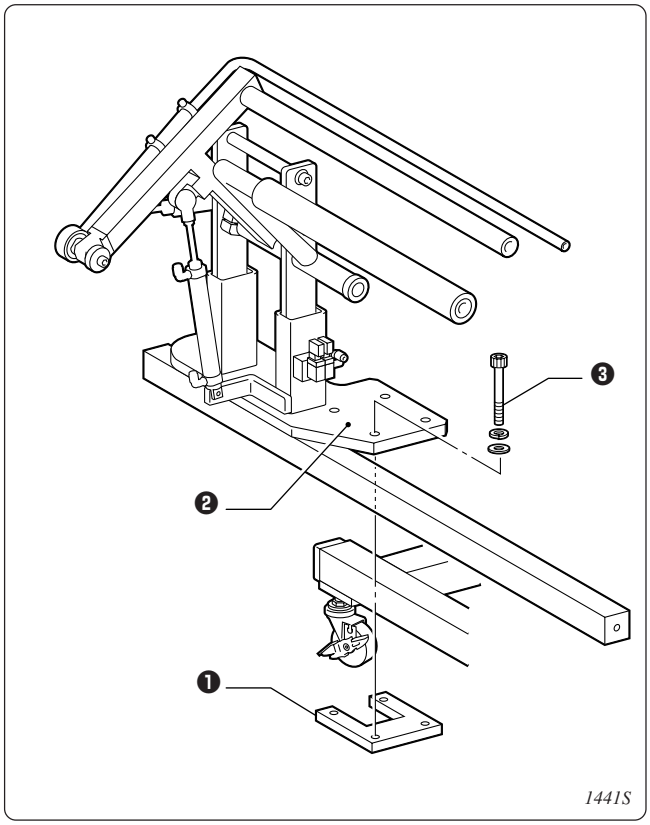


Unscrew two tightening screws ❶ and detach emergency stop switch cover ❷.

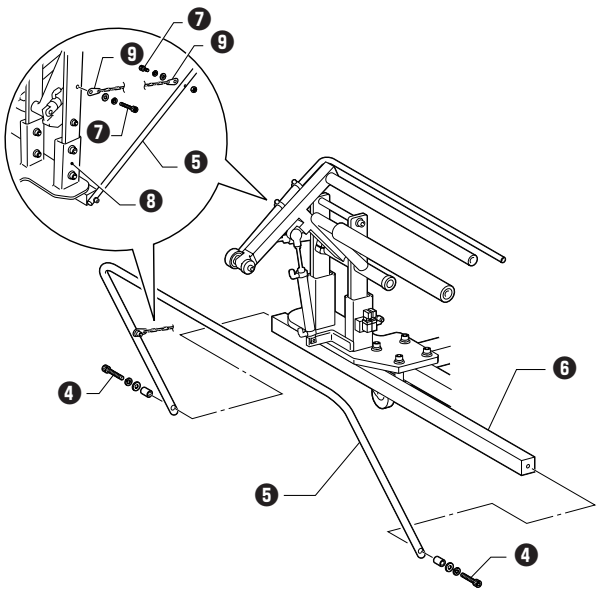
Attach the emergency stop switch cover to protect the emergency stop switch. Keep the emergency stop switch cover with good care.

3-6. Attachment of the stacker (option)

■ How to attach



1. **Set tap plate ❶ at the bottom and the stacker base ❷ at the top of the leg. Fix them with four bolts ❸ respectively.**



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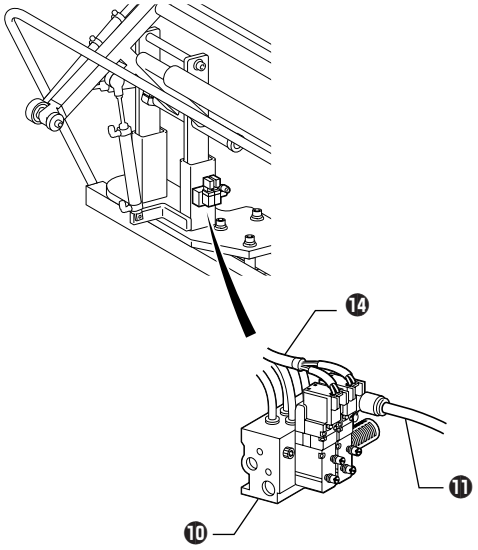
2. **Attach guard ❺ to guard base ❻ with bolts ❹ at right and left ends.**

3. **Attach chain ❾ to stacker ❽ and guard ❺ with bolt ❼.**



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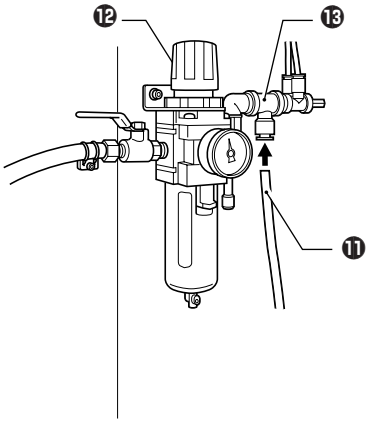
4. **Connect air hose ⓫ from manifold ⓾ on the stacker to plumber module ⓭ of regulator ⓬.**



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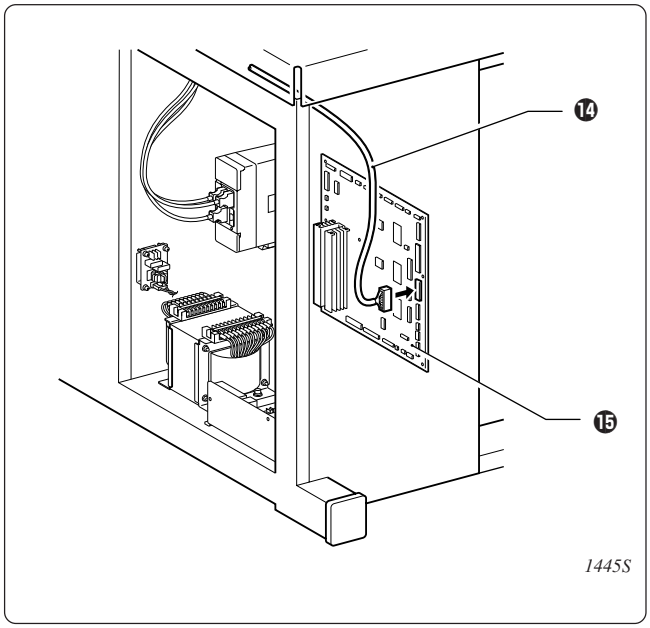


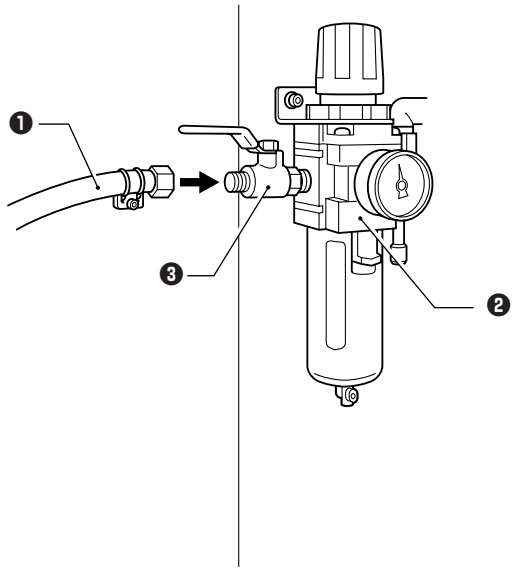
5. Connect bar stacker harness ⓮ to P20 on main circuit board ⓯ in the control box.

3-7. Air pressure setting

CAUTION

When adjustment has to be done with the power switch and air pressure on, pay enough attention to safety.

Detach the air tube of air source and set the pointer of the pressure gauge to [0] for inspection, adjustment, and repair of devices using air.



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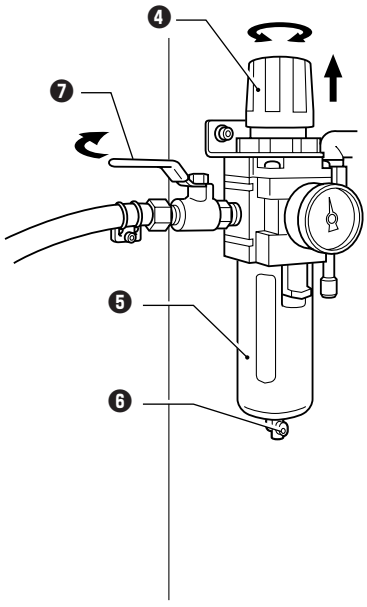

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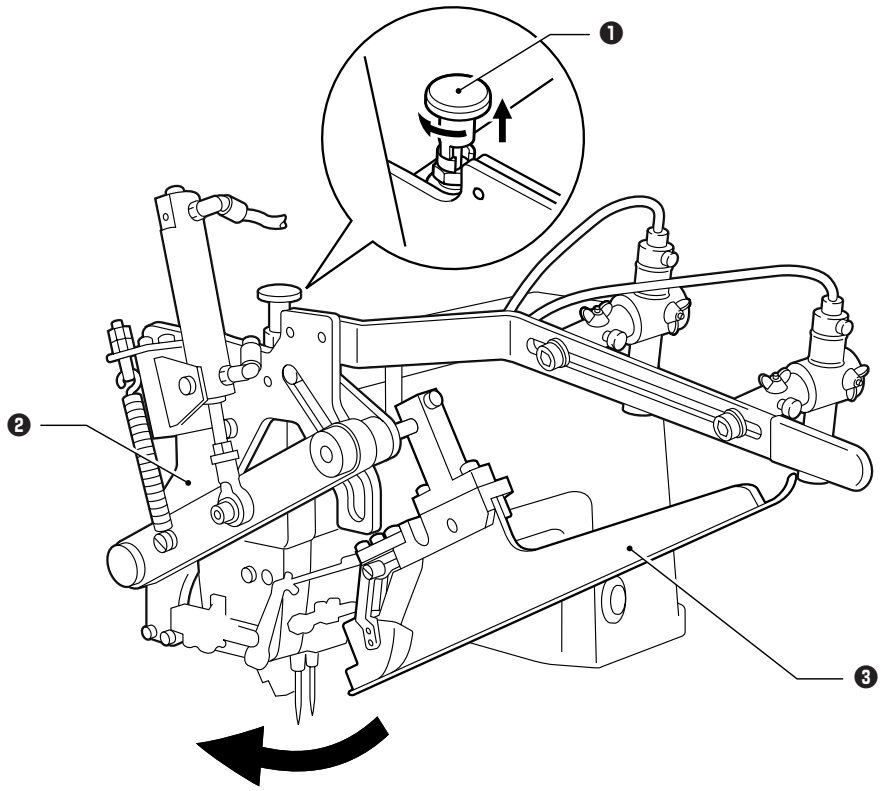
1. **Joint rubber hose ❶ to union ❸ of air unit ❷.**

2. **Turn handle ❹ while pulling up it to set air pressure to 0.49 Mpa.**

3. **When water is noticed in bottle ❺, drain water by pressing the button of the drain cock ❻.**

   (Note) When bulb ❼ is opened, pay due attention to movement of the stacker bar.

3-8. How to open the main plate



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Pull up plunger ❶ and lock it, and then open main plate ❷.

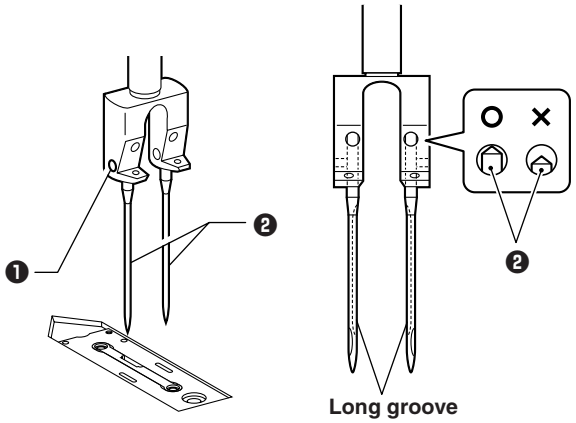
(Note) Open or close main plate ❷ with binder ❸ held up by hand not to touch the needle when the binder ❸ is in down position. (Binder ❸ goes down when the power or air supply is OFF.)

4. Preparation for sewing

4-1. How to mount the needle

CAUTION

Turn off the power switch when needles are mounted. Otherwise, unintended press on the foot switch may cause injury.



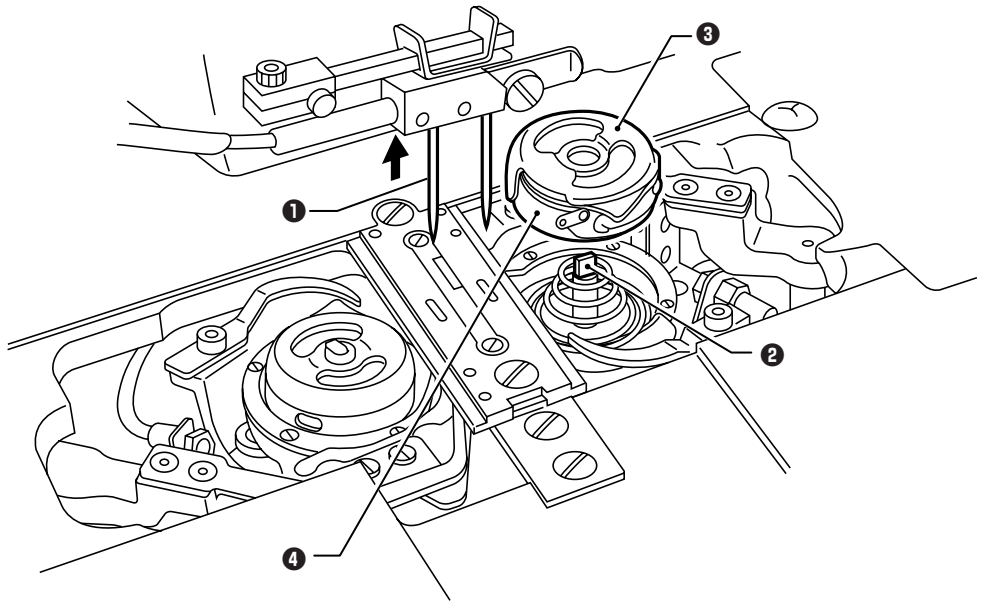
1. **Rotate the pulley to lift the needle to the highest point.**
2. **Pull up the plunger and lock it, and then open the main plate. (Refer to "3-8. How to open the main plate")**
3. **Loosen set screw ❶.**
4. **Thrust needles ❷ up straight with their long grooves facing to the inside and fasten up set screw ❶.**

4-2. How to dismount the bobbin or bobbin case

CAUTION

Turn off the power switch when the bobbin or bobbin case is dismounted. Otherwise, unintended press on the foot switch may cause injury.

Proceed to following steps at the occurrence of the lower thread breakage after an error is reset by pressing the reset switch. After finishing with the steps, proceed to the next steps in accordance with "4-3. How to wind the lower thread" and "4-4. How to thread the lower thread".



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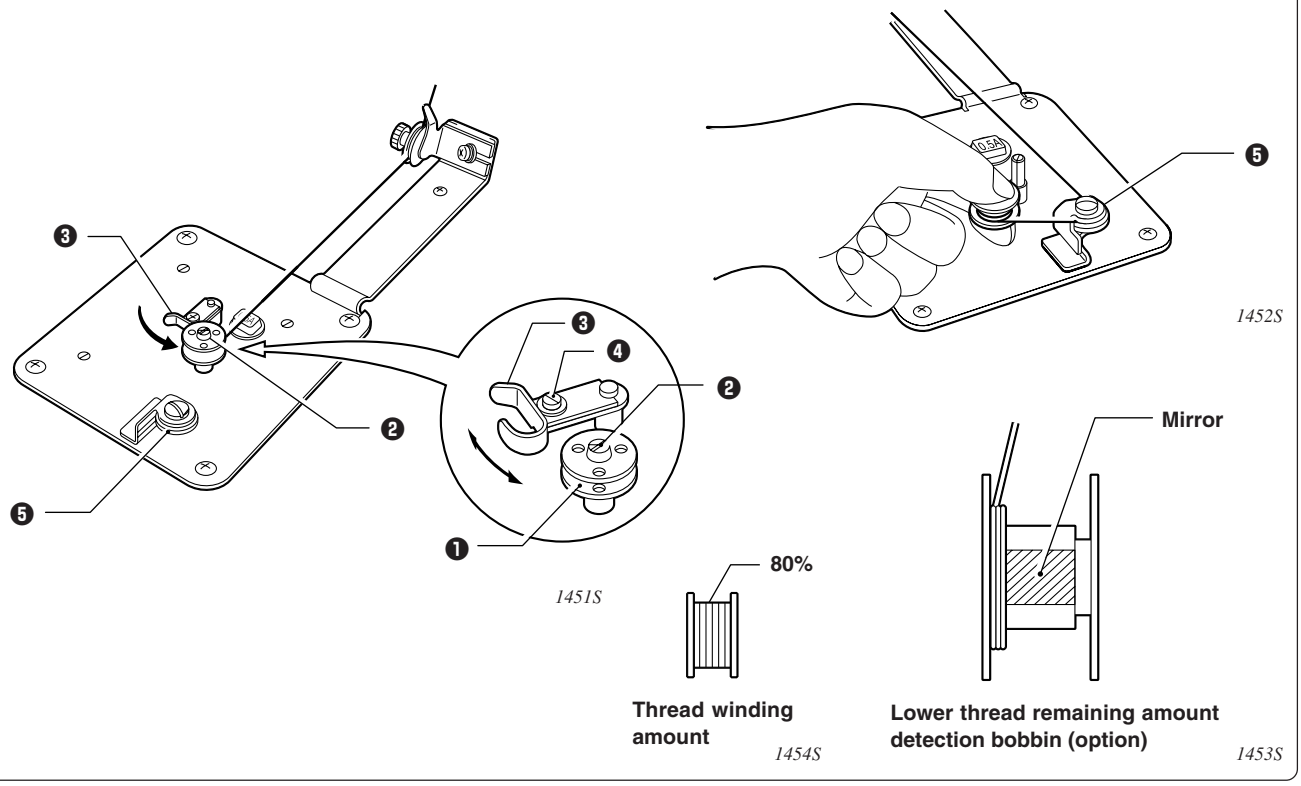
1. **Rotate the pulley to lift needle ❶ to the highest point.**
2. **Open the slide plate.**
3. **Dismount bobbin case ❸ and bobbin ❹ after pulling up rotary hook hold ❷.**

4-3. How to wind the lower thread

CAUTION

Be sure not to touch moving parts nor push them with objects while winding threads.
Otherwise, any touch or push may cause damage to the machine or injury to human body.



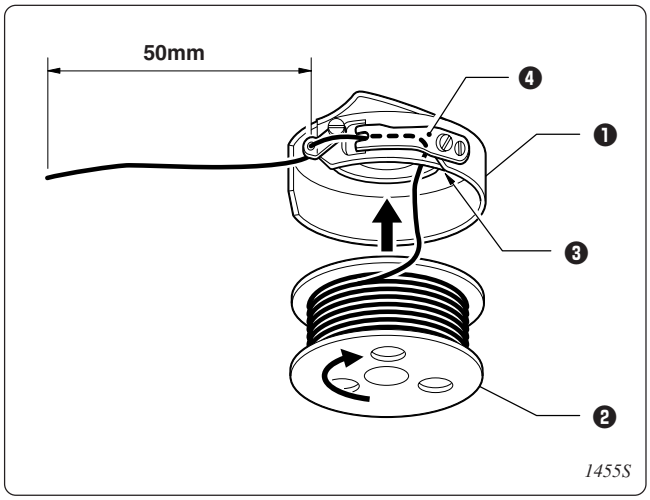
1. **Turn on the power switch.**
2. **Thrust empty bobbin ❶ into shaft ❷.**
3. **Thread the end of thread through the cotton stand as illustrated and wind up the end of the thread onto bobbin ❶ several times.**
4. **Move lever ❸ to the arrow pointed direction.**
   The automatic switch sets shaft ❷ to rotate and start winding threads.
5. **When thread rolling is over, lever ❸ returns to original position and thread roll axis ❷ stops.**
6. **Loosen set screw ❹ and move lever ❸ to right and left for adjustment of thread winding amount of bobbin ❶.**
7. **Detach bobbin ❶ from shaft ❷. Cut the thread while winding the middle part of thread onto thread nipper ❺.**
   At the next winding of the thread, pick up the end of the thread from thread nipper ❺ and roll it onto bobbin ❶.

(Note) • The winding amount of thread should be less than 80 % of full roll.
• If threads are wound onto the lower thread remaining amount detection bobbin (option), start winding from the end of bobbin because a mirror is placed on the center of the bobbin.

4-4. How to thread the lower thread

CAUTION

Turn off the power switch when the bobbin is to be attached. Otherwise, unintended press on the foot switch may cause injury.



1. **Cover bobbin ❷ with bobbin case ❶.**
2. **Let the thread through slit ❸ and go through under timing spring ❹.**
3. **Pull out the thread by approx. 50 mm from the thread hole at the end of spring ❹.**
4. **Put bobbin case ❶ and bobbin ❷ into the rotary hook.**

4-5. How to thread the upper thread

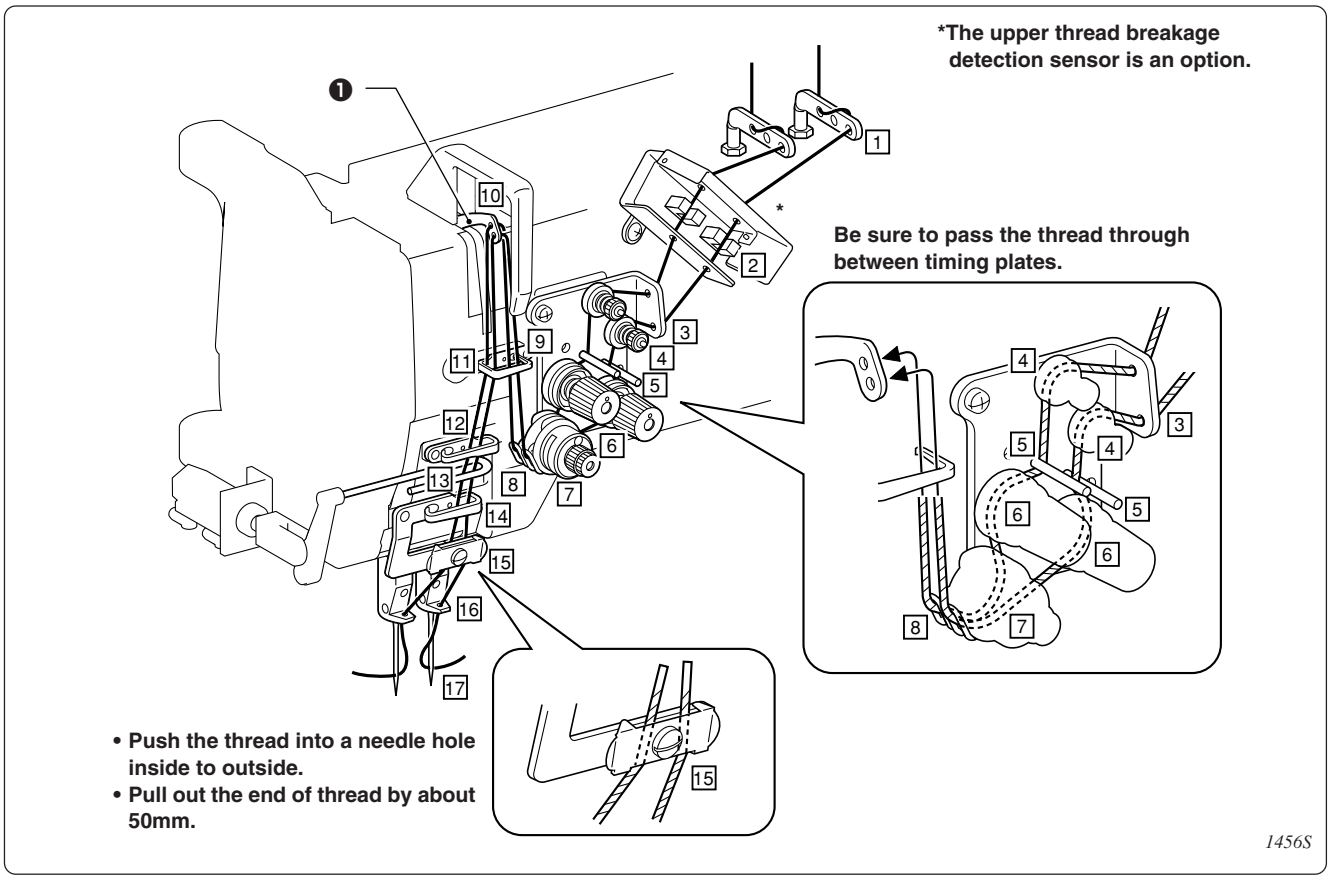
CAUTION

Turn off the power switch for threading the upper thread. Otherwise, unintended press on the foot switch may cause injury.

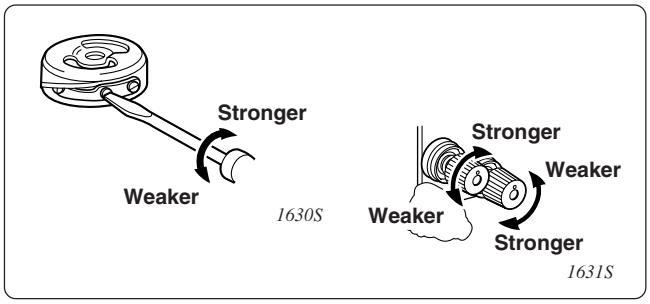
Proceed to the following steps at the occurrence of upper thread breakage after the error is reset by pressing the reset switch.

1. **Lift up the plunger and lock it, and then open the main plate.**
2. **Rotate the pulley to set the thread take-up ❶ at the highest position and start threading from the tread take-up on the left.**

   Threading at the highest position is for easy threading and good prevention of the thread come-off at sewing start up.

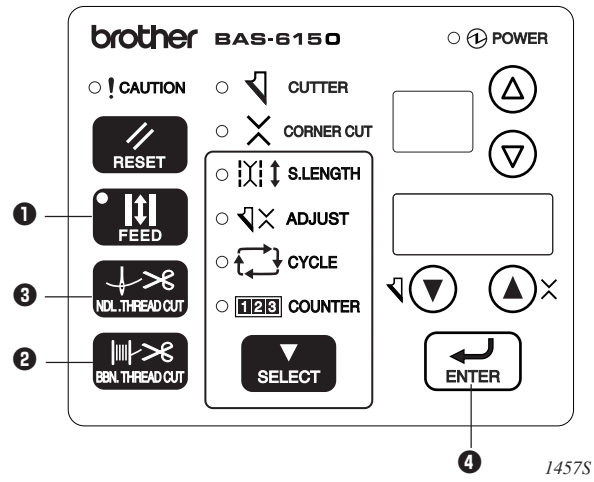


4-6. Adjusting the thread tension



After the lower thread tension has been adjusted, adjust the upper thread tension.

4-7. Retention of upper and lower threads



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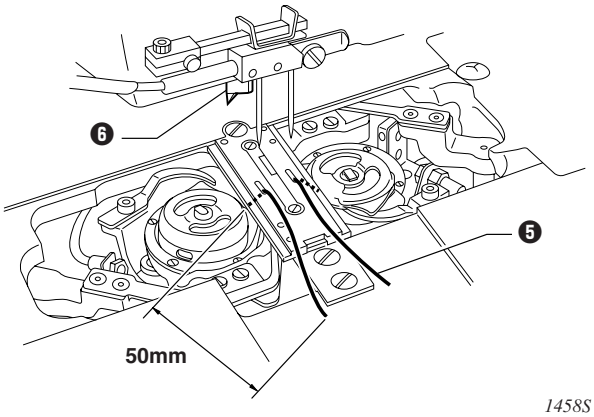

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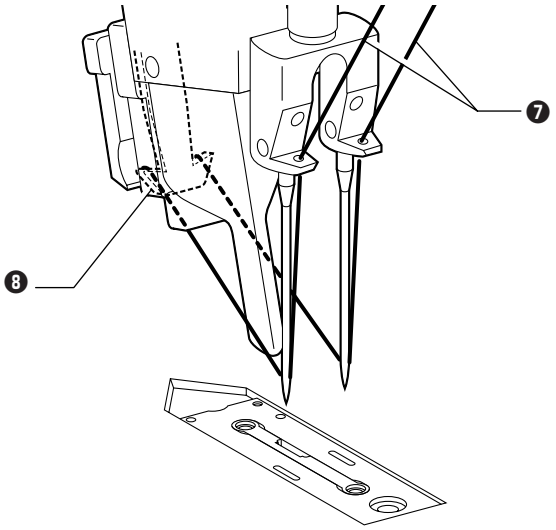

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1. **Press the "FEED" key ❶ to move the carriage feed to the feed position.**

2. **Open the slide plate.**

3. **Cover the bobbin with the bobbin case. Place them into the rotary hook, leaving the end of the thread ❺ out about 50 mm and pull down the nipper.**
   Pull up each lower thread through a thread hole and press "BBN. THREAD CUT" key ❷ to retain the threads.
   (Note) Pay enough attention not to touch center knife ❻.

4. **Close the slide plate.**

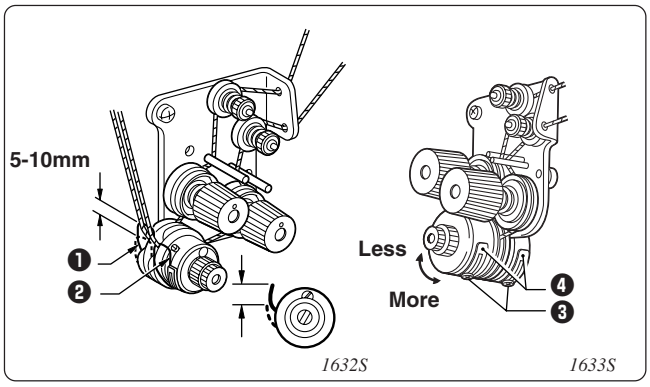
5. **By pressing down the "NDL. THREAD CUT" key ❸, place two upper threads ❼ onto upper thread trimmer knife ❽.**

6. **By releasing the "NDL. THREAD CUT" key ❸, revert the upper thread trimmer knife.**

7. **Press the "FEED" key ❶ to move the carriage feed to the standby position.**
   * When the setting for the memory switch 3 (environment parameter No.63) is set to ON, press the "ENTER" key ❹ with the "FEED" key ❶ being pressed.

4-8. Adjusting the thread tension spring

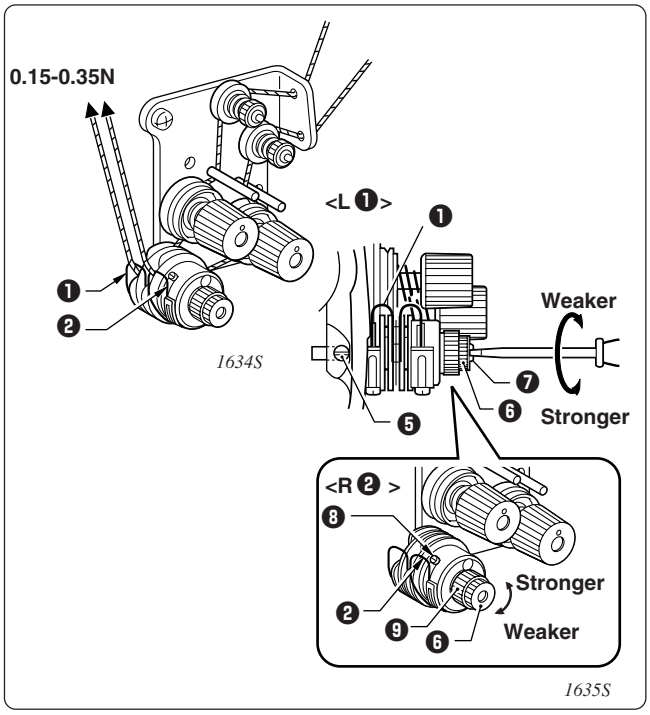
4-8-1. Operating range of thread take-up spring



The standard operating range for thread take-up spring L ❶ and thread take-up spring R ❷ is 5-10mm for both springs.

1. **Loosen the left and right screws ❸, and then turn the left and right thread take-up spring stoppers ❹ to adjust the operating range.**
2. **Tighten the screws ❸.**

4-8-2. Thread take-up spring tension



The standard tension for thread take-up spring L ❶ and thread take-up spring R ❷ is 0.15-0.35N for both springs.

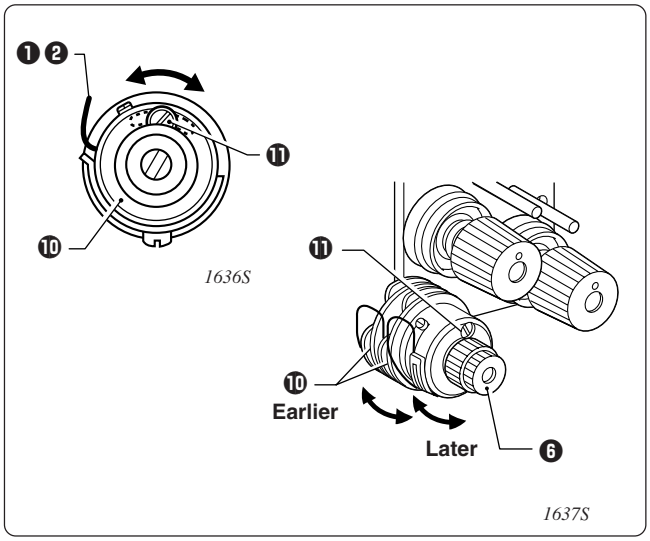
<Thread take-up spring L ❶>

1. **Open the face plate.**
2. **Loosen the screw ❺.**
3. **Loosen the knob ❻, and then turn the thread tension stud ❼ to adjust the tension.**
4. **Tighten the screw ❺, and then tighten the knob ❻.**

<Thread take-up spring R ❷>

1. **Loosen the set screw ❽.**
2. **Loosen the knob ❻, and then turn the adjustment knob ❾ to adjust the tension.**
3. **Tighten the screw ❽, and then tighten the knob ❻.**

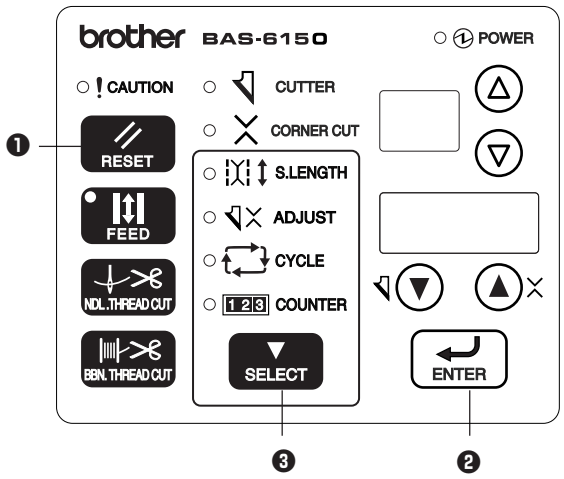
4-8-3. Thread take-up spring operation timing



The standard operation timing for thread take-up spring L ❶ and thread take-up spring R ❷ is the middle position within the operating range of the thread take-up spring guide ⓫.

1. **Loosen the set screw ⓫.**
2. **Loosen the knob ❻, and then turn the left and right thread take-up spring guides ⓫ to adjust the tension.**
3. **Tighten the screw ⓫, and then tighten the knob ❻.**

4-9. Initialization at the time of power ON



Initialization of the unit memory can be performed by pressing a certain key when the power supply switch is turned ON.

4-9-1. Initialization of programs

Initialization is performed for memories listed below:

- **All programs**
- **All cycle programs**
- **Production counter**
- **Lower thread counter**

1. **While holding down "RESET" key ❶ and "ENTER" key ❷, turn on the power switch. The start switch is not pressed.**

   * Hold the DIP switch B-7 and B-8 to be ON to initialize the [Environment parameter]. (Refer to Chapter 8 Dip switch.)

2. **The gauge (needle gauge) setting screen appears. Select the gauge size (needle gauge) by pressing ▲▼ key.**

3. **Initialization is performed as for the memory by pressing "ENTER" key ❷.**

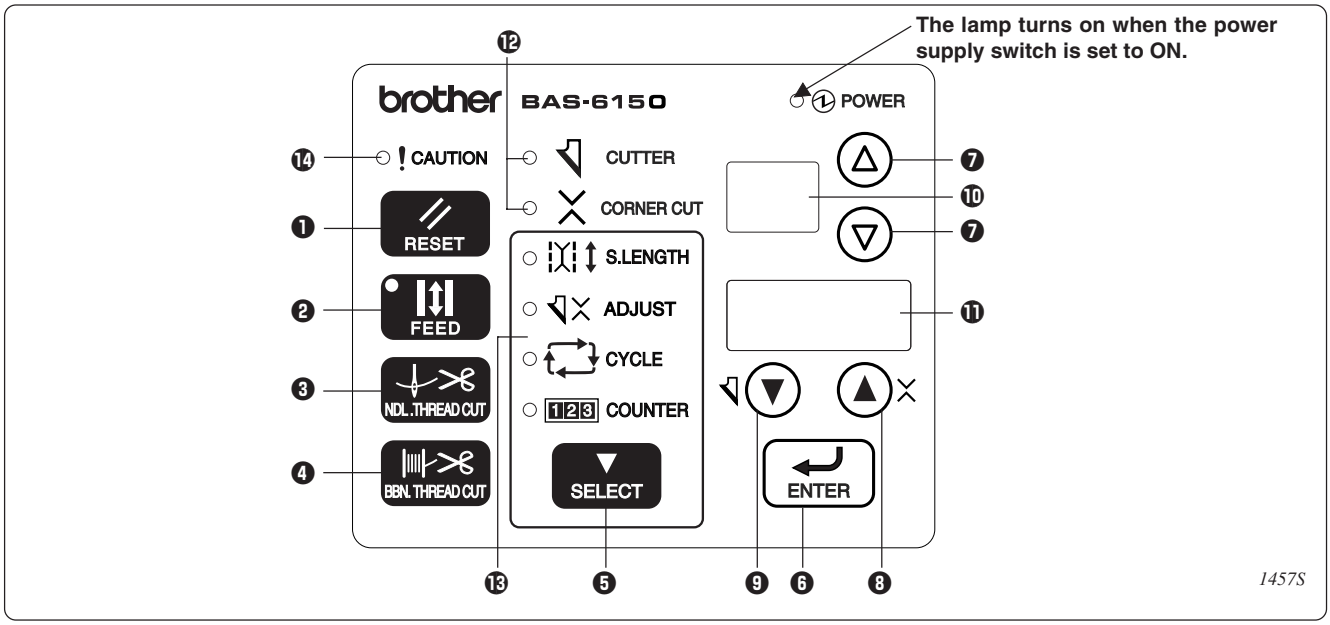
4-9-2. Initialization of the counter

When you turn on the power switch while holding down "RESET" key ❶ and "SELECT" key ❸, both counters for the lower thread and the production will be reset to 0.

Chapter 2 Sewing flow

1. Outline of operation

1-1. Description of the panel



❶ **"RESET"**
Press the "RESET" key when an error is displayed or the machine stops due to a trouble. The error is released when the cause for the trouble is solved. If pressed while the lower thread counter ([COUNTER] LED is ON) is displayed, the production counter appears.

❷ **"FEED"**
Press the "FEED" key to move the carriage feed forward and backward. If pressed when the carriage feed is placed at other positions than the feed position, the carriage feed moves to the feed position. If pressed when the carriage feed is placed at the feed position, it moves to the standby position. When the carriage feed is placed at the feed position, LED blinks.
*** When the setting for the memory switch 3 (environment parameter No.63) is set to ON, press the "ENTER" key ❻ with the "FEED" key ❷ being pressed.**

❸ **"NDL THREAD CUT" (upper thread cut)**
The upper knife comes out only while the key is pressed and trims the upper thread as it retracts when the key is released when the carriage feed is at the feed position.

❹ **"BBN.THREAD CUT" (lower(bobbin) thread cut)**
The lower knife comes out only while the key is pressed and trims the lower thread as it retracts when the key is released when the carriage feed is at the feed position

❺ **"SELECT"**
Menu display ⓭ is changed. If pressed while the production counter is displayed, the production counter is set to 0.

❻ **"ENTER"**
Contents of the displayed menu are set to be configurable.

❼ ∆∇
Programs Nos. and cycle program Nos. are changed.

❽ ▲
Settings for corner knife operation are changed. The speed is changed in the cycle program setting mode. The lower thread counter is changed in the lower thread counter setting mode.

❾ ▼
Settings for center knife operation are changed. If the center knife is set to OFF when the corner knife is set to ON, the setting for the corner knife is automatically changed to OFF. The speed is changed in the cycle program setting mode. The lower thread counter is changed in the bobbin counter setting mode.

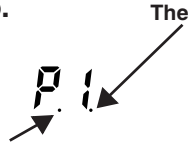
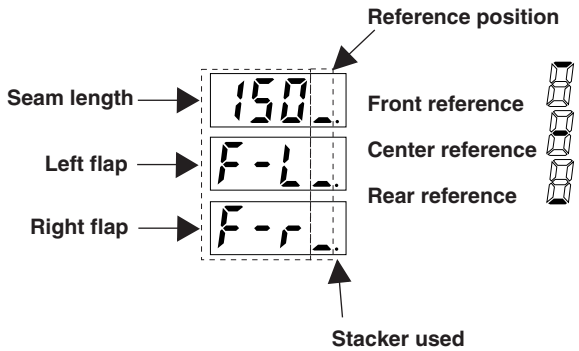
❿ **Program No. display window**
Program No. or parameter No. is displayed.

⓫ **Contents display window**
Contents of the program or those of the parameter are displayed.

⓬ **Display of knife setting**
[CUTTER]: The lamp turns on when the center knife operation setting is ON.
[CORNER CUT]: The lamps turns on when the corner knife operation setting is ON.

⓭ **Setting menu**
The menu to be displayed can be changed by pressing the "SELECT" key ❺.
Displays in the display window and key functions, when each menu is selected, are as shown below.

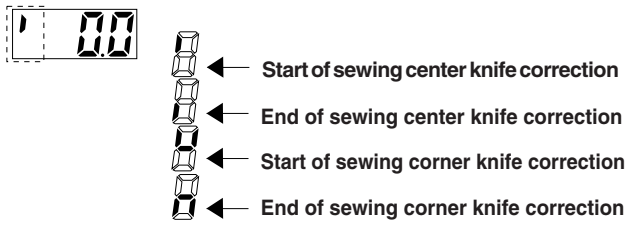
[S.LENGTH]
Display of seam length and flap

Program No. display window ⓾	∆∇ ❼
Program No. The program is locked.  Setting is performed for the cycle program.	Program No. change *1
Contents display window ⓫	▲❽, ▼❾
	Setting for the center and corner knives

* **When the cycle program is selected, the progress is changed within the cycle program.**

[ADJUST]

Display of center and corner knives correction value

Program No. display window ⑩	∆∇ ❼
Program No. P 1	Program No. change *
Contents display window ⑪	▲❽, ▼❾
Correction value  	Setting for the center and corner knives

* When the cycle program is selected, the progress is changed within the cycle program.

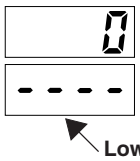
[CYCLE]

Display of the cycle program

Program No. display window ⑩	∆∇ ❼
Program No. C 1 C - ← The cycle program is not used.	Program No. change
Contents display window ⑪	▲❽, ▼❾
Contents of the cycle program The program No. for the current progress blinks.  	Setting for the center and corner knives

[COUNTER]

Display of the lower thread counter(production counter)

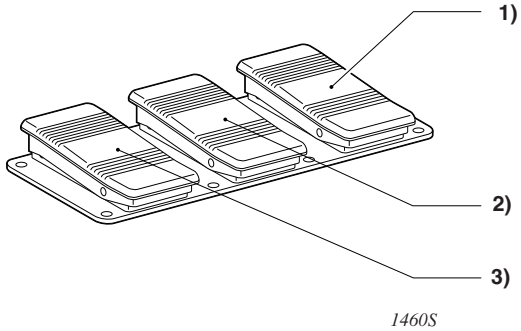
Program No. display window ⑩	∆∇ ❼
Program No.  **The production counter is displayed while the [RESET] key is pressed. When the production counter is displayed, top 2 digits are displayed out of total 6 digits of the production counter.**	**Program No. change ***
Contents display window ⑪	**▲❽, ▼❾**
Lower thread counter value  **The production counter is displayed while the [RESET] key is pressed. When the production counter is displayed, bottom 4 digits are displayed out of total 6 digits of the production counter.**	**Setting for the center and corner knives**

*** When the cycle program is selected, the progress is changed within the cycle program.**

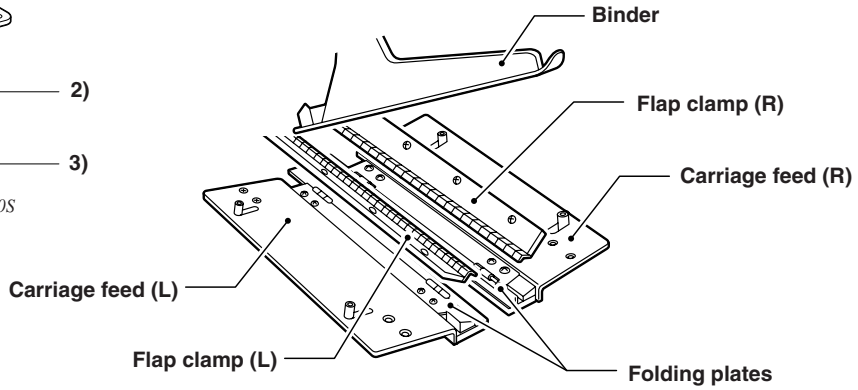
⑭ [!CAUTION]

The lamp turns on or blinks when an error occurs. The contents of the error is displayed in the contents display window ⑪.

1-2. How to operate the 3-pedal switch



1460S



1461S

1) Function of the start (foot) switch

- **Starting automatic sewing on the auto mode**
- **Starting at each step on the test mode**
- **Performing the returning of the carriage feed to the home position when the power switch is set to ON or after the emergency stop switch is released.**
- **Starting the set of the flap correction factors on the programmed mode**

2) Function of the (foot) forward switch

The following function is performed depending on the number of press-down

- **1st One or both of carriage feeds go down. (Setting is needed.)**
- **2nd One of carriage feeds go down. (Setting is needed.)**
- **3rd The folding plate comes out after the binder goes down. (Setting is needed.)**
- **4th Either left or right one of flap clamps goes down. (Setting is needed.)**
- **5th Either left or right one of flap clamps goes down. (Setting is needed.)**

3) Function of the (foot) backward switch

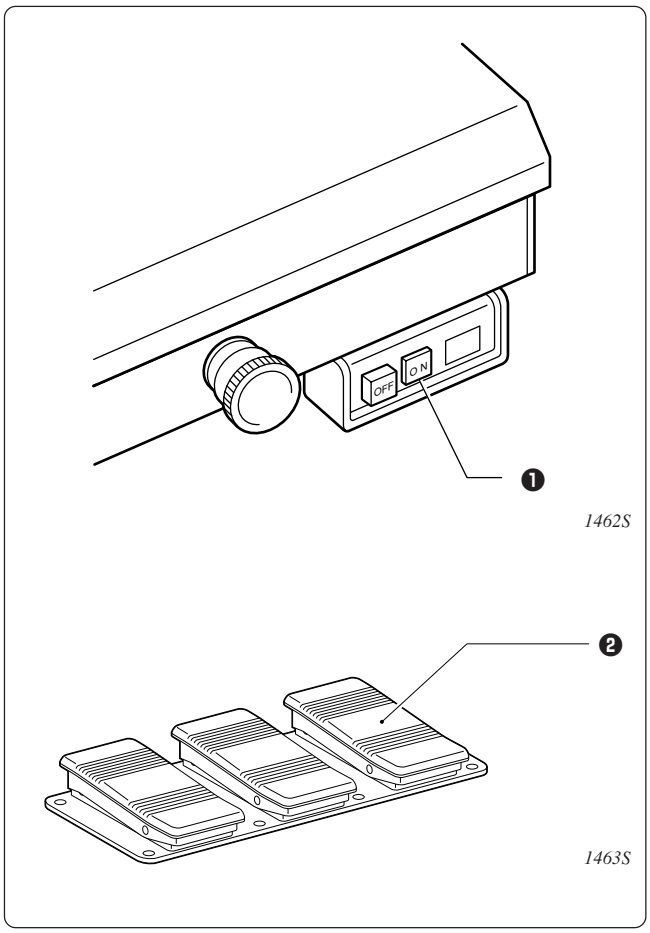
Revert one step of the previous clamping action at each press-down.

* **The function of start switch can be added to the forward switch 2).**

* **The above description illustrates the initial settings. Setting for the addition is performed with the environment parameter No. 17 [Start switch allocation]. (Refer to [Chapter 7 Environment setting].) After setting change, press the switch again after all pressers go down with the forward switch pressed.**

2. Preparation flow for sewing

2-1. Turn on the power supply for the machine



1. **Set the power switch ❶ to ON.**

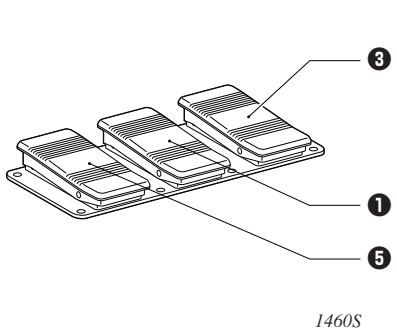
2. **Press down the start switch ❷.**

   The home position is automatically set.

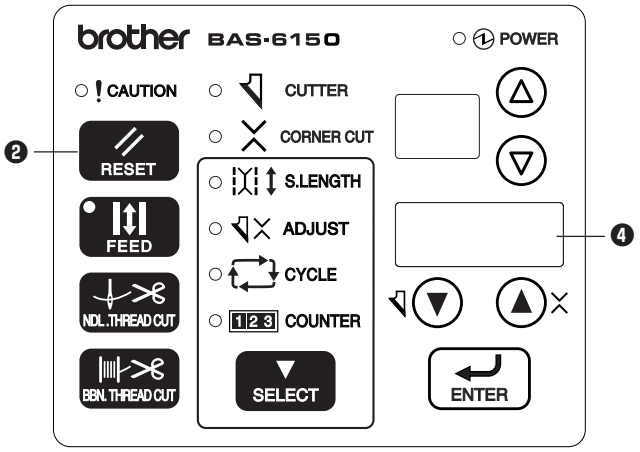
   (Note) When the setting for the memory switch 1 (environment parameter No. 61) is set to ON and the home position is to be set , the center knife moves up and down. Be careful in order not to be injured and not to put cloth and the like around the knife.

3. **Press ΔV key to select the sewing program.**

2-2. Test (step) operation



1460S



1457S

1464S

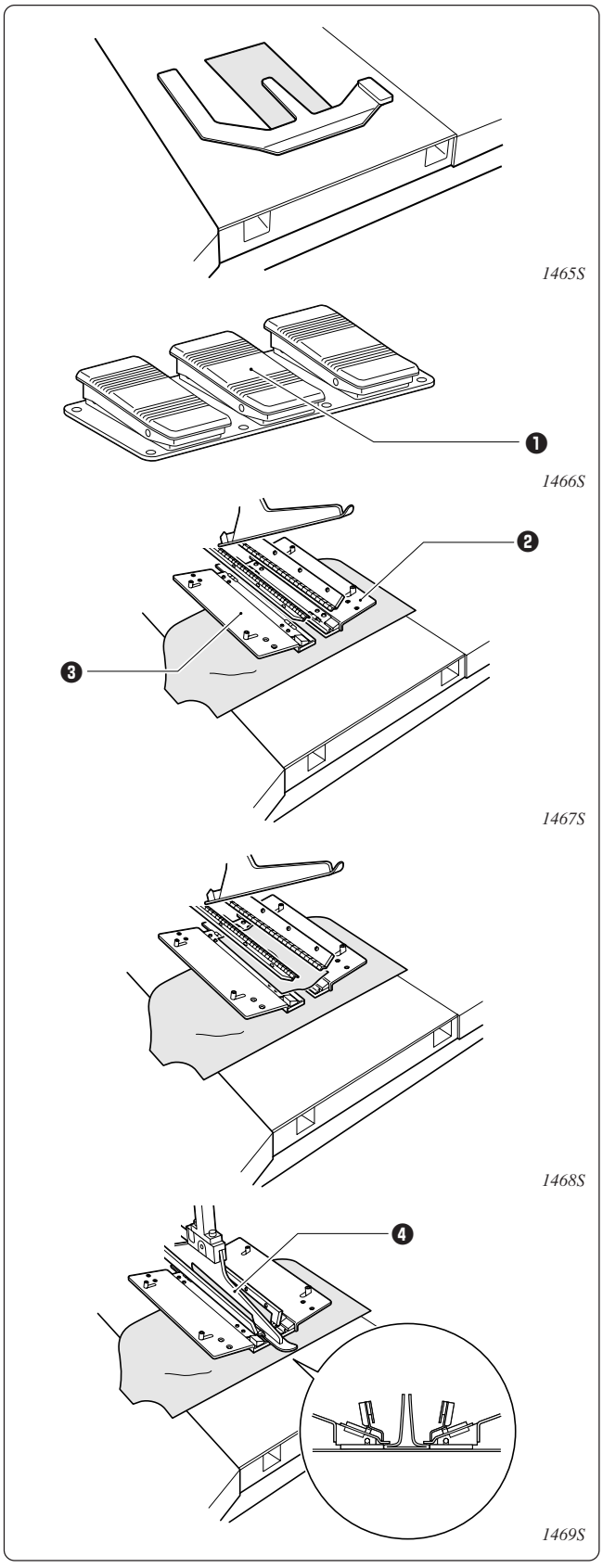
Operation of the switch can be performed for each step. In the test operation mode, the machine, center knife, and corner knife do not operate.

1. **Select program Nos. by pressing ∆∇ key.**
2. **Press the forward switch ❶ several times and the clamp and the binder go down.**
3. **Test operation starts with pressing the start switch ❸ while pressing the "RESET" key ❷.**
   TEST is displayed in the contents display window ❹ and the mode becomes the test operation mode.
4. **Continuous operation starts by continuous press of the start switch ❸.**
5. **One step operation is performed by pressing the forward switch ❶.**
6. **Continuous operation is performed by continuous press of the forward switch❶.**
7. **One step backward is performed by pressing the backward switch ❺.**
8. **Continuous backward operation is performed by continuous press of the backward switch ❺.**
9. **Press the "RESET" key ❷ when the test operation is not performed to stop the test operation mode.**

2-3. How to set the cloth

■ Standard sewing

- **For standard sewing, press the start switch after the folding plate gets moved and sewing**



1465S

1466S

1467S

1468S

1469S

1. **Set the body.**

2. **Press down forward switch ❶ once and the carriage feed goes forward.**

3. **Press down forward switch ❶ once more and carriage feed (right) ❷ goes down.**

4. **Press down forward switch ❶ once more and carriage feed (left) ❸ goes down.**

5. **Set the cloth to be welted.**

6. **Press down forward switch ❶ once more, and binder ❹ goes down and the folding plate operates.**

   After binder ❹ goes down to hold the cloth to be welted, the folding plate operates to fold the cloth to be welted.

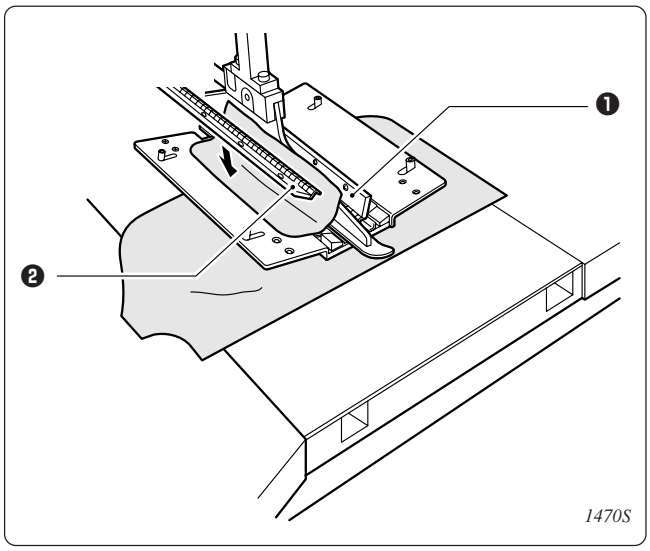
7. **Press down the start switch and sewing is started.**

   Press the emergency stop switch to stop sewing that is going on.

   (Note) Be sure not to touch the machine while sewing.

■ Flap sewing (for the left flap)

- **The machine won't start even if the start switch is press unless the flap clamp goes down on the flap program mode.**

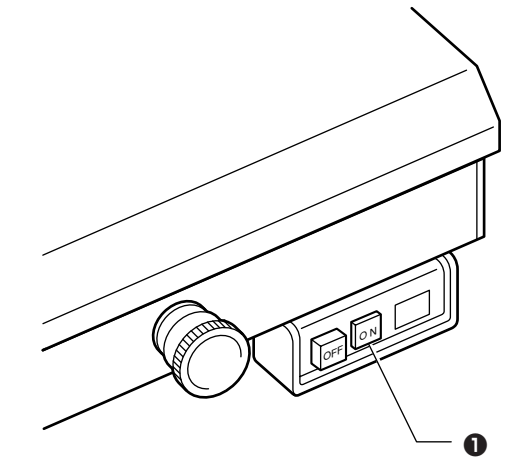


1. **Operate in accordance with steps 1 through 6 "Standard sewing".**
2. **Set the left flap.**
3. **Press down the forward switch five times and flap clamp (left) ❷ goes down.**

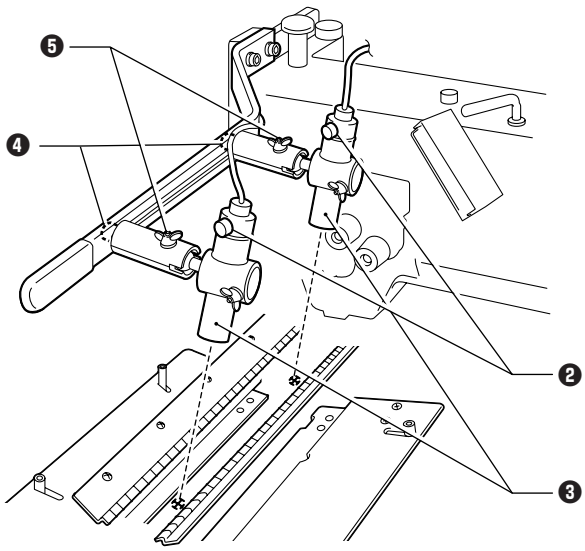
   The cloth can be set with steps above completed.

2-4. How to adjust the marking light beam

(Note) Adjust the focus of light before setting the cloth.



1462S



1471S

1. **The marking light turns on when the power switch ❶ is set to ON.**

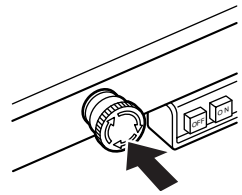
2. **Loosen screw ❷ and adjust the focus by letting lens hood ❸ up and down to be able to have a clear view of the mark "⊹" reflected on the cloth.**

3. **Set the mark "⊹" at the best position (for startup and end of sewing) by loosening fly screw ❹.**

   (Note) Find the front and rear position of sewing startup by adjusting bolt ❺.

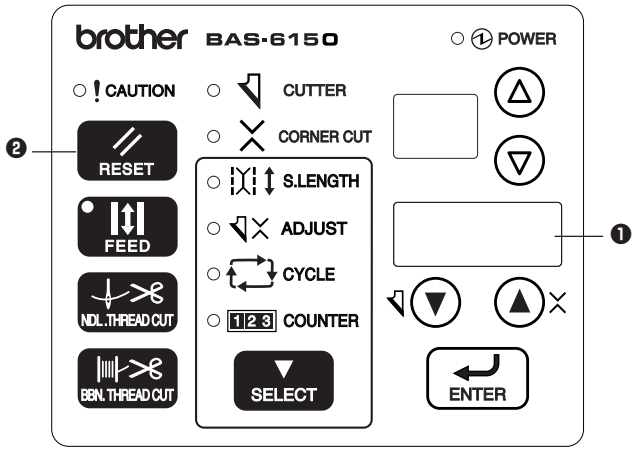
3. Machine stop

3-1. How to stop the machine



1472S

Machine operation can be stopped by pressing the emergency stop button. The emergency stop button is of push turn lock type.



1457S

3-2. Machine stop reset

Error codes [E500], [E501], and [E503] are displayed in the contents display window ❶ on the control panel when the emergency stop switch is push turn locked.

1. **Rotate the emergency stop switch clockwise and the knob of the switch pops up to release the lock.**
2. **The emergency stop is released when the "RESET" key ❷ is pressed. If the emergency stop switch is pressed in sewing, press the start switch furthermore. (The feeder moves to the feed position.)**

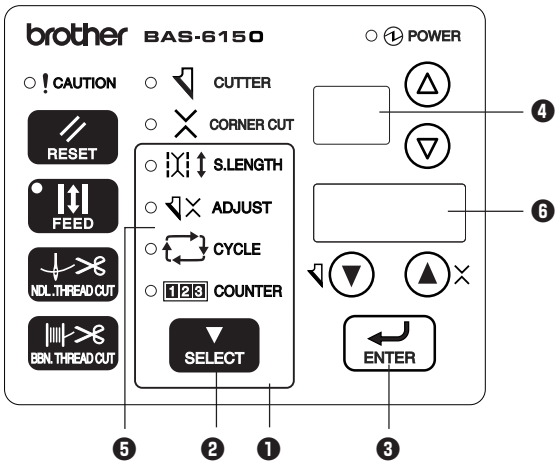
3-3. Post-process after the machine stop due to errors

If an error is displayed when the power supply is on or in sewing, check the corrective action for error codes displayed in the contents display window ❶ by referring to [Chapter 9. Error Code List]. After checking, press the "RESET" KEY ❷.

Chapter 3 Settings

1. Program operation

(Note) • When program lock setting ([2. Program lock] in Chapter 3) is performed, items that can be changed are restricted.
• 10 kinds of sewing program (1-9, 0) can be set.



Sewing pattern

BAS-6150 : Parallel sewing

BAS-6150 (flap specifications) : Parallel sewing, flap sewing (right and left)

When the standby mode is ON (the power supply ON and the start switch pressed), the following settings can be performed for items in the menu ❶ on which LED is lit. (for each program No.)

LED lit menu	Setting item
S.LENGTH	Parameter
ADJUST	Center knife, corner knife correction value
CYCLE	Cycle program
COUNTER	Lower thread counter, production counter

Press the "ENTER" key ❸ after the item is selected with the "SELECT" key ❷. Setting can be performed for environment parameters by pressing the "SELECT" key ❸ with the "ENTER" key ❷ pressed in the standby mode.(Refer to [Chapter 7. Environment Setting])

1-1. Contents of the parameter

Contents of each parameter can be changed.

1. **Keep pressing the "SELECT" key ❷ till LED ❺ in [S.LENGTH] is lit.**
2. **Press ∆∇ key to display the program No. you want to change in the contents display window ❹.**
3. **The mode is changed to the program mode by pressing the "ENTER" key ❸. The parameter No. is lit on the program No. display window ❹. The contents of the parameter is lit to blink in the contents display window ❻. (Display and contents are displayed alternately.)**
4. **Press ∆∇ key to change the parameter No. in the program No. display window ❹.**
5. **Press ▲▼ key to change the contents. Return to step 4 if you need to change other parameters.**
6. **Press the "ENTER" key ❸ to memorize the changed contents.**

List of parameters

Items in [Display] are character strings to be displayed on LED. Characters in quotation marks shows those in the character strings to be displayed on LED.

NO.	Item	Display	Contents (configurable values)	Initial values
0	Seam length	LEN LEn	<table><tr><th>Gauge</th><th>Center knife OFF</th><th>Center knife ON</th></tr><tr><td>8-14 mm</td><td>15-220 (250) mm</td><td>30-220 (250) mm*</td></tr><tr><td>16-20 mm</td><td>38-220 (250) mm</td><td>38-220 (250) mm</td></tr></table>* Sewing can be performed for the space no more than 29 mm by setting the center knife correction value to +.	150
1	Flap sewing	FLAP FLAP	Not sewing "F--" F-- Left "F-L" F-L Right "F-R" F-r (front and rear end detection)	F-- F--
2	Flap correction - start of sewing	FLPS FLPS	-9.9 - 9.9mm (0.1mm pitch)	0.0
3	Flap correction - end of sewing	FLPE FLPE	-9.9 - 9.9mm (0.1mm pitch)	0.0
4	Flap clamp	FLPP FLPP	Not used "OFF" oFF Left only used "L" L Right only used "R" r Both used "LR" Lr	OFF oFF
5	Flap clamp operation	FLPM FLPM	Operation depends on settings for the flap clamp. (0 to 3) Refer to the table 1.	0
6	Sewing speed at lock stitch sewing	SPED SPEd	200,500,800,1000,1200,1500,1800,2000,2200,2500,2800,3000 rpm	2500
7	Stitch pitch	PITC PitC	1.8 - 3.4mm (0.1mm pitch)	2.4
8	Tack stitch method - start of sewing and end of sewing in common	TMTH tMtH	Condense "C--1" C--1 V Back tack "V--2" u--2 N Back tack "N--3" n--3	C--1 C--1
9	Tack stitch length - start of sewing and end of sewing in common	TLEN tLEn	0.0 - 6.0mm (1mm pitch)	4.0
10	Sewing speed at tack stitch - start of sewing and end of sewing in common	TSPD tSPd	200, 500, 800, 1000, 1200, 1500, 1800, 2000rpm The sewing will not exceed the one at lock stitch sewing. The sewing at back tack is no more than 1500 rpm.	1000
11	Tack stitch pitch - start of sewing and end of sewing in common	TPIT tPit	Condense: 0.4 - 2.0mm (0.1mm pitch) Back tack: 0.8 - 3.4mm (0.1mm pitch)	1.0
12	Needle drop number on the same spot - start of sewing	TSNS tSnS	1 to 5 needles	1

NO.	Item	Display	Contents (configurable values)	Initial values
13	Needle drop number on the same spot -for end of sewing	TSNE tSnE	1 to 5 needles	1
14	Sewing reference position	REF rEF	Rear "REF_" rEF_ Middle "REF—" rEF- Front "REF¯" rEF¯	REF_ rEF_
15	Needle up at start of sewing	SNUP SnUP	Not used "OFF" oFF Used "ON" on	OFF oFF
16	Stacker	STKR StKr	Not used "OFF" oFF Used "ON" on (Automatic sensing)	OFF oFF
17	Operational order of clamping	PRSO PrSo	Right to left "R--L" r--L Left to right "L--R" L--r Concurrent movement of right and left "LR" Lr	R--L r--L
18	Clamp movement speed - sewing start position	FEDS FEdS	15 - 45m/min (5m/min pitch)	30
19	Clamp movement speed - corner knife position	FEDE FEdE	15 - 40m/min (5m/min pitch)	30
20	Setting position of clamp movement	PRSP PrSP	The position where the clamp moves after sewing Standby position "OFF" oFF Cloth set position "ON" on	OFF oFF
21	Pick up operation mode	PKUP PtUP	"OFF" oFF "ON" on By setting to ON, the carriage feed moves to the cloth set position as the feed holds the cloth and releases it when the stacker is not used.	OFF oFF
22	Carriage feed movement at pick up return	PKPM PtPM	Left "L" L Right "R" r Left and right "LR" Lr	LR Lr
23	Application of pressure after T-gauge goes down	BIND bind	No air compression "OFF" oFF High air compression "ON-L" on-L Low air compression "ON-H" on-H	OFF oFF
24	Settings for folding plate	FOLD FoLd	Not used "OFF" oFF Only left used "L" L Only right used "R" r Both used "LR" Lr	LR Lr
25	Folding plate movement at corner knife up	FOLC FoLC	Both open "OFF" oFF Only left open "L" L Only right open "R" r Both used "LR" Lr	OFF oFF

NO.	Item	Display	Contents (configurable values)	Initial values
26	With the corner knife up Operation of flap clamp	FLPC FLPC	Not used "OFF" oFF Only left used "L" L Only right used "R" r Both used "LR" Lr	OFF oFF
27	Upper thread breakage monitor	UTBM UtbM	Not used "OFF" oFF Used "ON" on (Automatic sensing)	-
28	Sensitivity of the upper thread breakage monitor	UTBN Utbn	2 to 15 stitches	8
29	Start position of the upper thread breakage monitor	UTBS Utbs	Distance from the start of sewing 0 to 20 mm (1 mm pitch)	5
30	End position of the upper thread breakage monitor	UTBE UtbE	Distance from the end of sewing 0 to 20 mm (1 mm pitch)	5
31	Vacuum device	VCM uCM	Not used "OFF" oFF Used "ON" on (Automatic sensing)	-
32	Vacuum device movement	VCMM uCMM	Set to ON with the foot pedal "OFF" oFF Set to ON automatically at the carriage feed standby position "ON" on	OFF oFF
33	Darts stretcher	DRTP drtP	Not used "OFF" oFF Used "ON" on (Automatic sensing)	-
34	Waist presser	WSTP WStP	Not used "OFF" oFF Used "ON" on (Automatic sensing)	-
35	Setting for Marking light	MRKL MrkL	0 - 71 *Refer to the table 2	0
36	Marking light ON time	MLON MLon	0.1 - 9.9sec (0.1sec)	0.5
37	Marking light OFF time	MLOF MLoF	0.1 - 9.9sec (0.1sec)	0.5
38	Roller stacker	ROL roL	Not used "OFF" oFF Used "ON" on (Automatic sensing)	-
39	Roller drive distance	ROLL roLL	-999 - 999mm (1mm pitch)	120
40	Roller speed	ROLS roLS	30 - 300rpm	150
41	Program copy	COPY CoPY	Specify the program No. of the original program to be copied.	-

Table 1. Settings for flap clamp

Settings	Setting values	Cloth set position (0)	Folding plate in operation (1)	Foot switch (2)	Next foot switch (3)
Not used	0, 1, 2, 3			—	—
Only left used	0, 1, 2, 3				—
Only right used	0, 1, 2, 3				—
Both used	0, 3		—		
	1		—		
	2		—		—

Table2. Marking light setting

Setting can be performed as for 0-3 when the single color marking light(standard) is used.
Setting can be performed as for 0-71 when the three color marking light (option) is used.
R: red, G: green, and Y: yellow

Value	Color at the reference point	Color at other point than the reference point	ON/OFF selection for every reference point	Blinking at the reference point	Blinking at other points than the reference point
0	R	R			
1	R	R		○	
2	R	R		○	○
3	R	R			○
4	R	R	○		
5	R	R	○	○	
6	R	R	○	○	○
7	R	R	○		○
8	G	R			
9	G	R		○	
10	G	R		○	○
11	G	R			○
12	G	R	○		
13	G	R	○	○	
14	G	R	○	○	○
15	G	R	○		○
16	Y	R			
17	Y	R		○	
18	Y	R		○	○
19	Y	R			○
20	Y	R	○		
21	Y	R	○	○	
22	Y	R	○	○	○
23	Y	R	○		○
24	R	G			
25	R	G		○	
26	R	G		○	○
27	R	G			○
28	R	G	○		
29	R	G	○	○	
30	R	G	○	○	○
31	R	G	○		○
32	G	G			
33	G	G		○	

Value	Color at the reference point	Color at other point than the reference point	ON/OFF selection for every reference point	Blinking at the reference point	Blinking at other points than the reference point
34	G	G		○	○
35	G	G			○
36	G	G	○		
37	G	G	○	○	
38	G	G	○	○	○
39	G	G	○		○
40	Y	G			
41	Y	G		○	
42	Y	G		○	○
43	Y	G			○
44	Y	G	○		
45	Y	G	○	○	
46	Y	G	○	○	○
47	Y	G	○		○
48	R	Y			
49	R	Y		○	
50	R	Y		○	○
51	R	Y			○
52	R	Y	○		
53	R	Y	○	○	
54	R	Y	○	○	○
55	R	Y	○		○
56	G	Y			
57	G	Y		○	
58	G	Y		○	○
59	G	Y			○
60	G	Y	○		
61	G	Y	○	○	
62	G	Y	○	○	○
63	G	Y	○		○
64	Y	Y			
65	Y	Y		○	
66	Y	Y		○	○
67	Y	Y			○
68	Y	Y	○		
69	Y	Y	○	○	
70	Y	Y	○	○	○
71	Y	Y	○		○

Flap correction

Settings can be performed as for correction value for flap start of sewing and end of sewing.

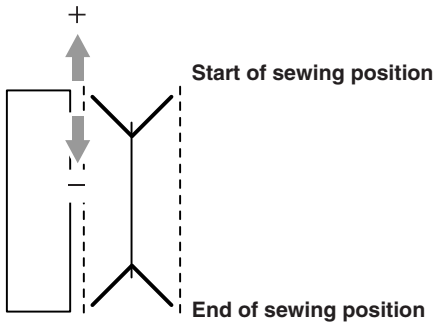
1. **Select the parameter No.2 [Flap correction-start of sewing] .**

   * Setting for the parameter No. 3 is started with the operation at step 4.

2. **Set the flap cloth and press down the start switch.**

   * Operation proceeds with the following order: feeder forward → flap front end detection → flap front end stop at the needle down position

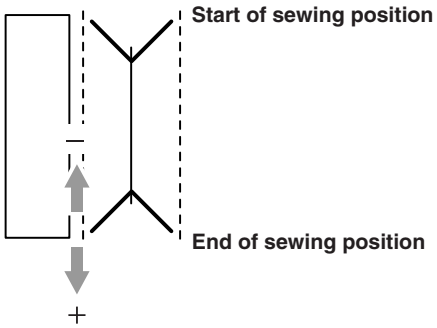
3. **Adjust the front and rear position of the feeder with ▲▼ key.**



1477S

4. **The value is memorized and the parameter No. 3 [Flap correction - End of sewing] is displayed. The operation proceeds as described below: feeder forward further → flap rear end detection → flap rear end stop at the needle down position**

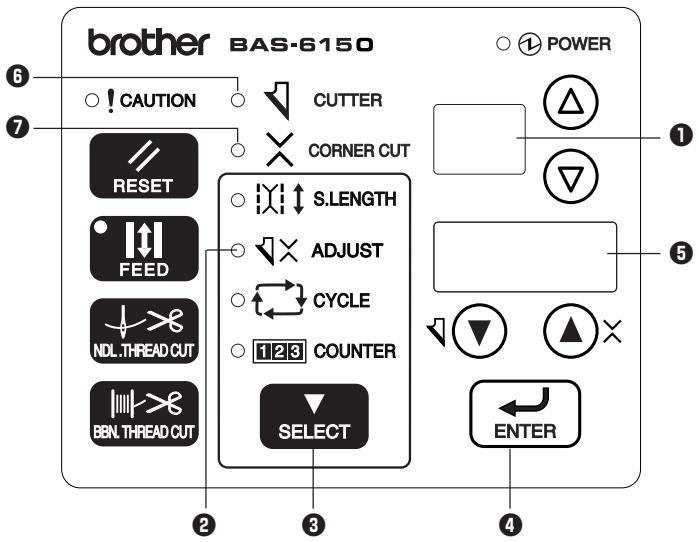
5. **Adjust the front and rear position of the feeder with ▲▼ key.**



1478S

6. **Press down the start switch to memorize the value and the feeder moves to the standby position.**

1-2. Center knife and corner knife correction



1457S

Settings can be performed as for start of sewing and end of sewing for center and corner knives.

1. **Press ∆∇ key to display the program No. you want to change on the program No. display window ❶.**
2. **Keep pressing the "SELECT" key ❸ till LED ❷ in [ADJUST] is lit.**
3. **The mode is changed to the program mode by pressing the "ENTER" key ❹. The correction code is displayed to blink in the program No. display window ❶ and the correction value is displayed to blink in the contents display window ❺.**

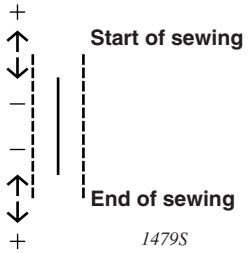
Correction value	Display symbol	Correction value	Display symbol
Center knife start of sewing	0	Corner knife start of sewing	0
Center knife end of sewing	8	Corner knife end of sewing	8

LED ❻ in [CUTTER] in correction of the center knife blinks and so does LED ❼ in [CORNER CUT] in correction of the corner knife.

4. **Press ∆∇ key to change the kind of correction value.**
5. **Press ▲▼ key to change the correction value.**

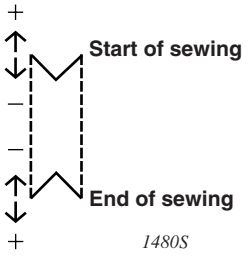
The correction value ranges from -9.9 to 9.9 in the unit of 0.1 mm. (Nos. do not show the real dimension but does a rough idea.)

Center knife



1479S

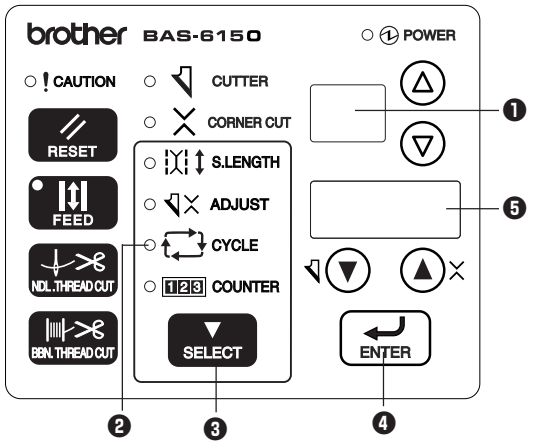
Corner knife



1480S

6. **Press the "ENTER" key ❹ to memorize the changed contents.**

1-3. Cycle program



1457S

Five kinds of cycle program can be generated. Four programs can be set for each cycle program. The cycle program can be modified. Setting or releasing can be performed for the stacker operation in the cycle program.

1. **Press the "SELECT" key ❸ till LED ❷ in [CYCLE] is lit.**
2. **Press ∆∇ key to display the cycle program No. in the program No. display window ❶.**

Display symbol	Contents
C-	The cycle program not used
C1~C5	Auto (the cycle program is used)

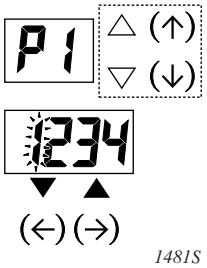
Contents of the cycle program are displayed to illuminate in the contents display window ❺. Display of the blinked No. shows the program No. of the current progress.

3. **The mode is changed to the program mode by pressing the "ENTER" key ❹.**

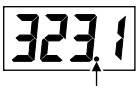
The program No. is displayed to illuminate in the program No. display window ❶.

4. **Press ▲▼ to select the program you want to change in cycle programs.**
5. **Press ∆∇ key to change the program No.**

The blinking program No. on the contents display window ❺ is changed.



1481S



The dot denotes the stacker is to operate.

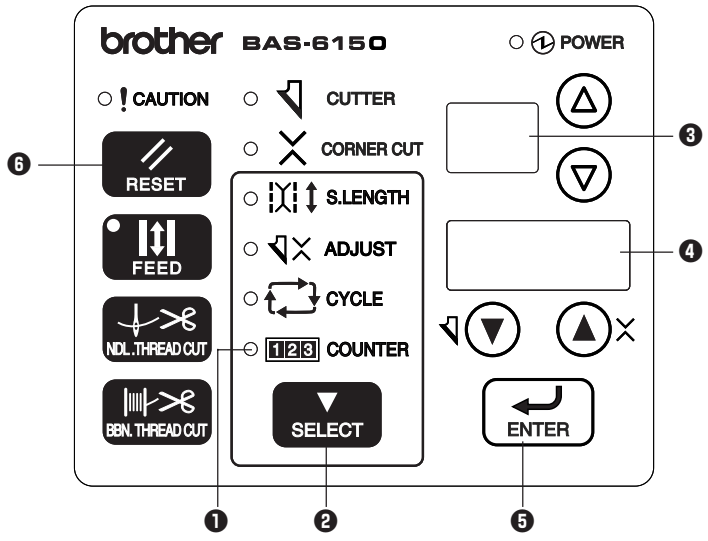
1482S

The program No. , which is displayed to blink, has been selected. Press ∆∇ key to change the program No.(P-(P-) is used when no setting is performed for the program.) Setting or releasing can be performed for the stacker operation at this step. Set the program No. you want to set or release to blink and press the "SELECT" key ❸. When the stacker operation is set, a dot appears at the lower and right side of the program No.

6. **Press the "ENTER" key ❹ to memorize the changed contents.**

Return to step 4, 5 if you have other programs to change.

1-4. Counter operation



1-4-1. Setting for the lower thread

The No. of bobbin counter decreases by one when sewing for one program is completed. When the counter shows 0, a buzzer sounds five times and the lower thread setting mode appears (below 3). The maximum setting No. is 999. The lower thread volume sensor (option) can be used. No setting can be performed for the lower thread counter when the lower thread volume sensor is used. When the lower thread volume sensor detects "no thread", a sign appears according to the case.
"BBN.B"(bbnb): No bobbin thread on both the right & left.
"BBN.L"(bbnL): No bobbin thread on the left.
"BBN.R":(bbnr): No bobbin thread on the right.
(The previous value will be displayed when you press the "RESET" key ❻.)

1. **Keep pressing the "SELECT" key ❷ till LED ❶ in [COUNTER] is lit.**
2. **Press the "ENTER" key ❺ .**

   The mode is set to the counter setting mode by pressing the "ENTER" key ❺ and the previous setting value is displayed to blink.
3. **Press ▲▼ key to change the lower thread counter No.**

   A number is blinking in the contents display window ❹ while the lower thread counter is in setting.

   *** When the setting set at 000, the lower thread counter is not used.**
4. **Press the "ENTER" key ❺ to set the number.**

   The number in the contents display window ❹ is changed to blink..

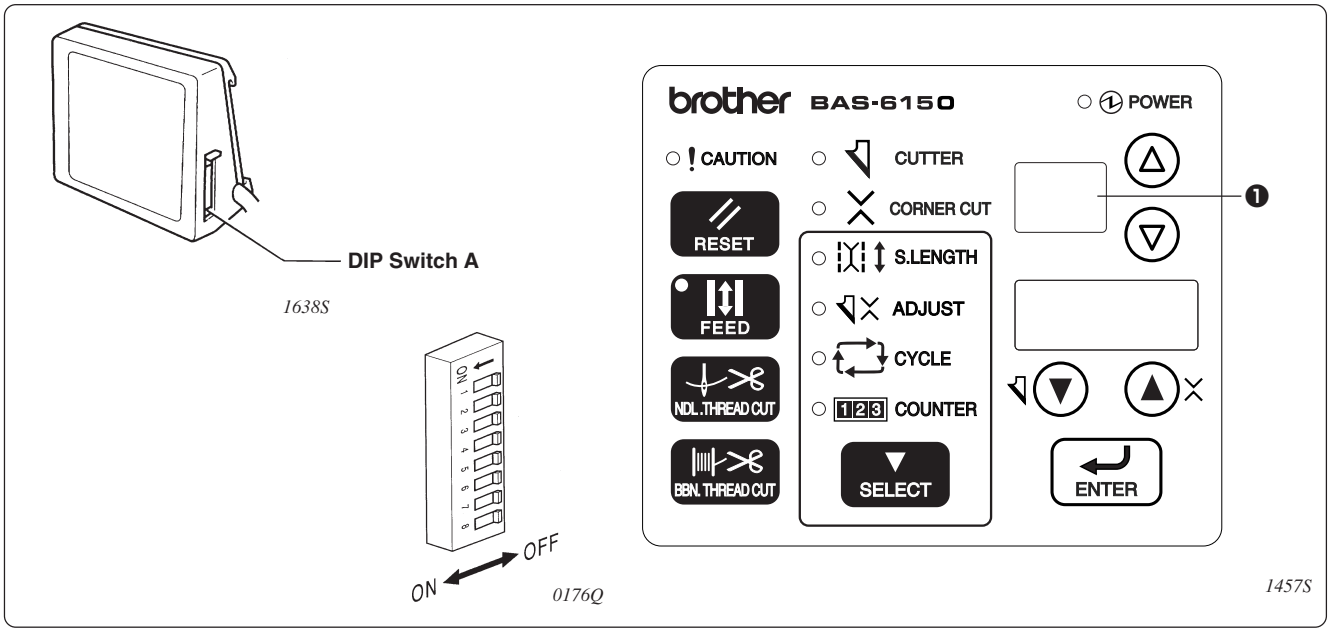
1-4-2. Clearance of the production counter

Reset the number of the production counter to 0.

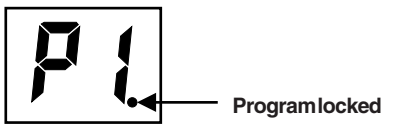
1. **Keep pressing the "SELECT" key ❷ till LED ❶ in [COUNTER] is lit.**
2. **The production counter is displayed in the program No. display window ❸ and the contents display window ❹ while the "RESET" key ❻ is pressed.**
3. **The production counter is set to 0 by pressing the "SELECT" key ❷ while the production counter is displayed.**
4. **The display is returned to the lower thread counter display by releasing the "RESET"key ❻.**

2. Program lock

The function of changeable programs can be restricted in order not to change the contents of the program by mistake.



Turn off the power switch, and turn on the DIP-SW A8 on the operation panel.
Program will be locked when the power switch is turned on.



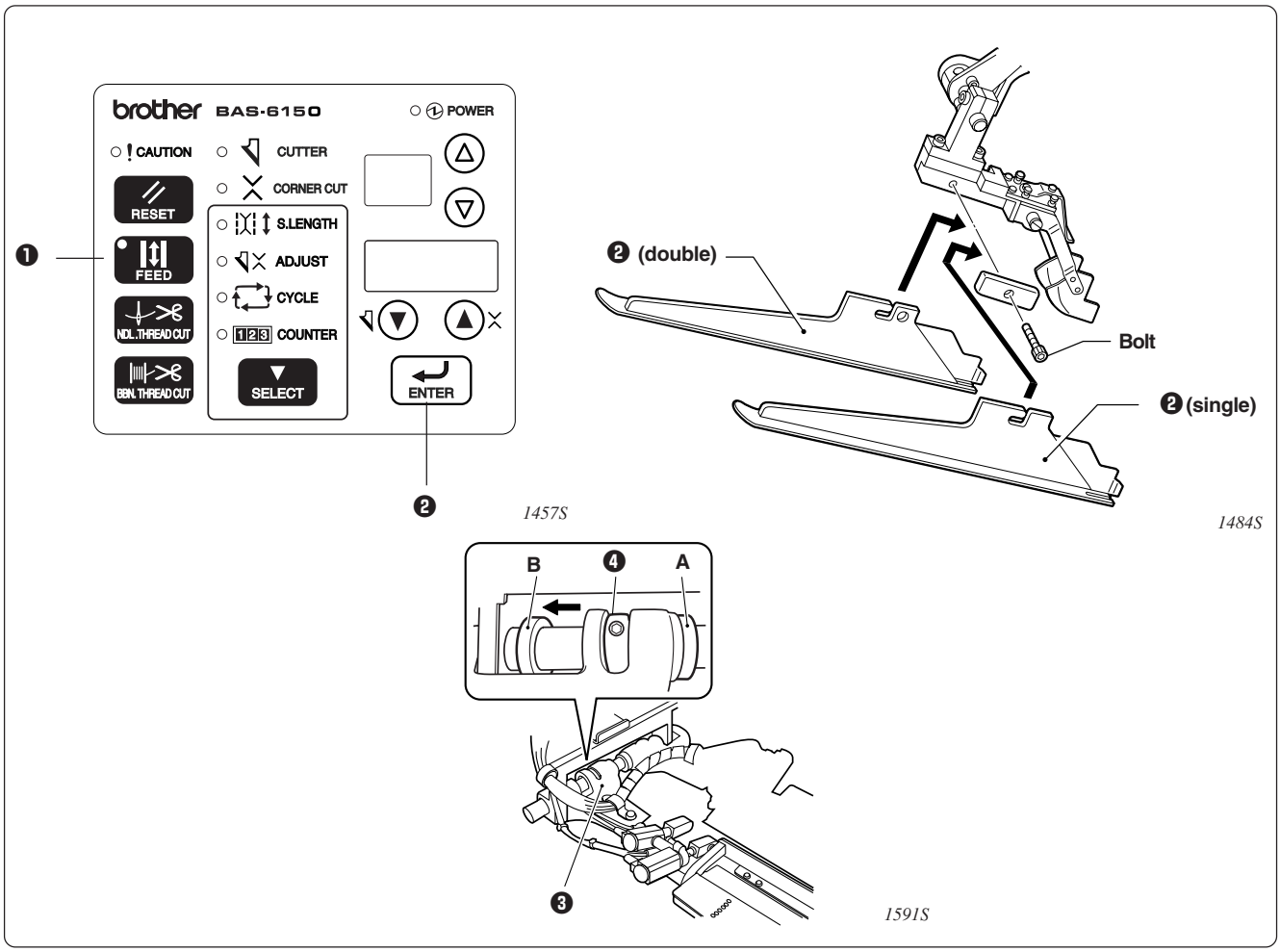
1483S

A dot is displayed to show the program is locked at lower and right side of the program No. display window ❶.
Items shown below only can be changed while the program is locked.

- **Program No.**
- **Sewing distance**
- **Cycle program No.(mode)**
- **Operation setting for the center knife, corner knife and stacker**

(Note) Setting function can not be used.

3. How to set double and single welting



The position is confirmed as described below:

1. **Press "FEED" key ❶ to move the carriage feed to the feed position.**
2. **Loosen the bolt and replace the gauge with the one for the single welting.**

   Push the single welting gauge up as far as it goes.
3. **Loosen the screw on set color ❹ and tighten it again putting the carriage feed ❸ to the collar B. (The position of the collar A is for double welting.)**
4. **Press down the foot forward switch with "ENTER" key ❷ pressed and the binder goes down(goes up).**
5. **Confirm the cloth slide plate is in parallel with the binder.**
6. **Press "FEED" key ❶ with the binder up and the carriage feed is returned to the standby position.**

   * When the setting for the memory switch 3 (environment parameter No.63) is set to ON, press the "ENTER" key ❷ with the "FEED" key ❶ being pressed.

Chapter 4 Oiling

1. Oiling

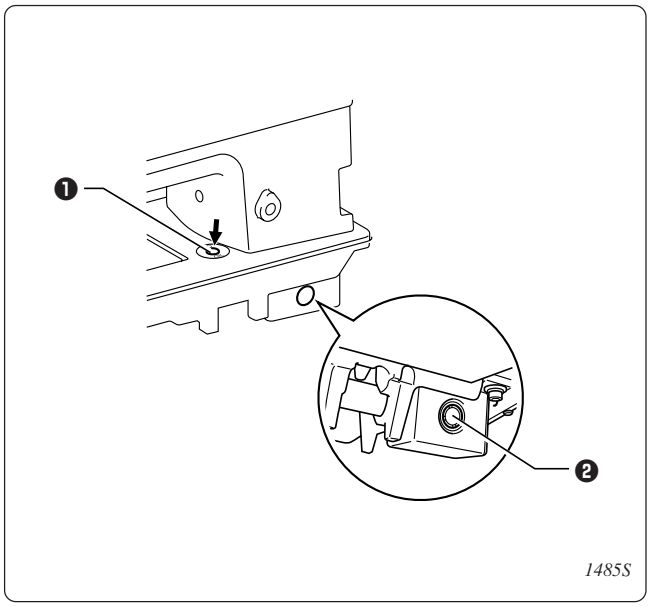
⚠ CAUTION

Turn off the power switch before oiling. Otherwise, unintended press on the foot switch may cause injury.

Be sure to wear protective goggles and gloves when handling lubricating oil or grease so that no oil or grease gets into your eyes or onto your skin. Do not eat or drink lubrication oil or grease in order not to have vomiting or diarrhea. Keep oil and grease out of the reach of children.

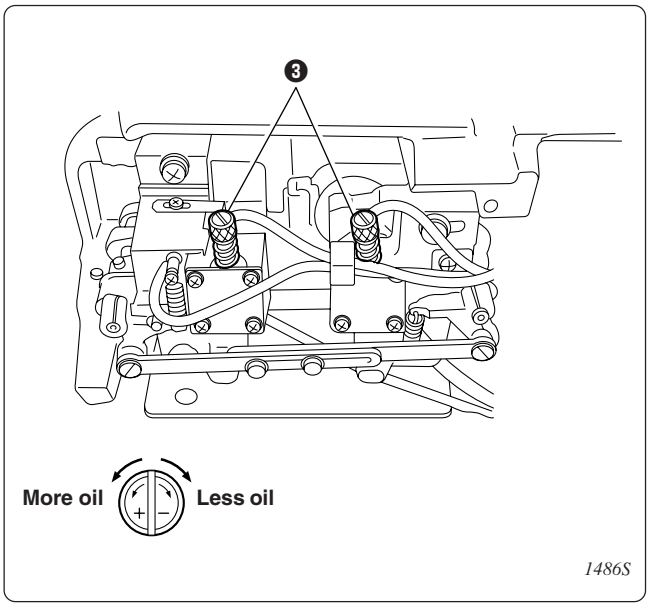
(Note)
- **Be sure to conduct oiling whenever visual check through the oil window shows the quantity of oil is reduced to about 1/3 of the full. Otherwise, oil shortage may cause heat clog and so on.**
- **Be sure to conduct oiling before operating the machine.**
- **Supply oil to the extent that the felt absorbs oil lightly. Lack of oil in the felt of the rotary hook assembly may cause sewing troubles.**
- **Use the machine oil specified by Brother (high white #70).**

■ Oiling



- **Supply oil from oil cap ❶ so that the oil is filled up to the upper part of the oil meter window ❷.**
- **Supply oil when the quantity of oil is reduced to the lower part of the oil meter window ❷.**
- **Be careful not to supply oil excessively lest the oil spills over when the machine is raised upright.**

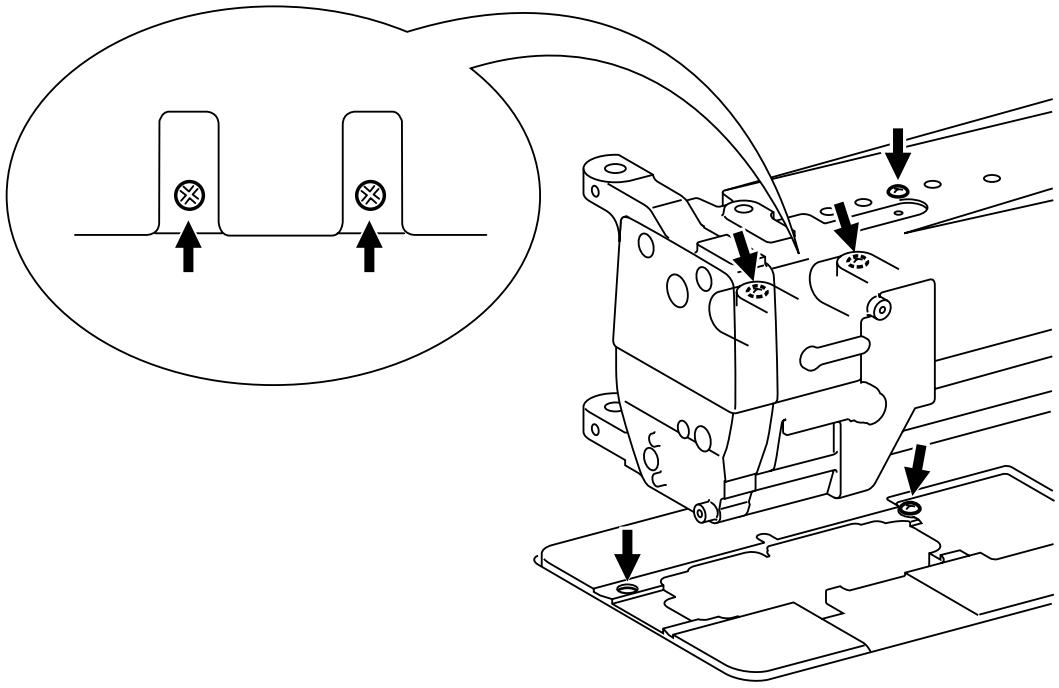
■ Adjustment of supplied oil to the rotary hook



- **Raise the head of the machine and detach the oil pan.**
- **Be careful not to loosen adjusting screws ❸ too much lest oil in the tank is running short too fast.**

2. Oiling

For initial operation or after long repose of the machine, be sure to apply a couple of drops of oil to the arrow-pointed places.



1487S

3. How to raise the head

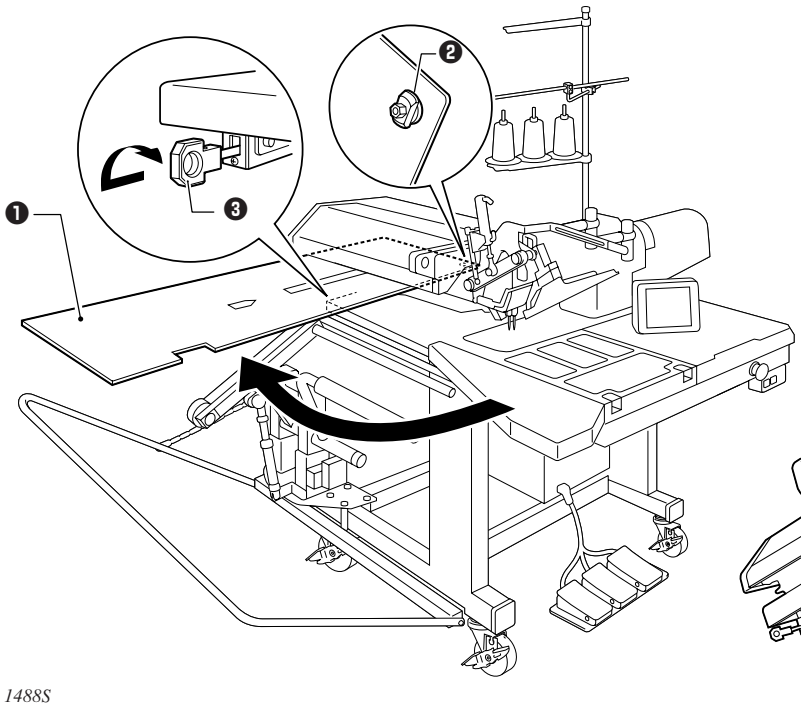
⚠ CAUTION

Turn off the power switch before oiling. Otherwise, unintended press on the foot switch may cause injury.
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.

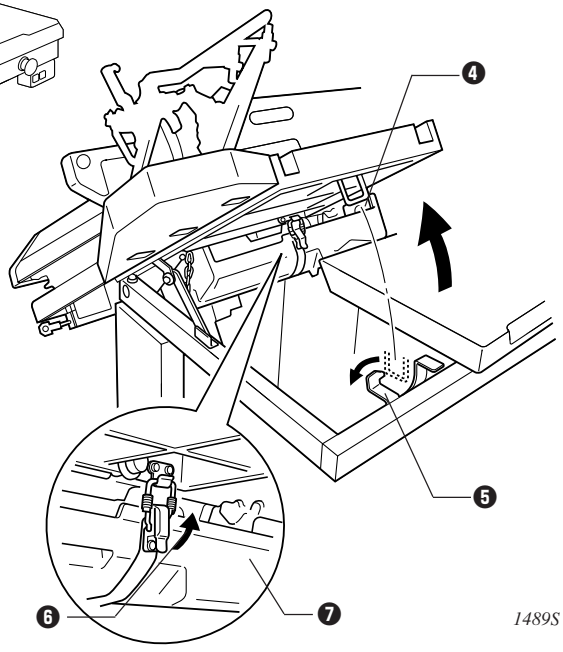
Pay enough attention to safety when adjusting is needed with the power switch and air supply ON.

Maintenance and inspection of the machine should be performed only by technicians who have been properly trained.

1. **Lift up cloth slide plate ❶ and turn it to be perpendicular.**
2. **Dismount pivot pin ❷ from the sub table.**
3. **Pull and lock shaft stopper ❸ located at the rear and lower end.**
4. **Dismount hook ❺ from support metal fitting ❹ at front and lower side and raise the machine.**
5. **Detach catch clip ❻ and oil pan ❼.**



1488S

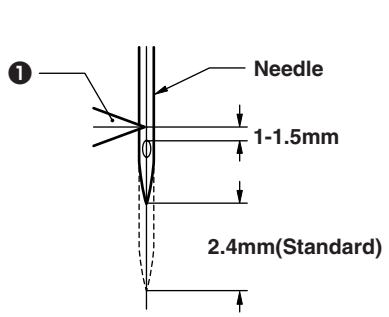


1489S

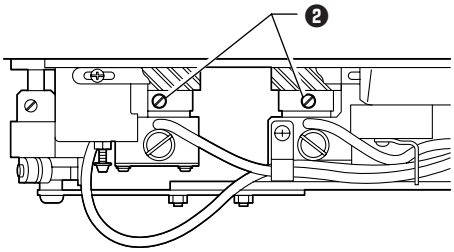
Chapter 5 Adjustment

For raising the head, refer to "3. How to raise the head" in "Chapter 4. Oiling".

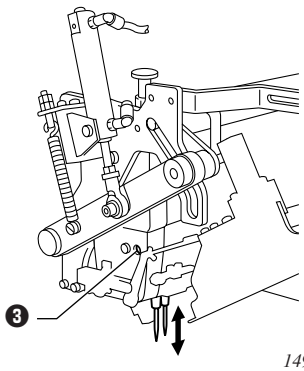
1. Timing adjustment of needle and rotary hook



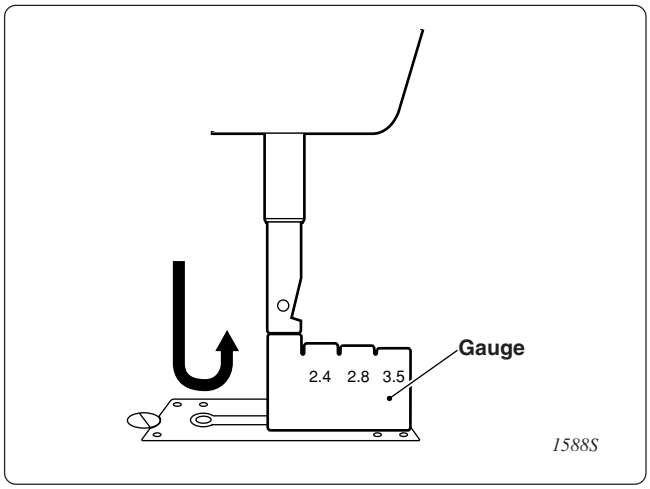
1490S



1491S



1492S



1588S

Lift amount of needle bar

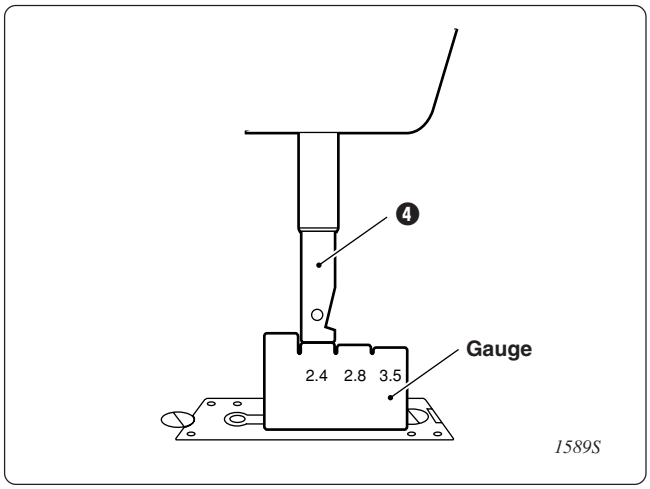
Loosen screw ❷ and rotate rotary hook ❶ so that rotary hook blade top ❶ is in alignment with the center of the needle when the needle goes up by 2.4 mm (standard) (to be measured by a gauge) from the lowest position.

Height of the needle bar

Loosen set screw ❸ and let the needle up and down so that the clearance between top edge of rotary hook and that of needle hole be 1 ~ 1.5mm.

Change of the lift amount of needle bar

The lift amount of needle bar is required to change when sewing materials that are uneasy to make a needle hole loop are used.

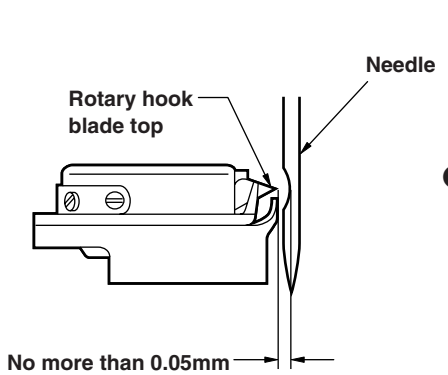


1589S

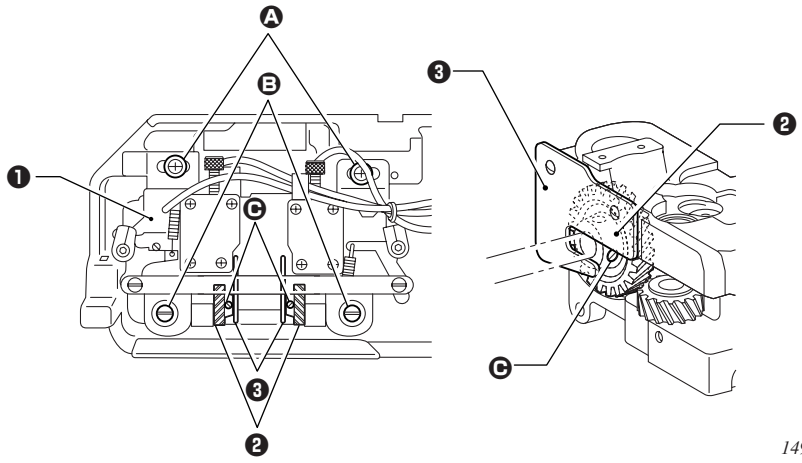
1. **Rotate the pulley to move the needle to the lowest position.**
2. **Align the bottom face of needle clamp ❹ with the gauge.**

   If aligned to the larger number, the less occurs the stitch skip. (standard: 2.4 mm) Excessive increase of lift amount causes the loose tension of the thread and the frequent stitch skip.
3. **Adjust the timing between the needle and rotary hook written above.**

2. Clearance adjustment between needle and rotary hook



1493S



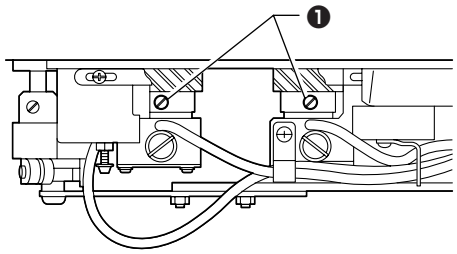
1494S

1. **Loosen screws Ⓐ, Ⓑ, and Ⓒ.**
2. **Let rotary hook base move ❶ to left and right so that the clearance between the needle and rotary hook blade top be 0.05mm.**
3. **Fasten screws Ⓐ, Ⓑ, and Ⓒ tightly after adjustment.**

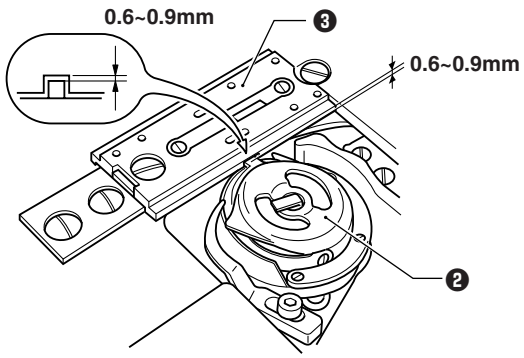
   (Note) • Fasten set screw Ⓒ at the position where lower shaft gear ❷ touches lightly with guide plate ❸.

   • Fasten set screw Ⓒ so as not to change the tightening force of set screw Ⓒ lower shaft gear ❷.

3. Clearance adjustment between rotary hook and needle plate



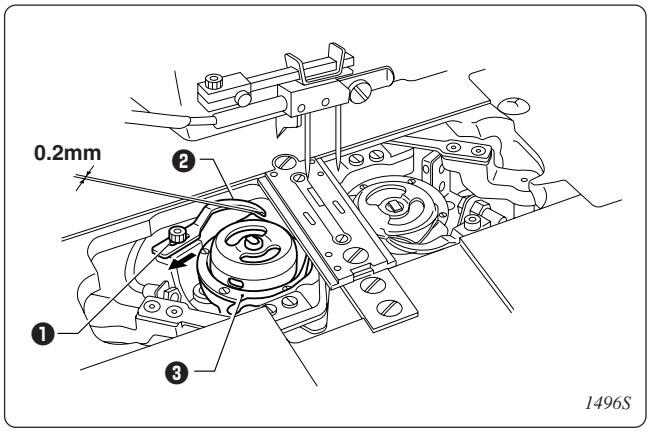
1491S



1495S

Loosen screw ❶ and let the rotary hook ❷ up and down so that the clearance between rotary hook ❷ and needle plate ❸ be 0.6 - 0.9mm.

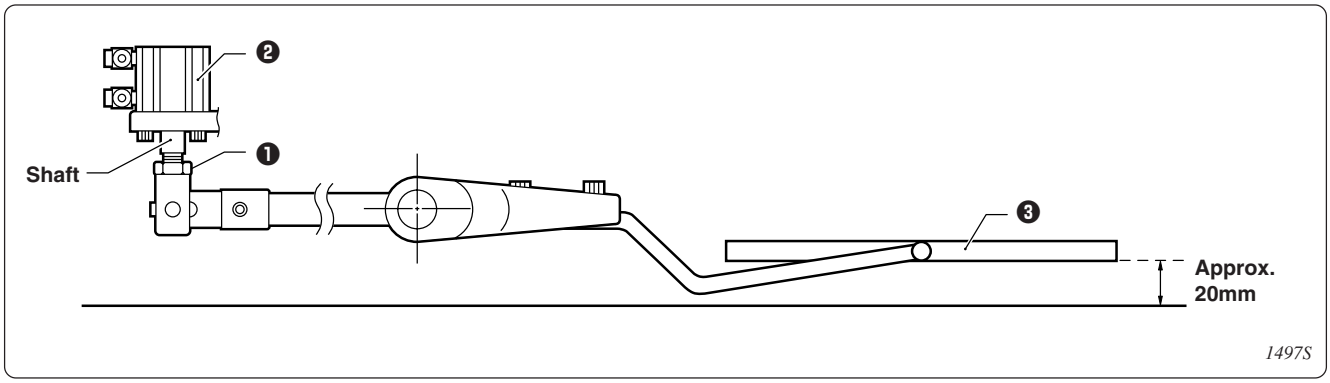
4. Clearance adjustment between rotary hook and bobbin case opener



- **Loosen bolt ❶ and let the bobbin case opener ❷ move to left and right to adjust the clearance between rotary hook ❸ and bobbin case opener ❷.**
- **Set the clearance between rotary hook ❸ and bobbin case opener ❷ to be 0.2mm when bobbin case opener ❷ is pulled far most to the arrow-pointed direction.**

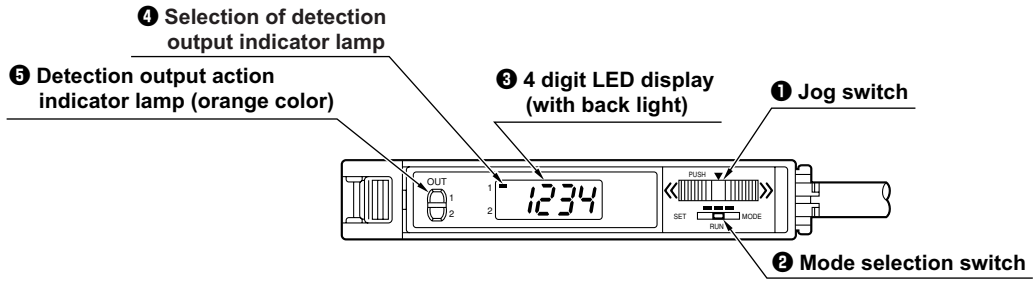
5. Height adjustment of carriage feed

Adjust the height of the top end of carriage feed, when it is up, to be 20mm from the slide plate.



1. **Loosen nut ❶.**
2. **Rotate cylinder ❷ shaft to adjust the height of carriage feed ❸ top end (about 20mm).**
3. **Tighten nut ❶ to lock after height adjustment.**

6. Explanation of sensor amplifier



❶ Jog switch

Change values by pushing down to (+) or (-) side.

❷ Mode selection switch

[RUN]: Set to this position in the normal detective condition.

[SET]: Set to this position for setting the sense degree.

❸ LED display

The current reflection light amount is displayed with numbers from 0 to 4090 when the mode selection switch is set to [RUN]. The current threshold value (limit value to decide ON/OFF of the sensor) is displayed with numbers from 0 to 4090 when the mode selection switch is set to [SET].

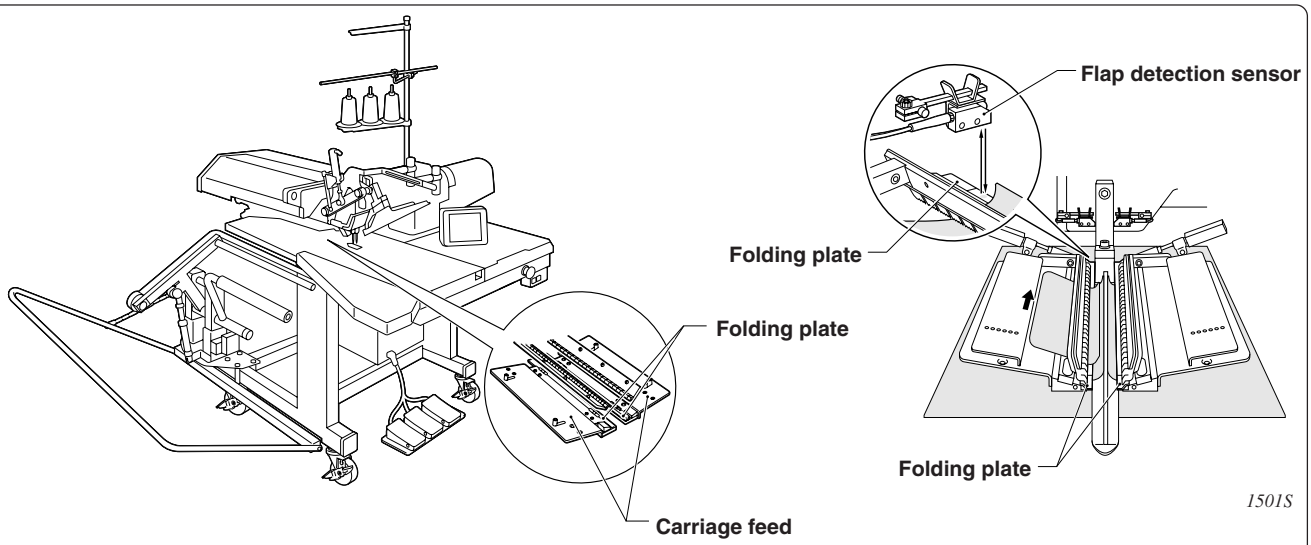
❹ Selection of detection output

Which one of detection output 1 or 2 is selected is indicated. Rotation of the jog switch can change 1 to 2 and vise versa. For this equipment, output 1 is used.

❺ Detection output action indicator lamp

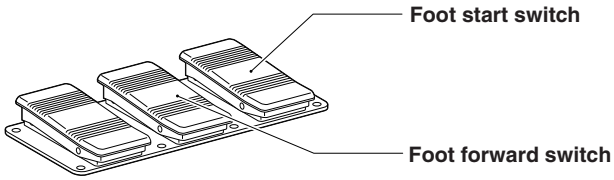
LED is turned on when the sensor is ON. For this equipment, the indicator 1 shows the sensor condition.

7. Adjustment of flap sensor (flap specifications)



1499S

1501S



1500S

7-1. Before starting flap sewing

The flap detection sensor detects the end position of the flap through the light amount which is emitted from the lens and reflected on the reflection tape on the folding plate. Be sure to clean the folding plate based on the steps below to secure the flap detection before sewing.

1. Turn on the power switch and press down the foot start switch once.

The carriage feed moves forward and detects the home position, and then the carriage feed moves to the waiting position.

2. Press down the foot forward switch once.

The carriage feed moves forward to the cloth setting position and the flap hold opens.

3. Press the emergency stop switch.

The error code (E-500) appears on the panel and the buzzer sounds.

(Note) Be sure to conduct cleaning after the emergency stop switch is pressed. Otherwise, an accidental press on the foot switch causes the binder and carriage feed to move and may cause injury.

4. Wipe the left and right the reflection tapes on folding plates overall with soft cloths and the like.

The right end position of the flap may not be detected if the folding plate is contaminated with dirt.
When the reflective tape loses its function, replace the tape with new one.

5. Reset the emergency stop switch.

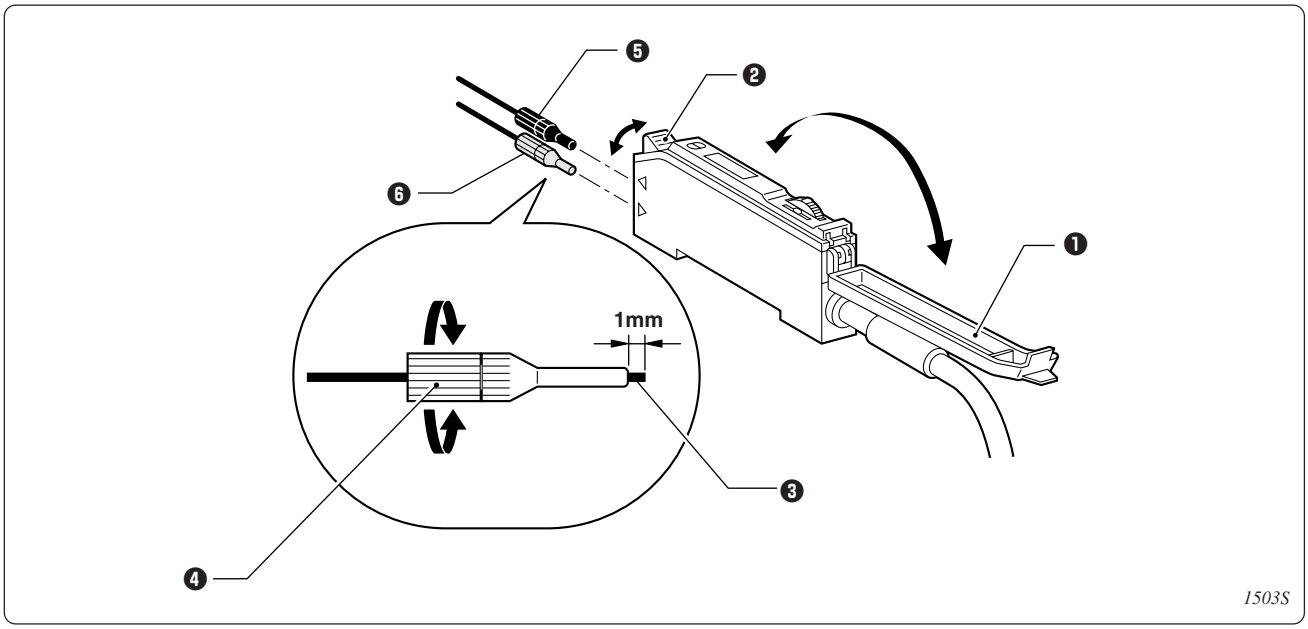
7-2. How to set the detection sensitivity

7-2-1. Threshold value setting

Perform the following adjustment for left and right sensors.

1. **Dismount the cover for the sensor amplifier and set the mode selection switch to [SET].**
   Confirm the detection output is selected to be [1].
2. **The current threshold value is displayed in LED screen.**
   Decrease the value (200-300) when the reflected light is not strong enough and a detection error occurs.
3. **Set the mode selection switch to [RUN].**
4. **Mount the cover for the sensor amplifier.**

7-2-2. How to insert the fiber

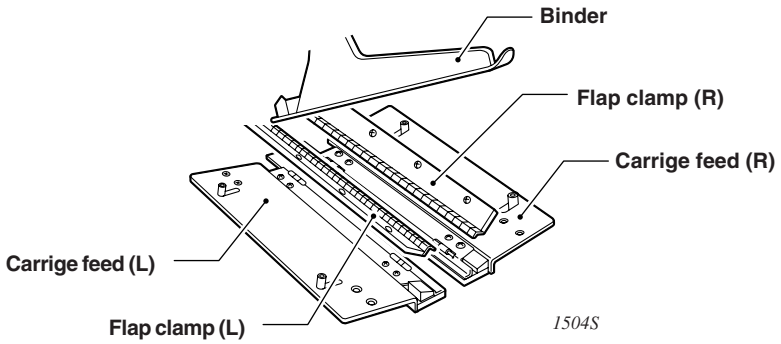


1. **Dismount cover ❶ for the sensor amplifier. Pull down lever ❷ and pull out fiber ❸.**
2. **Rotate sleeve ❹ by the base and loosen fiber ❸.**
3. **Adjust the top of the fiber to come out about 1mm from the sleeve and turn the sleeve base to fix.**
4. **Put fiber at light projection side (black sleeve) ❺ into the upper side of amplifier.**
5. **Put fiber at light receive side (gray sleeve) ❻ into the lower side of amplifier.**
6. **Pull up lever ❷ and mount cover ❶ for the sensor amplifier.**

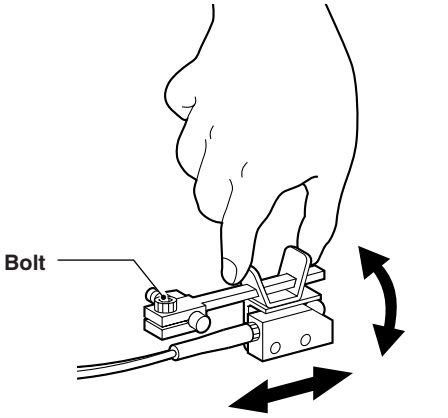
(Note) Be sure to cut the top of fiber only by the dedicated fiber cutter, which comes with at supply of the fiber. Cutting by a nipper and other tools may cause low sensitivity and detection error.

7-2-3. Adjustment of the lens position at replacement of gauges

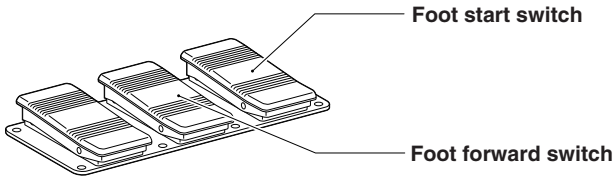
The lens needs alignment of its position with the width of gauge for replacement of gauges. Proceed to following steps for lens position adjustment.



1504S



1505S



1500S

1. Turn on the power and press down the foot start switch.

The home position is detected, moving the carriage feed forward. Then the carriage feed moves to the waiting position.

2. Set the body.

3. Press down the foot forward switch once.

The flap clamp opens when the carriage feed moves to the cloth set position.

4. Keep pressing down the foot forward switch until both flap clamps go down.

5. Press the emergency stop switch.

The error code (E-500) appears on the panel and the buzzer sounds.

(Note) Be sure to adjust the machine after the emergency stop switch is pressed. Otherwise, an accidental press on the foot switch causes the binder and carriage feed to move and may cause injury.

6. Reset the emergency stop switch.

The buzzer stops.

When the emergency stop switch is reset, the feeding motor becomes free and the carriage feed can be moved manually.

7. Move the carriage feed manually so that the end of the folding plate gets to the red spot position of the reflected light from the lens.

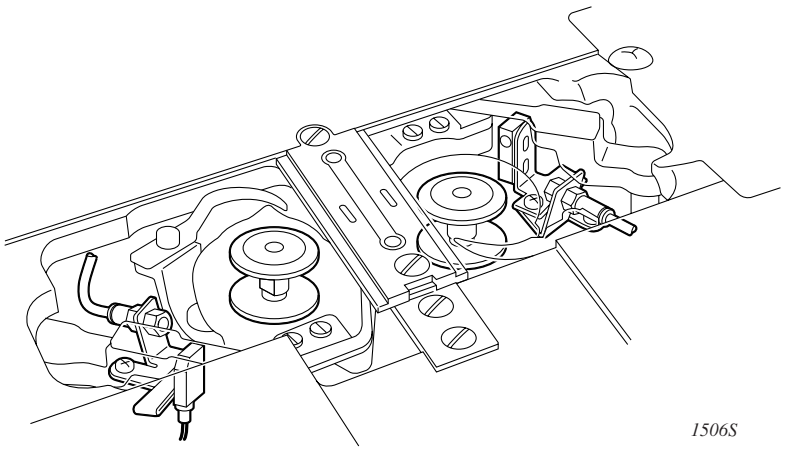
8. Pinch the sensor holder R•L with fingers and slide it to set the light spot on the reflection seal on the folding plate for adjustment of right and left flap detection sensors.

Also adjust the value of the sensor amplifier to be the maximum.

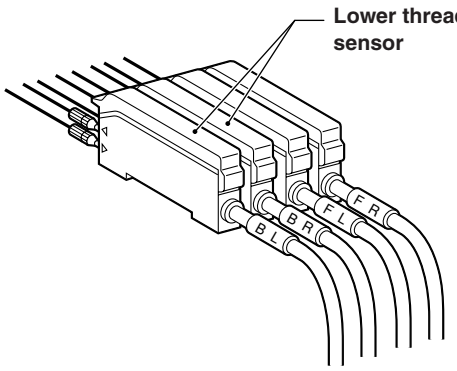
If required, loosen the bolt and adjust the direction of rotation.

8. Adjustment of the lower thread detection sensor (option)

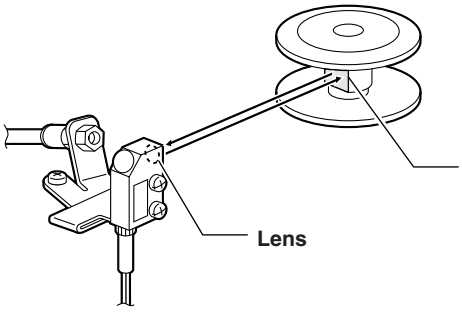
The lower thread detection sensor detects the amount of remained threads through the light amount emitted through the lens and reflected from the reflection panel on the bobbin shaft. Proceed the following steps for maintenance.



1506S



1507S

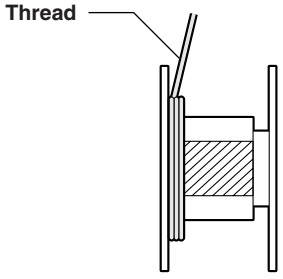


1508S

1. **Clean waste thread and dust around the lens weekly with an air with the slide panel dismounted.**

2. **If dust does not come off from the lens using an air, wipe the lens with a dry and soft cloth.**

8-1. How to wind the lower thread



1509S

(Note) Be sure to wind the thread either right or left end of the groove. Winding from the center can not guarantee the precise detection of remaining amount of threads.

8-2. How to set the detection sensitivity

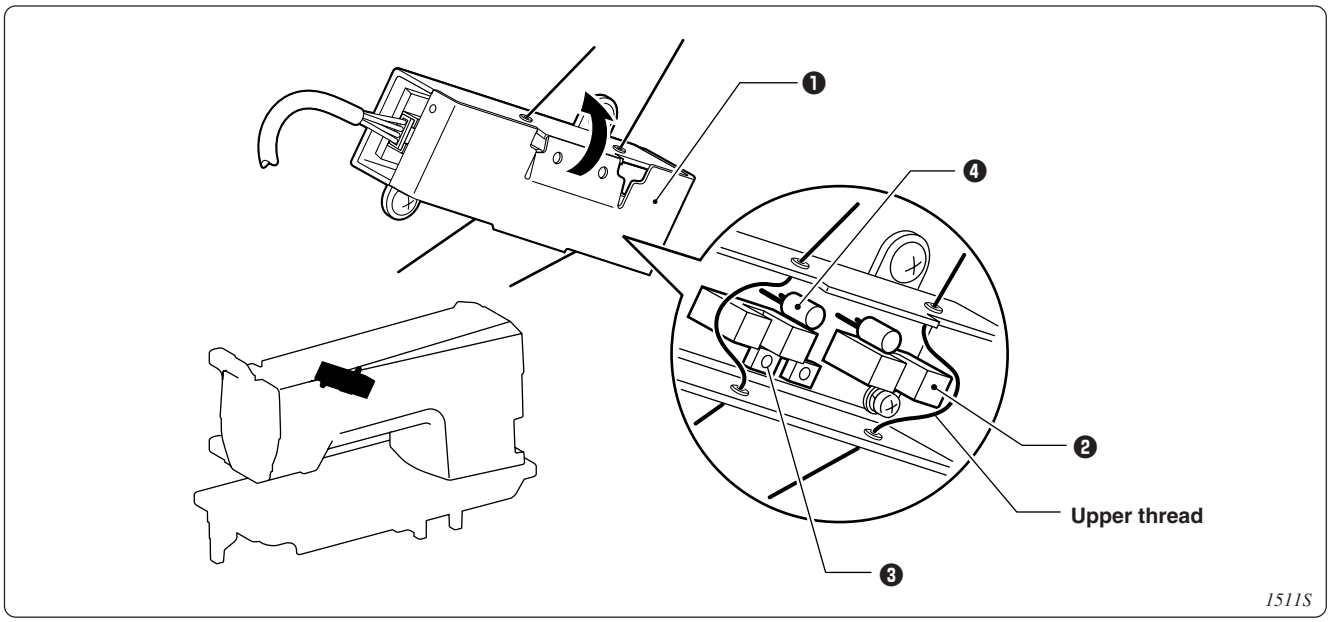
8-2-1. Threshold value setting

Refer to "7-2-1. Threshold value setting"

8-2-2. How to insert the fiber

Refer to "7-2-2. How to insert the fiber"

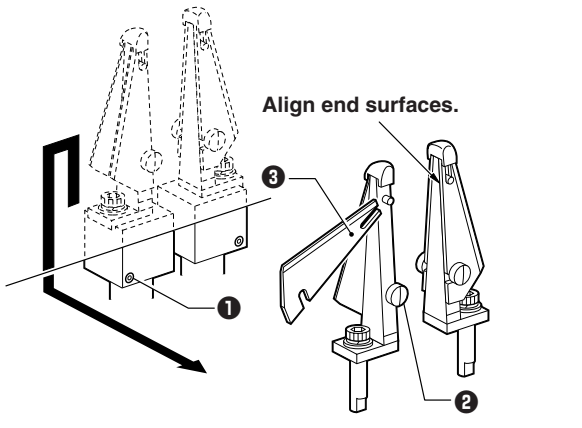
9. Adjustment of the upper thread breakage sensor (option)



1. **Turn on the power supply.**
2. **Open lid ❶ for the upper thread breakage sensor box.**
3. **Detach upper threads on both sides from photo sensor ❷.**
4. **Rotate volume ❸ on the left clockwise until LED ❹ on the left turns on.**
5. **Rotate volume ❸ on the left counter-clockwise until LED ❹ on the left turns off.**
   The adjustment of the sensor on the left is completed with steps above.
6. **The sensor on the right is adjusted with same steps as those of 4 and 5 above.**
7. **Let the upper thread pass through between photo sensors.**
8. **Close lid ❶ for the upper thread breakage sensor box.**

Chapter 6 Knife replacement

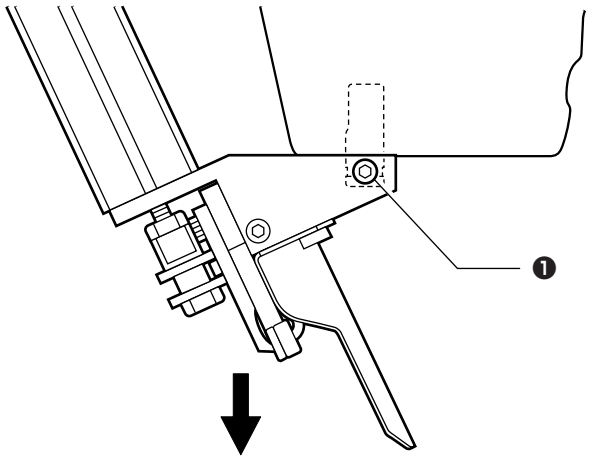
1. Corner knife



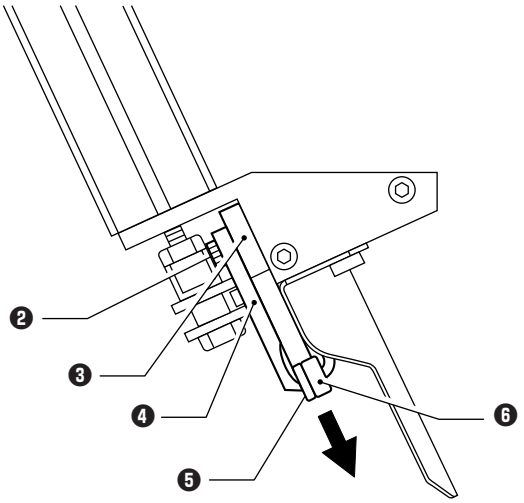
1. **Turn off the power supply.**
2. **Loosen the setscrew ❶ to remove the knife base.**

   (Note) Be careful not to cut yourself on the finger with a corner knife.
3. **Loosen screw ❷ and replace corner knife ❸. Fix the corner knife ❸ aligning its end surface with that of the knife base.**

2. Upper thread trimming knife



1512S



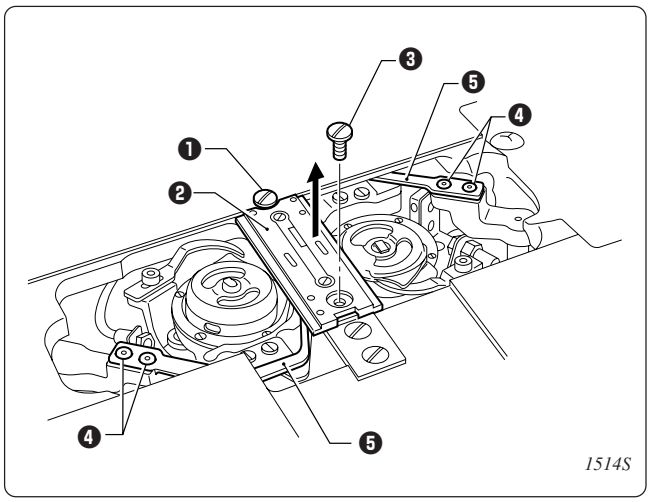
1513S

1. **Turn off the power switch after the air cock is closed and air pressure is confirmed to be [0].**
2. **Detach the upper thread trimmer device by loosening setscrew ❶ and pull down the device.**
3. **Unscrew bolt ❷.**
4. **Detach fixed knife ❹, moving knife ❺, upper knife guide ❸, and thread retention plate ❻ by pulling upper knife guide ❸ forward or backward.**

* **For attachment after replacement, follow above steps the other way around from 4 to 1.**

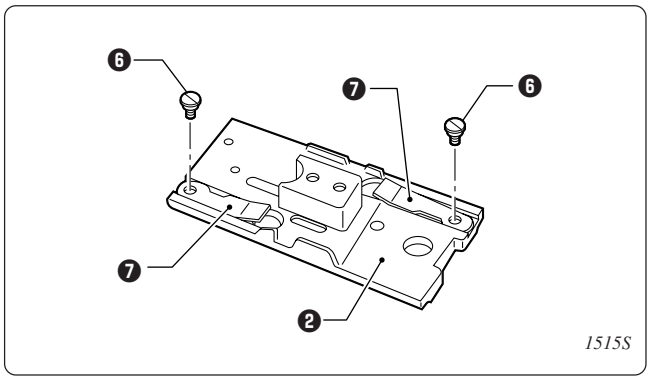
3. Lower thread trimming fixed knife and movable knife

3-1. How to dismount the fixed and movable knife



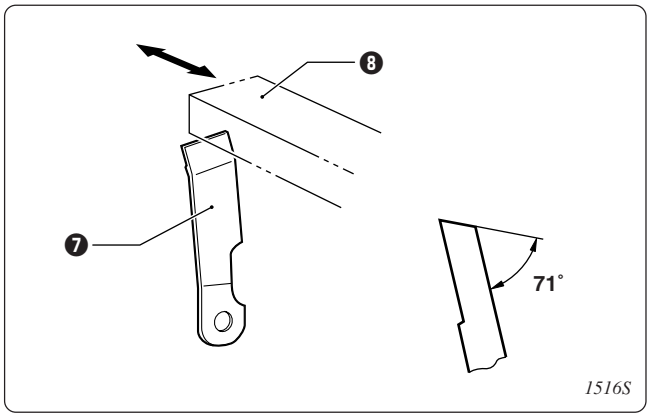
1. **Open the cloth slide plate.**
2. **Loosen setscrew ❶.**
3. **Detach setscrew ❸ of needle plate ❷ and dismount of needle plate ❷.**
4. **Unscrew setscrew ❹ and dismount movable knife ❺.**

   (Note) Dismount movable knife ❺ so as not to damage the top edge.



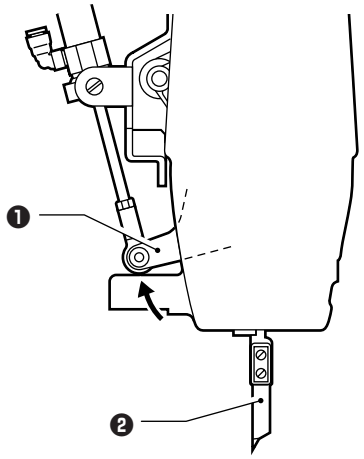
5. **Unscrew shoulder screw ❻ and detach fixed knife ❼ from needle plate ❷.**

3-2. How to sharpen the fixed knife

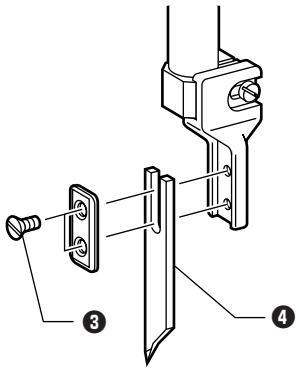


- **Sharpen fixed knife ❼ with oil whet stone ❽ as illustrated when cutting gets uneasy.**
- **Movable knife ❺ can not be sharpened with regular whet stones. Replace it with new one when the cutting gets uneasy.**

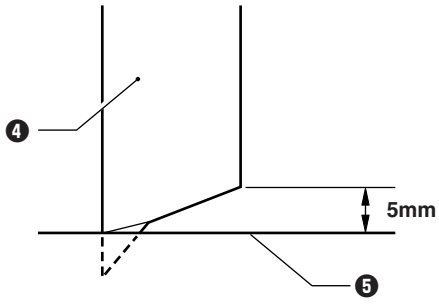
4. Center knife (Upper knife)



1517S



1518S



1519S

1. **Turn off the power switch after the air cock is closed and air pressure is confirmed to be [0].**

2. **Let middle knife drive connecting rod ❶ go up.**

   (Note) Be careful of descent of upper knife ❷.

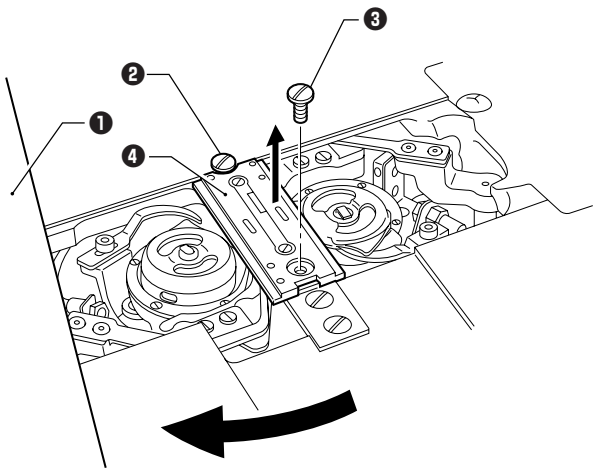
3. **Loosen flat head screw ❸ and replace upper knife ❹ with new one.**

   (Note) Press the upper knife to the deepest position for attachment.

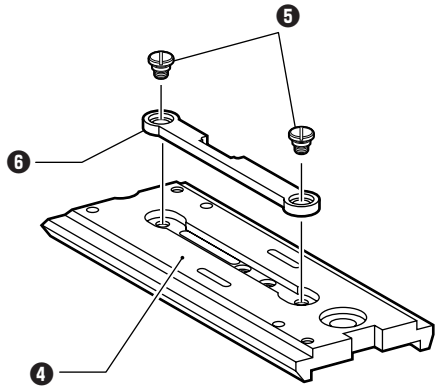
4. **Rotate the upper shaft pulley and confirm the upper knife ❹ goes up 5 mm high from needle plate ❺ when the upper knife reaches to the highest point.**

5. Center fixed knife

5-1. How to dismount the fixed knife



1520S

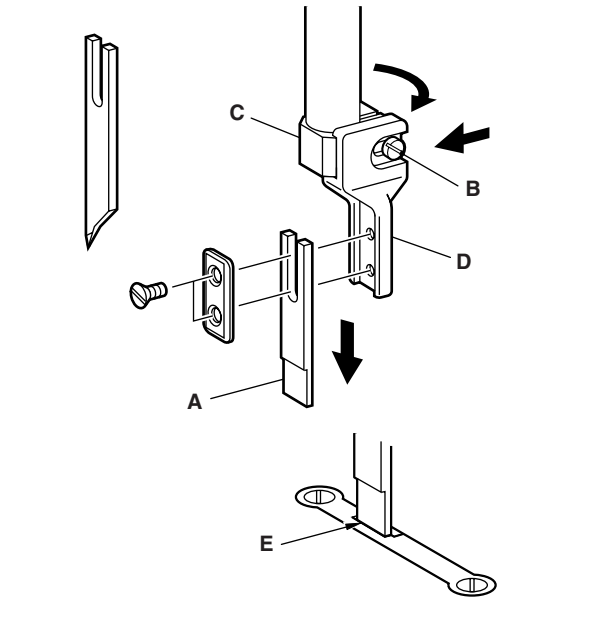


1521S

1. **Turn off the power supply.**
2. **Open cloth slide plate ❶.**
3. **Loosen setscrew ❷ at the rear end.**
4. **Unscrew setscrew ❸ at near end and detach needle plate ❹.**
5. **Unscrew shoulder screws ❺ and detach fixed knife ❻ from needle plate ❹.**

* **For attachment after replacement, follow above steps the other way around from 5 to 1.**

5-2. Position adjustment of the center knife (upper knife) and fixed knife



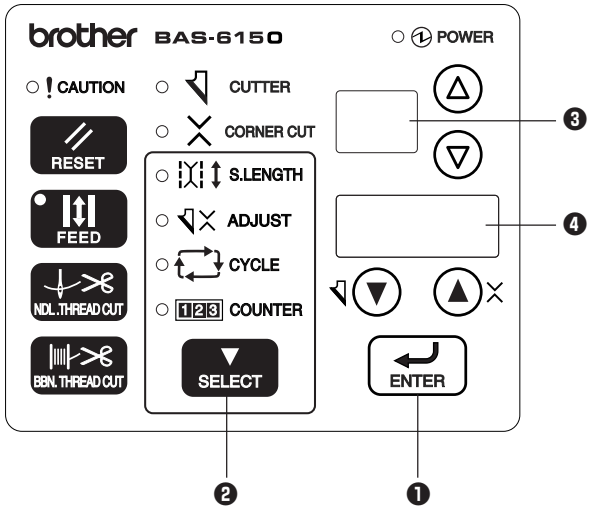
1583S

1. **Replace the center knife with the center knife jig A (accessory).**
2. **Loosen the screw B and rotate the pulley to descend the center knife jig A.**
3. **Rotate C and slide D. Press the center knife jig A and the fixed knife together tightly in the E plane and fasten the screw B, holding the pressed condition.**

Chapter 7 Environment setting

Settings are performed as for the basic contents required to use this machine. These settings include functions for checking which are not used in normal operation.

1. Environment parameter setting



Contents of each environment parameter can be changed.

1. **Set the power supply switch to ON and press the start switch to detect the home position.**
2. **The mode is set to be the setting mode by pressing the "SELECT" key ❷ with the "ENTER" key ❶ pressed.**

   * Environment parameter Nos. are displayed in the program No. display window ❸ to illuminate (a dot at lower and right side distinguishes the environment parameter No. from the parameter No. [Chapter 3. Setting]) and the contents of environment parameters is displayed in the contents display window ❹ to blink. (Display and contents are displayed alternately.)

3. **Press ∆∇ key to change the environment parameter No.**
4. **Press ▲▼ key to change the contents. Return to step 3 if you have other environment parameters to change.**
5. **Press the "ENTER" key ❶ to memorize the changed contents.**

List of environment parameters

NO.	Item	Display	Contents (configurable values)	Initial value
0	Needle gauge	GAUG GAUG	8, 10, 12, 14, 16, 18, 20 (22, 24, 26) mm (2mm pitch) Be sure to confirm the right kind of corner knife is used after setting change. (Refer to the Table 1.)	12
1	Edge clearance of corner knives	CORL CorL	10 to 300 Corner knife edge clearance at the time of home position detection. (Automatic update is performed by setting the needle gauge. Refer to the Table 2.)	—
2	Corner knife position	CORP CorP	0 to 465.0 mm Distance between the needle drop position and the corner knife front end. (Automatic update is performed by setting the needle gauge. Refer to the Table 2.)	—
3	Standby timer after the corner knife up	CRUW CrUW	0.0 to 9.9 sec (in the unit of 0.1 sec) Standby time from the corner knife ON to OFF.	0.2
4	Standby timer after the corner knife down	CRDW CrdW	0.0 to 9.9 sec (in the unit of 0.1 sec) Standby time from the corner knife OFF to the presser UP.	0.2
5	Automatically down after the presser moves to the cloth set position	PSAD PSAd	"OFF" oFF "ON" on	OFF oFF
6	Timer for afrautomatically standby for down ON time after the presser moves to the cloth set position	PDAW PdAW	0.0 to 9.9 sec	0.3
7	Timer for the next movement after the carriage feed down	PDAN PdAn	0.0 to 9.9 sec	0.0
8	Movement speed to the cloth set position	SETS SEtS	15 to 45m/min (5m/min pitch)	30
9	Movement speed to the stacker position	STKS StkS	15 to 40m/min (5m/min pitch)	30
10	Movement speed to the standby position	DWLS dWLS	15 to 40m/min (5m/min pitch)	30
11	Movement speed to the feed position	ENDS EndS	15 to 40m/min (5m/min pitch)	30
12	Center knife offset - start of sewing correction	CTOS CtoS	-9.9 to 9.9mm (in the unit of 0.1 mm)	0.0

NO.	Item	Display	Contents (configurable values)	Initial value
13	Center knife offset - end of sewing correction	CTOE CtoE	-9.9 to 9.9mm (in the unit of 0.1 mm)	0.0
14	Corner knife home position detection	CROD Crod	To be detected only for power on and emergency stop "OFF" oFF To be detected for every sewing "ON" on	ON on
15	Corner knife offset - start of sewing correction	CROS CroS	-9.9 to 9.9mm (in the unit of 0.1 mm)	0.0
16	Corner knife offset - end of sewing correction	CROE CroE	-9.9 to 9.9mm (in the unit of 0.1 mm)	0.0
17	Start switch allocation	SSAS SSAS	Right foot switch "--□" --0 Center foot switch "-□-" -0- Setting is performed as for which foot switch should be functioned as a start switch.	--□ --0
18	Steps start	ST2S St2S	"OFF" oFF Operation stops at the needle down position after feeding and sewing starts again when the start switch is set to ON.(for confirmation of the cloth guide)	OFF oFF
19	Auto start	AUTS AUtS	"OFF" oFF Set auto start to "ON" on in certain time after the last presser goes down.	OFF oFF
20	Standby time for the start of sewing	STRW StrW	0.0 to 99 second(s) Setting is performed as for how many seconds later sewing is to start when the auto start is ON and when the start switch is pressed.	0.0
21	Foot switch operation	FTSW FtSW	Step "OFF" oFF Timer (programmable) "ON" on	OFF oFF
22	Settings for the foot switch timer	FTPG FtPG	"OFF" oFF "ON" on Setting is performed for operation interval by setting the display to ON and with operation of the foot switch.	OFF oFF
23	Distance to start releasing the upper thread retention	UTRL UtrL	0 to 30 mm (in the unit of 1 mm) Distance from the start of sewing to the start of releasing the upper thread. When the distance is set to 0, the upper thread is released before the machine rotates. This function can works when the upper thread is stitched in at the start of sewing. The end of releasing is operated by the timer. No.24	10
24	Upper thread retention releasing time	UTRT UtrT	0.005 to 0.1 second Releasing time of the upper thread retention.	0.020
25	Upper thread trimming knife descent timing	UTDL UtdL	0 to 50 mm (in the unit of 1 mm) Distance from the end of sewing to the start of the upper thread's descent. (This setting is performed to adjust the amount of the remained upper thread.)	30

NO.	Item	Display	Contents (configurable values)	Initial value
26	Lower thread last stitch trimming	BTFC btFC	Not trimmed "OFF" oFF Trimmed "ON" on Selection is made to decide the lower thread be cut at the last stitch. When set to OFF, the lower thread is trimmed as the clamp is moving to the corner knife position.	ON on
27	Distance to operate the lower thread knife	BTCL btCL	0 to 70 mm Distance from the end of sewing to the lower thread knife's operation when [No. 26 The last stitch trimming] is set to OFF. The lower thread is trimmed as the clamp is moving to the corner knife position.(This setting is performed to adjust the amount of the remained lower thread.)	0
28	Folding plate ON timing	FOLT FoLt	0.0 to 9.9 second(s) Time from T-gauge descent to the folding plate ON when the cloth setting is performed.	0.1
29	Standby timer after the folding plate ON	FOLW FoLW	0.0 to 9.9 second(s) Time for the start of next operation after the folding plate ON.	0.2
30	Folding plate operation at single welting	WSWF WSWF	Not used "OFF" oFF Only left used "L" L Only right used "R" r Both used "LR" Lr	L L
31	Setting for the roller cloth sensor	RLSE rLSE	Not used "OFF" oFF Used "ON" on Setting is performed as to stop the operation by the cloth sensor at the time of roller driving. The direction of rotation is specified by symbols for the roller driving distance.	—
32	Roller cloth sensor operation	RLSM rLSM	The roller stops with OFF → ON (ON edge). "ON__" on__ The roller stops with ON → OFF (OFF edge). "OFF__" oFF_ These are conditions to top the roller when the roller cloth sensor is used.	ON__ on__
33	Time to rotate after the roller down	RLDT rLdt	0.1 to 9.9 second(s)	0.5
34	Time to go up after the roller stops rotating	RLUT rLUt	0.1 to 9.9 second(s)	0.5
35	Operation after the thread breakage	ATBM AtbM	Immediate stop "0" Stop at the end of sewing position "1"	1
36	Timer for standby time after the flap clamp ON	FPOW FPoW	0.1 to 9.9 second Standby time for the start of the clamp's movement after the flap clamp ON.	0.2
37	Flap sensor and needle drop distance - start of sewing	FPSS FPSS	30.0 to 40.0mm	35.0

NO.	Item	Display	Contents (configurable values)	Initial value
38	Flap sensor and needle drop distance - end of sewing	FPSE FPSE	30.0 to 40.0mm	35.0
39	Setting for lower thread volume detection	BTRM btrn	Not used, "OFF" oFF Used "ON" on (remained volume automatic sensing)	—
40	Stacker operation mode	STKM StYn	0 to 9 (The number varies with the kind of stackers.)	0
41	Stacker operation timer 1	STK1 StY1	0.0 to 9.9 second(s) (Refer to the Table 3 for initial values.)	
42	Stacker operation timer 2	STK2 StY2	0.0 to 9.9 second(s) (Refer to the Table 3 for initial values.)	
43	Stacker operation timer 3	STK3 StY3	0.0 to 9.9 second(s) (Refer to the Table 3 for initial values.)	
44	Stacker operation timer 4	STK4 StY4	0.0 to 9.9 second(s) (Refer to the Table 3 for initial values.)	
45	Stacker operation timer 5	STK5 StY5	0.0 to 9.9 second(s) (Refer to the Table 3 for initial values.)	
46	Stacker operation timer 6	STK6 StY6	0.0 to 9.9 second(s) (Refer to the Table 3 for initial values.)	
47	Stacker operation timer 7	STK7 StY7	0.0 to 9.9 second(s) (Refer to the Table 3 for initial values.)	
48	Stacker operation timer 8	STK8 StY8	0.0 to 9.9 second(s) (Refer to the Table 3 for initial values.)	
49	T-gauge ascent timing	BNDU bndU	0 to 100 mm The distance between the reference mark after clamping and the needle drop position with T-gauge up.	30
50	Standby position	DWLP dWLP	0 to 465mm The distance between the reference mark after clamping and the home position at the standby position.	340
51	Feed position	ENDP EndP	340 to 465 mm The distance between the reference mark after clamping and the needle drop position at the feed position.	465
52	Stacking position	STKP StYP	340 to 465 mm The distance between the reference mark after clamping and the home position at the stacking position.	425
53	Test sewing speed	MTSP MtSP	200, 500, 800, 1000, 1200, 1500, 1800, 2000, 2200, 2500, 2800, 3000 rpm	1000
54	Center knife setting during the machine test	MTCT MtCt	"OFF" oFF "ON" on	OFF oFF

NO.	Item	Display	Contents (configurable values)	Initial value
55	Machine test repetition number	MTRE MtrE	0 to 999 These numbers. specify the machine test repetition Nos.. Continuous operation is performed at 0.	10
56	Machine operation time	MTON Mton	1 to 99 These numbers specify the time of machine rotation during the machine test.	5
57	Machine stop time	MTOF MtoF	0 to 99 These numbers specify the time of machine stoppage during the machine test. (0 is not stop)	2
58	Machine test mode	MTST MtSt	"OFF" oFF "ON" on Press the start switch to start the test with the display "ON". Press the "RESET" key to stop the machine.	OFF oFF
59	Unuse			
60	Unuse			
61	Memory switch 1	SW1 Sw1	After the power supply is set to ON, the center knife moves up and down once when the initial home position detection is performed.* Not used "OFF" oFF Used "ON" on	OFF oFF
62	Memory switch 2	SW2 Sw2	Display timing of the error message; "The face is open." "OFF" oFF is displayed when the face is opened. "ON" on is displayed when the feeder is going to move with the face opened.	OFF oFF
63	Memory switch 3	SW3 Sw3	How to operate the movement from the feed position to the standby position(for preventing the misoperation). "OFF" oFF is displayed when the "FEED" key is pressed. "ON" on is displayed when the "ENTER" key is pressed with the "FEED" key being pressed.	OFF oFF
64	Memory switch 4	SW4 Sw4	Carriage feed shift mode during operation with a stacker (for preventing it from pinching cloth.). Carriage feed starts to shift after cloth is pressed: "OFF" oFF Carriage feed starts to shift after cloth is discharged: "ON" on	OFF oFF
65	Memory switch 5	SW5 Sw5	Binder up in detecting home position(for preventing the carriage feed interference during operation with a 8mm gauge.). Not used: "OFF" oFF Used: "ON" on	OFF oFF
66-76	Memory switch 6-16	SW6-16	Unuse	

*** When the setting for the memory switch 1 (environment parameter No. 61) is set to ON and the home position is to be set , the center knife moves up and down. Be careful in order not to be injured and not to put cloth and the like around the knife.**

Table 1. Settings for the standard gauge (fixed type corner knife edge base)

Gauge	Kind of corner knife edges	Minimum sewing distance with the center knife OFF	Minimum sewing distance with the center knife ON	Edge clearance at the time of corner knife home position detection	Clearance between the needle drop position and the front end of corner
8	S	15	30	53.8	129.1
10					
12					
14					
16	L	38	38	61.7	125.1
18					
20					

(mm)

Table 2. Settings for options (adjustment type corner knife edge base)

Gauge	Kind of corner knife edges	Minimum sewing distance with the center knife OFF	Minimum sewing distance with the center knife ON	Edge clearance at the time of corner knife home position detection	Clearance between the needle drop position and the front end of corner
8	A	15	29	26.6	140.7
10				25.6	141.2
12				24.3	141.9
12	B			32.9	137.6
14				31.8	138.1
16		38	38	30.5	138.8
18	C			42.9	132.6
20				41.8	133.1
22	D	50	50	53.2	127.4
24				52.1	127.9
26				51.0	128.5

(mm)

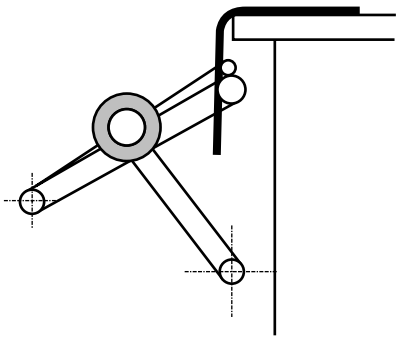
Table 3. Initial values for the stacker operation timer

Kind	Stacker operation mode	STEP1	STEP2	STEP3	STEP4	STEP5	STEP6	STEP7
Standard bar stacker (option)	—	0.0	0.5	0.4	0.6	—	—	—
High-feature bar stacker (option)	0	0.0	0.6	0.5	0.3	0.5	0.5	0.7
	1	0.0	0.5	0.3	0.8	0.5	1.0	—

(Second)

(Standard stacker 4 steps)

0



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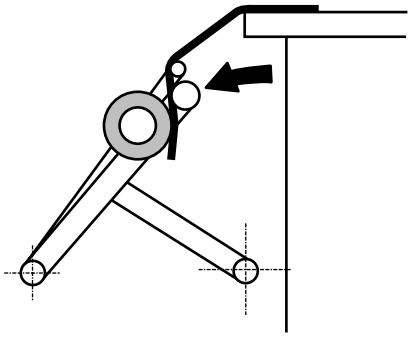

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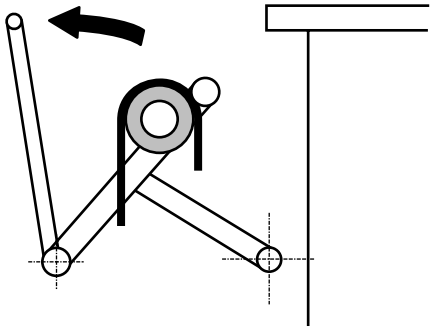

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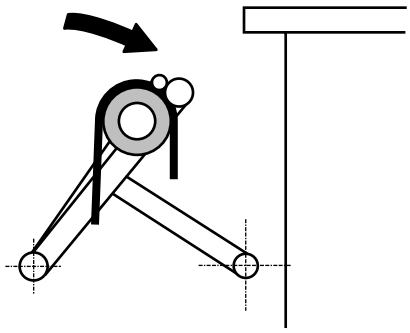

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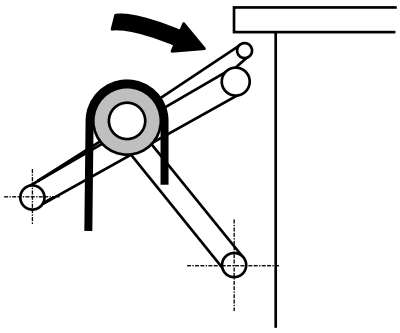
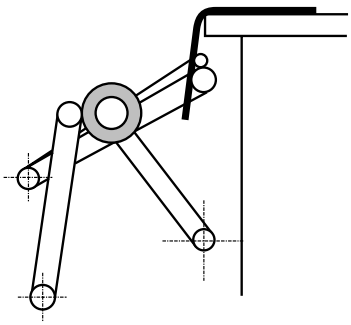


1530S

(High-feature stacker Mode 0: 7 steps)

0



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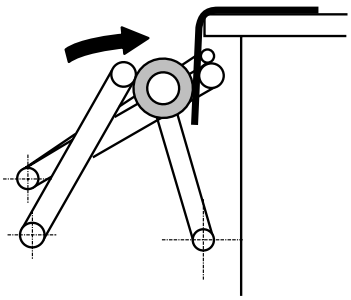

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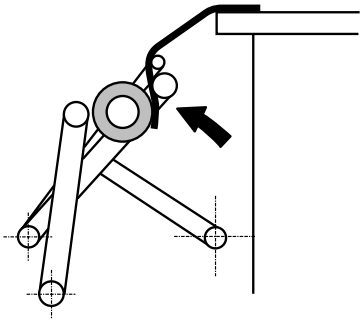

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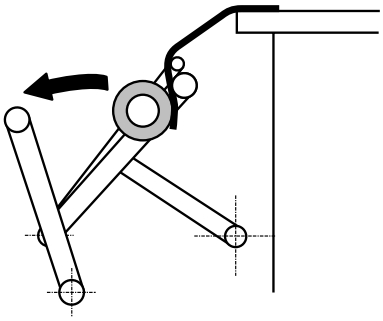

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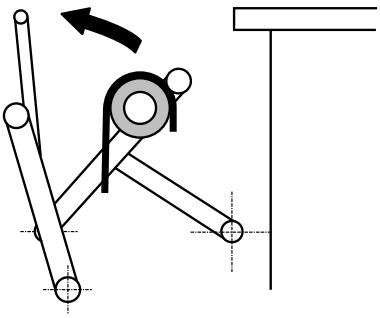

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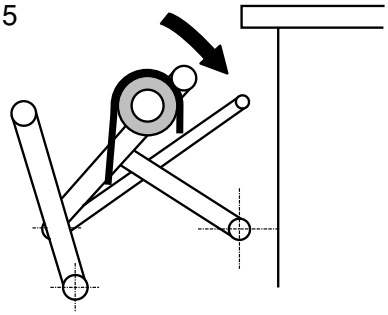

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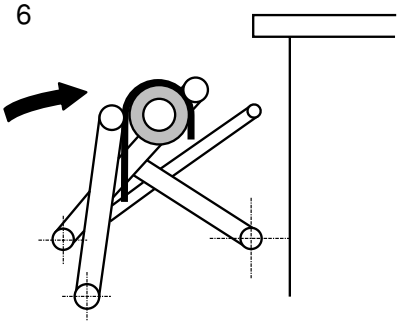

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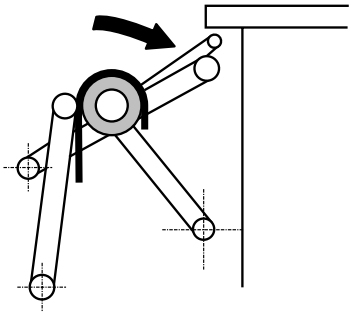
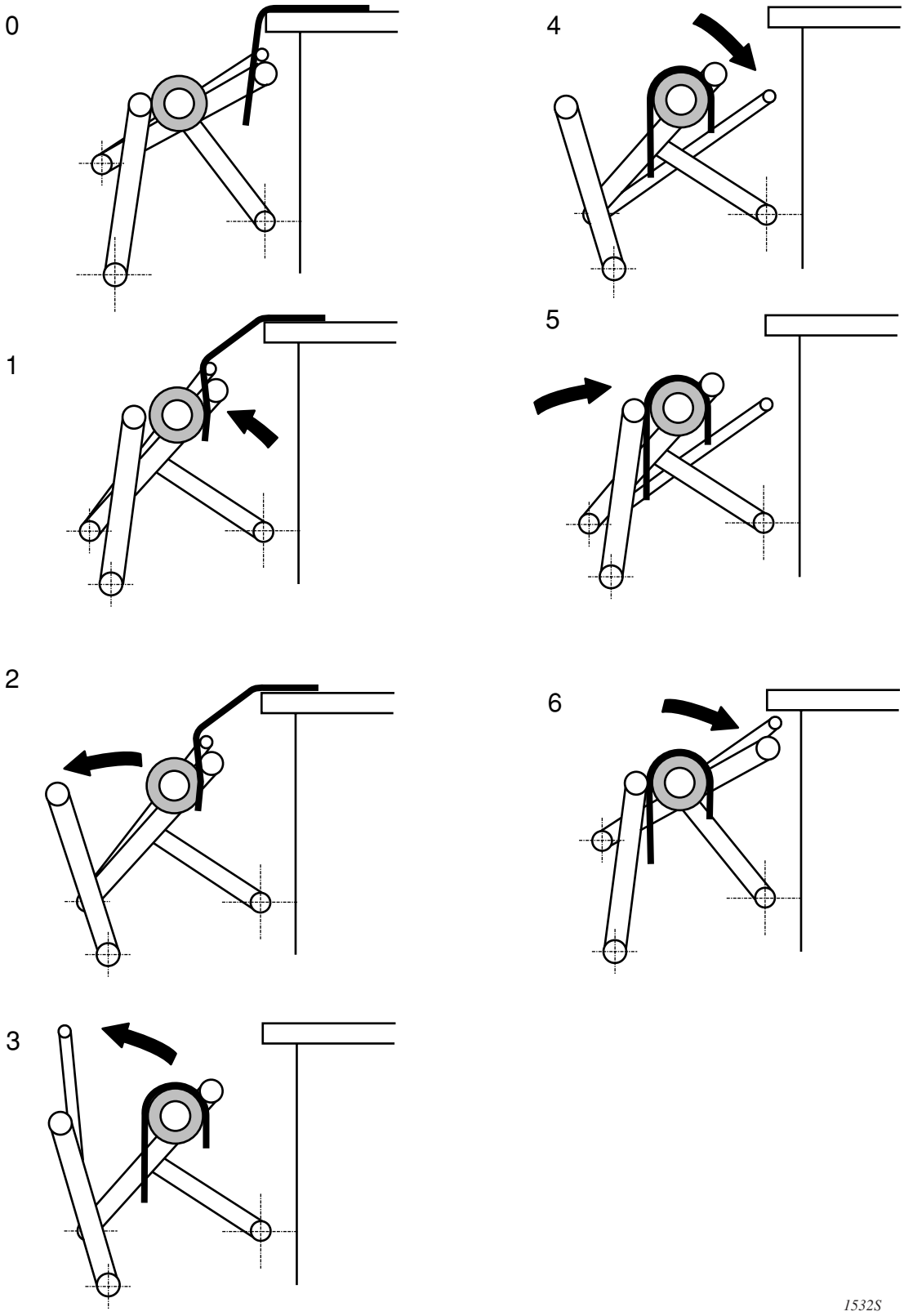


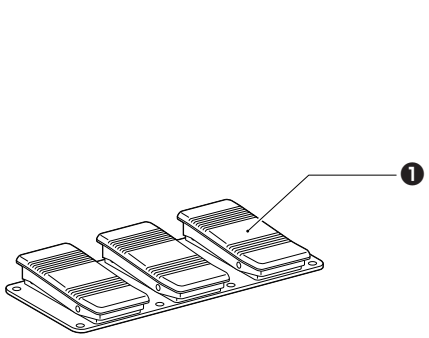
1531S

(High-feature stacker Mode 1: 6 steps)

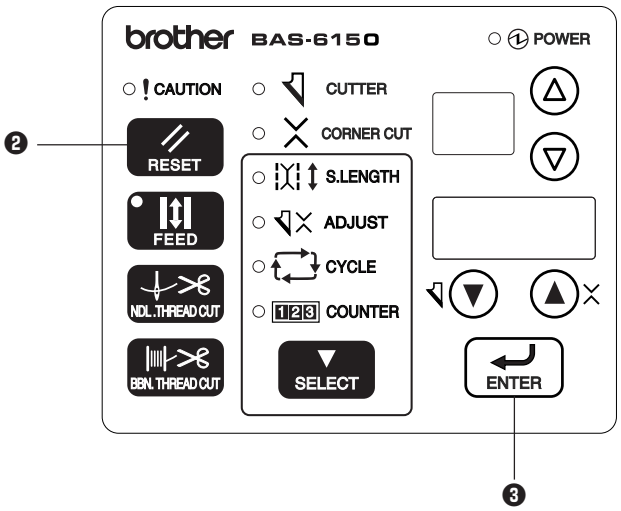


1532S

2. Machine test mode



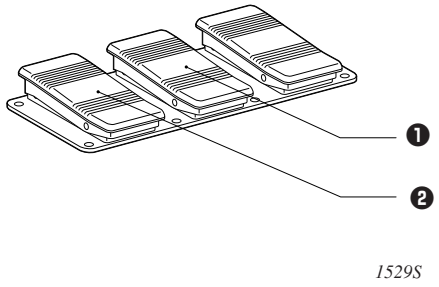
1463S



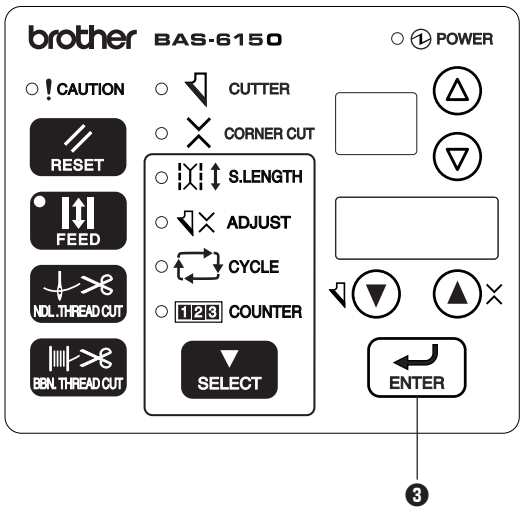
1457S

1. **Settings are performed as for [No.53 Machine test rotation number], [No.54 Center knife setting at machine test], [No. 55 Machine test repetition number], [No.56 Machine operation time], and [No.57 Machine stop time] in environment parameter setting.**
2. **Likewise, change the contents of environment parameter of [No.57 Machine test mode] to ON DISPLAY.**
3. **With that condition, press the start switch ❶ and then the machine starts to operate.**
   The "ENTER" key ❸ is not pressed
4. **Press the "RESET" key ❷ and then the machine stops to end the machine test mode.**
5. **Press the "ENTER" key ❸ to end the environment parameter setting.**

3. Foot switch timer setting



1529S



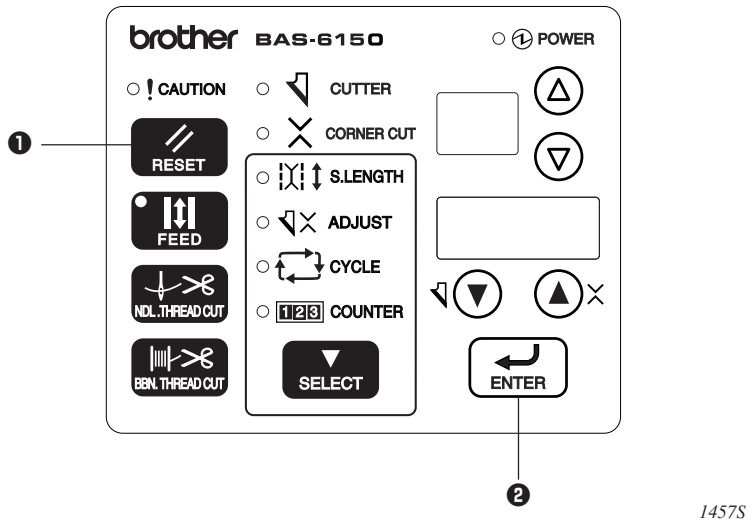
1457S

If the forward switch ❶ is continued to be pressed at sewing, the clamp can be continued to operate in a specified interval.

1. **In environment parameter setting, the contents of the parameter for the foot switch timer setting (No. 22) is changed to the ON display.**
2. **With that condition , press the forward switch ❶ and the mode is changed to the setting mode.**

   The "ENTER" key ❸ is not pressed.
3. **Press the forward switch ❶ to move the clamp in the specified order. The interval of each operation is memorized. Pressing the backward switch ❷ returns one step of operation.**
4. **Press forward switch ❶ to descend all clamps.**
5. **Contents of the parameter of [No.21 Foot switch operation] is set to ON display.**
6. **Press the "ENTER" key ❸ and the environment parameter setting is ended.**

4. Operation test for the stacker and roller



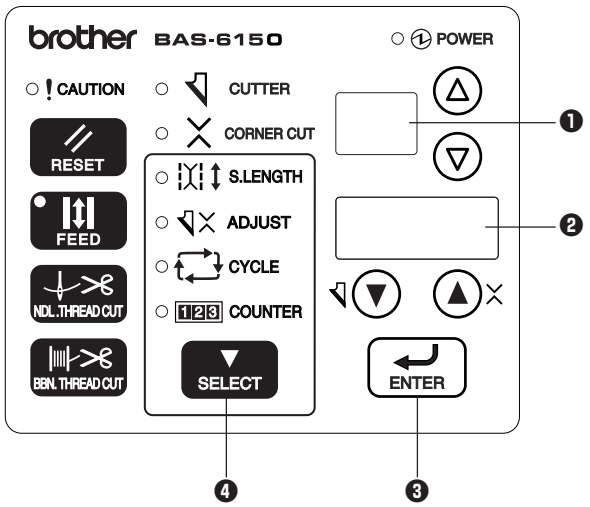
1. **Contents of bar stacker environment parameters (No.40 -48) or roller stacker environment parameters (No.31-34) are set to [In Setting] in environment setting.**

2. **With that condition retained, press "RESET" key ❶ and the bar stacker or the roller stacker operates independently as specified by the contents of setting.**

   The "ENTER" key ❷ is not pressed.

3. **Press the "ENTER" key ❷ to end the environment setting.**

5. Sensor check



The items as shown below can be checked:

Sensor and switch
DIP switch
Voltage of 210 V and 55 V
Voltage of 30 V and 24 V

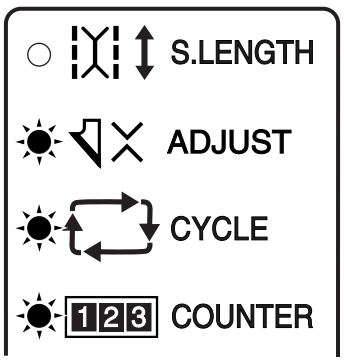
1. **Set DIP switch B6 (refer to [Chapter 8 DIP switch]) to ON.**

2. **Set the power supply switch to ON.**

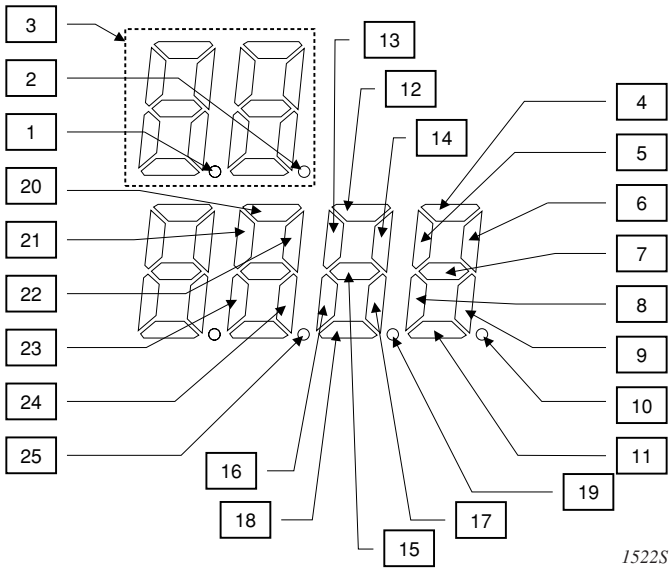
   The start switch is not pressed. When the sensor or the switch is set to ON, the corresponding LEDs in the program No. display window ❶ and contents display window ❷ turn on.

3. **Press the ∆∇ key, ▲▼ key, "ENTER" key ❸, and "SELECT" key ❹ to change items to be checked.**

5-1. Sensor switch



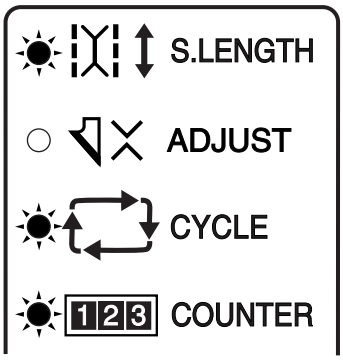
1579S



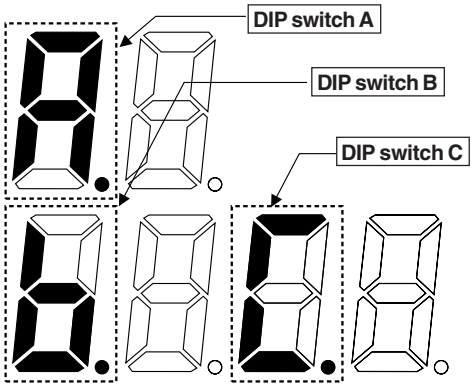
1522S

Display position	Sensor/Switch	ON or OFF right after home position detection
1	Needle up sensor	ON
2	Synchronizer	
3	Synchronizer count	0
4	Emergency stop switch	OFF
5	Emergency stop switch	OFF
6	Emergency stop switch	OFF
7	—	
8	Backward switch	OFF
9	Start switch	OFF
10	Face switch	OFF
11	Forward switch	OFF
12	Feeder home position sensor	OFF
13	Feeder overrun sensor front	OFF
14	Feeder overrun sensor rear	OFF
15	Stacker sensor 1	
16	Flap sensor L	
17	Flap sensor R	
18	Stacker sensor 2	
19	Corner knife home position sensor	ON
20	Roller sensor	
21	Upper thread breakage sensor L	OFF
22	Upper thread breakage sensor R	OFF
23	Lower thread volume sensor L	OFF
24	Lower thread volume sensor R	OFF
25	Servo error	OFF

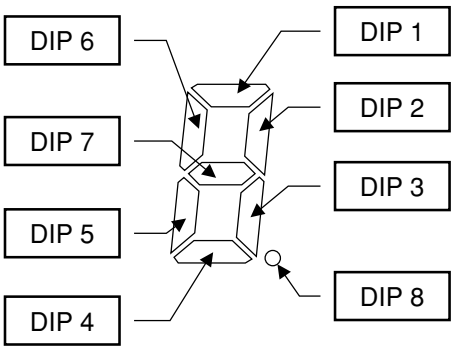
5-2. DIP switch



1580S



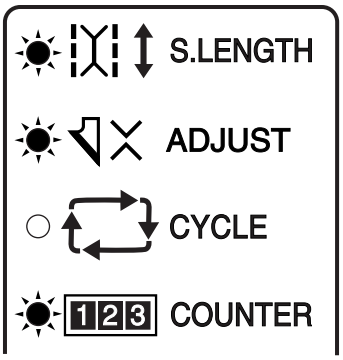
1523S



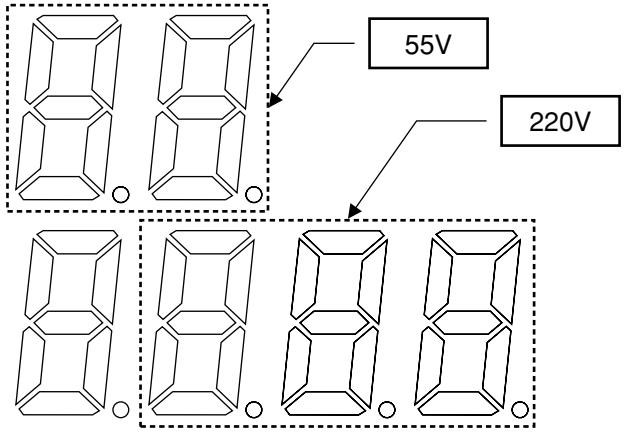
1524S

The corresponding segment lights on when the DIP switch is ON.

5-3. Voltage of 210 V and 55 V



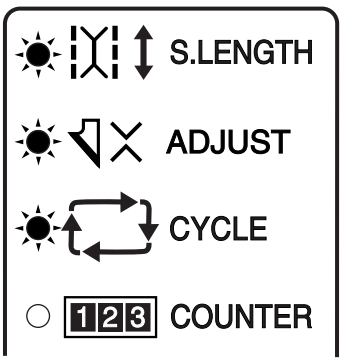
1581S



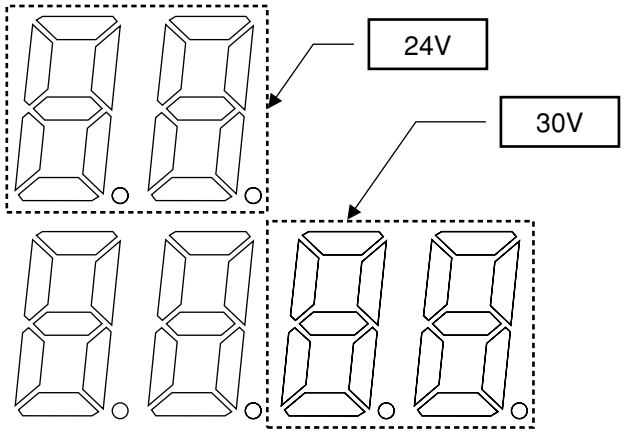
1525S

The voltage is displayed.

5-4. Voltage of 30 V and 24 V



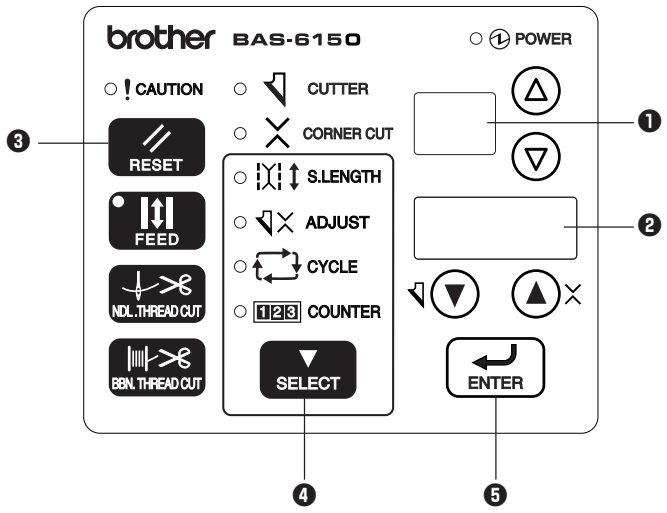
1582S



1526S

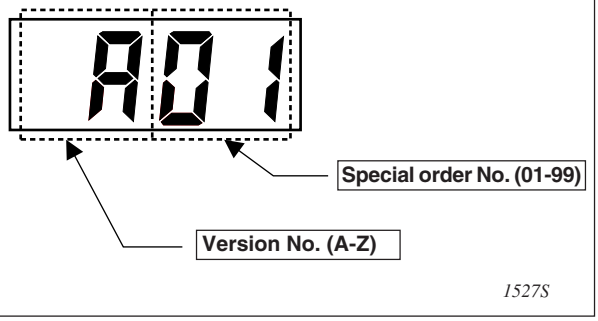
The voltage is displayed.

6. ROM version display



1. **Set the power supply switch to ON with the "RESET" key ❸ pressed.**

2. **Display is performed as shown below.**

Kind of PROM	Lit LED	Program No. display window ❶	Contents display window ❷
PANEL	S.LENGTH	PL	
MAIN	ADJUST	MN	
SEW	CYCLE	SE	
MOTOR	COUNTER	MT	

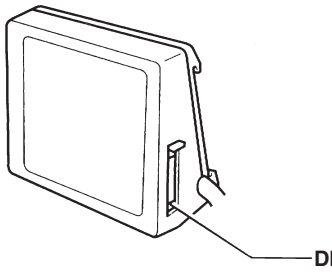
3. **Press the "SELECT" key ❹, "ENTER" key ❺, ∆∇ key, and ▲▼ key to change the kind of PROM to be displayed.**

4. **Press the "RESET" key ❸ and the ROM version display is ended.**

Chapter 8 Dipswitch

DIP-SW A (Control panel)

No	Description	OFF	ON	Initial value
1-7	Unuse	-	-	OFF
8	Program lock	don't	do	OFF



1638S

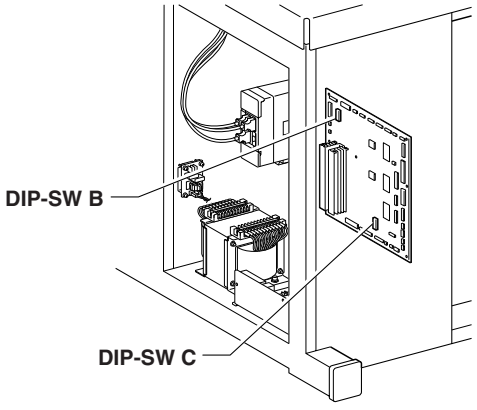
DIP-SW B (Main print circuit board)

No	Description	OFF	ON	Initial value
1	Clamp type setting	standard (220mm)	long (250mm)	OFF
2	Corner knife and base	adjustable	BAS-6150 type	ON
3	Bottom feeder (Option)	unuse	use	OFF
4	—	-	-	OFF
5	—	-	-	OFF
6	Sensor check	don't	do	OFF
7	Feeding sensor adjustment	don't	do	OFF
8	Corner knife sensor adjustment	don't	do	OFF

When both 7 and 8 are set to ON, the following sequence of steps are to be performed.

Memory initialization → Feeding sensor adjustment → Corner knife adjustment

(Note) Be sure to initialize the memory with 7 and 8 ON after the board is replaced.



1528S

DIP-SW C (Main print circuit board)

No	Description	OFF	ON	Initial value
1	—	-	-	OFF
2	—	-	-	OFF
3	—	-	-	OFF
4	—	-	-	OFF
5	Motor error detection	do	don't	OFF
6 7 8	Correction quantity of needle upper stop position (refer to the table below for the setting method.)			OFF

Combination of ON and OFF of DIP SW 6, 7 and 8, set correction quantity of the needle upper stop position. Refer to the table below.

No			Correction quantity
6	7	8	
OFF	OFF	OFF	Initial set value
ON	OFF	OFF	Delay by 1 slit
OFF	ON	OFF	Delay by 2 slits
ON	ON	OFF	Delay by 3 slits
OFF	OFF	ON	Initial set value
ON	OFF	ON	Gain by 1 slit
OFF	ON	ON	Gain by 2 slits
ON	ON	ON	Gain by 3 slits

Chapter 9 Error code List

Error code List

Error Code	Description	Corrective action
E-100	START switch is ON when power is turned on.	Release START switch and press RESET switch.
E-101	FORWARD switch is ON when power is turned on.	Release FORWARD switch and press RESET switch.
E-102	BACKWARD switch is ON when power is turned on.	Release BACKWARD switch and press RESET switch.
E-103	EMERGENCY STOP switch is on when power turned on	Release EMERGENCY STOP switch and press RESET switch.
E-200	Machine motor does not stop at needle up position	Turn the pulley and set the machine at needle up position, and then press RESET switch.
E-201	Needle does not go to up position during feeding	Turn the pulley and set the machine at needle up position, and then press RESET switch.
E-202	Synchronizing sensor malfunction (Synchronizing sensor does not turn on in 1 second after motor starts)	Turn off the power supply.
E-207	Face plate open when machine not operating	Press RESET switch.
E-208	Face plate open during sewing or feeding	Press RESET switch.
E-209	Face plate open during feeding	Press RESET switch and set the position.
E-210	Machine motor rotation error	Turn off the power supply.
E-211	Machine motor power supply voltage (300 V) is abnormal	Turn off the power supply.
E-212	Abnormal power supply PCB IPM	Turn off the power supply.
E-213	Abnormal power supply PCB relay	Turn off the power supply.
E-220	Machine motor rotation error (fault in pulsing of the feed motor)	Turn off the power supply.
E-300	Carriage feed home position detection error	Turn off the power supply.
E-301	Carriage feed has overrun forward	Turn off the power supply.
E-302	Carriage feed has overrun backward	Turn off the power supply.
E-303	Abnormal carriage feed motor	Turn off the power supply.
E-400	Right flap front edge detection error	Press RESET switch.
E-401	Left flap front edge detection error	Press RESET switch.
E-402	Front edge of right flap could not be detected	Press RESET switch.

Error Code	Description	Corrective action
E-403	Front edge of left flap could not be detected	Press RESET switch.
E-404	Back edge of right flap could not be detected	Press RESET switch.
E-405	Back edge of left flap could not be detected	Press RESET switch.
E-500	EMERGENCY STOP switch pressed	Press RESET switch.
E-501	EMERGENCY STOP switch pressed during sewing	Press RESET switch.
E-502	EMERGENCY STOP switch not connected	Confirm the emergency stop switch is connected. Turn off the power supply.
E-503	EMERGENCY STOP switch pressed during feeding	Press RESET switch.
E-550	Abnormal voltage in 24 V system	Check the voltage and turn off the power supply.
E-551	Abnormal voltage in 30 V system	Check the voltage and turn off the power supply.
E-552	Abnormal voltage in 55 V system	Check the voltage and turn off the power supply.
E-553	Abnormal rise in primary power supply voltage	Check the voltage and turn off the power supply.
E-554	Abnormal drop in primary power supply voltage	Check the voltage and turn off the power supply.
E-580	Main PCB heat sink cooling fan has stopped	Turn off the power supply.
E-600	Right and left upper thread breakage	Press RESET switch.
E-601	Right upper thread breakage	Press RESET switch.
E-602	Left upper thread breakage	Press RESET switch.
E-700	No main ROM	Turn off the power supply.
E-701	No sewing ROM	Turn off the power supply.
E-702	No machine motor ROM	Turn off the power supply.
E-703	Abnormal of CPLD for IM	Turn off the power supply.
E-710	Memory read/write error	Turn off the power supply.
E-711	Program data corrupted	Press RESET switch.
E-712	Cycle program data corrupted	Press RESET switch.
E-713	General parameter corrupted	Press RESET switch.
E-714	Counter data corrupted	Press RESET switch.
E-720	Main PCB communication error	Press RESET switch.
E-721	Panel PCB communication error	Press RESET switch.
E-722	Sewing PCB communication error	Press RESET switch.
E-723	Main PCB communication error	Press RESET switch.
E-724	Motor PCB communication error	Press RESET switch.

Error Code	Description	Corrective action
E-725	Sewing PCB communication error	Press RESET switch.
E-726	External communication error	Press RESET switch.
E-730	Input No of seam length is too short	Press RESET switch. Extend seam length.
E-731	Input No of seam length is too long	Press RESET switch. Shorten seam length.
E-732	Sewing data error (sewing is not possible sewing data setting)	Press RESET switch. Change setting data.
E-733	Flap sewing data error (data correction is not possible after sensing flap rear edge)	Press RESET switch. Reset the position to place the flap further to the rear edge.
E-734	Data created caused feed mechanism to make an end overrun	Press RESET switch. Change setting data.
E-800	Corner knife home position detection error	Turn off the power supply.
E-801	Corner knife motor over current error	Turn off the power supply.
E-802	Corner knife operation error	Turn off the power supply.
E-999	Internal processing error	Turn off the power supply.

Chapter 10 Troubleshooting

Reference table in trouble

Trouble	Check and corrective action
Upper thread breakage	• Is the needle bend ? Is the needle point crushed ? → Replace the needle with new one. • Is the needle correctly attached ? → Attach the needle correctly. • Is the threading correctly performed ? → Refer to "How to thread the upper thread". • Is the tension of upper thread too strong ? → Adjust the upper thread to correct tension. • Is the clearance between the rotary hook and bobbin case opener correctly adjusted ? → Refer to "Timing adjustment of needle and rotary hook". • Is the timing of needle and rotary hook correctly adjusted ? → Refer to "Timing adjustment of needle and rotary hook".
Lower thread breakage	• Is the threading correctly arranged ? → Refer to "How to thread the lower thread". • Is the tension of lower thread correctly adjusted ? → Adjust the lower thread to correct tension. • Is oil or waste thread stuck to the bobbin case ? → Get rid of waste thread or wipe put oil.
Uneven stitch	• Is the needle bend ? Is the needle point crushed ? → Replace the needle with new one.
Stitch skip	• Is the needle bend ? Is the needle point crushed ? → Replace the needle with new one. • Is the needle correctly attached ? → Refer to "How to attach the needle". • Is the threading correctly arranged ? → Refer to "How to thread the upper thread". • Is the timing of needle and rotary hook correctly adjusted ? → Refer to "Timing adjustment of needle and rotary hook". • Is cut pieces of cloth clogged around the rotary hook ? → Clean around the rotary hook.
Weak tension of threads	• Is the resilience and operational scope of thread take up spring proper ? → Refer to "Adjusting the thread tension spring". • Is the tension of upper thread too weak ? → Adjust the upper thread to correct tension. • Is the tension of lower thread too weak ? → Adjust the lower thread to correct tension.

Trouble	Check and corrective action
Needle breakage	• Is the needle installed correctly ? → Refer to "How to attach the needle". • Is the needle bend ? Is the needle point crushed ? → Replace the needle with new one. • Is the timing of needle and rotary hook adjusted correctly ? → Refer to "Timing adjustment of needle and rotary hook".
Lower thread remaining amount detection error	• Is the lower thread wound on the right position ? → Refer to "How to wind the lower thread". • Is the sensitivity of sensor amplifier correctly set ? → Refer to "Adjustment of lower thread detection sensor". • Is the lens of fiber unit filthy with dirt ? → Wipe out the dirt from the surface of the lens. • Is the bobbin for lower thread remaining amount detection used ? → Use the bobbin for lower thread remaining amount detection. • Is the bobbin case for lower thread remaining amount detection used ? → Use the bobbin case for lower thread remaining amount detection. • Is the bobbin wound evenly ? → Refer to "How to wind the lower thread". • Is the sensor cable correctly connected ? → Confirm connection of the sensor cable and main PCB. • Is the fiber correctly connected ? → Confirm connection of fiber unit and sensor amplifier.
Detection of the lower thread detection with the tread remained in the bobbin	• Is the sensitivity of sensor amplifier correctly set ? → Refer to "Adjustment of lower thread detection sensor".

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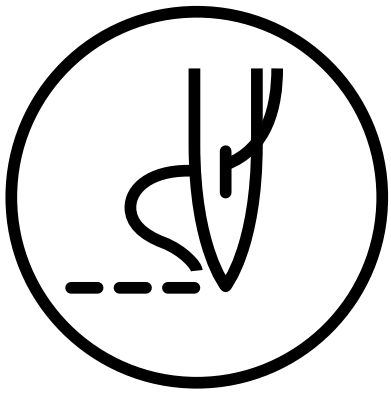

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