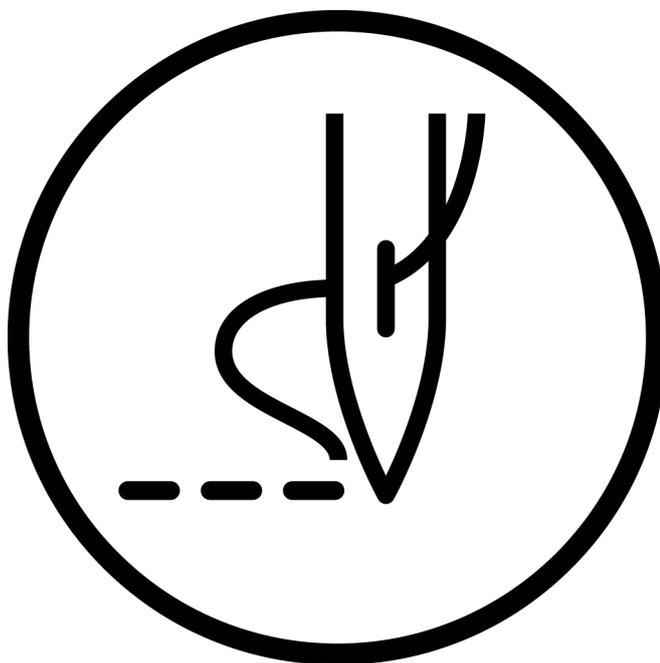


S-6280A

Instruction Manual

Please read this manual before using the product.
Please keep this manual in a place where it can be easily removed whenever necessary.

SINGLE NEEDLE DIRECT DRIVE LOCK STITCHER WITH TREAD TRIMMER



brother

Toward a More Rich Environment

Requests for cooperation

Thank you very much for your patronage of Brother products.

Brother Industries, Ltd. has established an environmental policy based on "environmentally conscious manufacturing, from product development to disposal," so that this earth will be a green land forever. As a good corporate citizen who can coexist with the local community and the environment, Brother Industries, Ltd. will contribute to environmental conservation activities in a minor way.

Therefore, we ask that everyone agree with this concept and give special consideration to the disposal of waste as part of our environmental conservation activities.

- 1.** Ask a collection company to dispose of used packing materials as much as possible in order to recycle them as much as possible.
- 2.** The disposal method of used lubricating oil is mandatory by law. Dispose of the product properly according to the laws and regulations. If in doubt, consult your dealer for further assistance.
- 3.** During maintenance, dispose of unnecessary electronic boards and electronic components generated as industrial waste.

We retain performance parts for repair of this product for a minimum of eight years after discontinuation of production.

Performance parts are parts required to maintain the functions of this product.

Thank you for purchasing our Brother Industrial Sewing Machine.
Before use, thoroughly read [Safety Precautions] and the instruction manual.

Due to its nature, industrial sewing machines are operated immediately before moving parts, such as needles and thread take-up lever, which always pose a risk of injury in these areas. Obtain the knowledge of safety work and instruction of operation by a skilled person/instructor to use the product correctly.

SAFETY PRECAUTIONS

[1] Safety labeling and meaning

The symbols used in this instruction manual and on the product are intended to ensure safe and correct use of the product and to prevent harm to the user and other persons as well as damage to the product. Its display and meaning are as follows.

Display

 DANGER	Failure to abide by the information in a warning may result in serious injury and can be life threatening.
 Warning	Indicates a potentially hazardous situation which, if ignored, could result in death or serious injury.
 Note	Indicates a potentially hazardous situation which, if ignored, could result in minor or moderate injury.

Graphical symbols

 **The symbol means "what you should be aware of."** 
The illustrations in this symbol indicate the contents of caution.
(In the example on the left, be careful not to injure yourself.)

 **The symbol means "Do not do it".** 

 **Symbol means "Must do."** 
The illustrations in this symbol represent the contents of the instructions.
(In the example on the left, ground connection shall be made.)

[2] Safety Instructions

DANGER



When opening the cover of the control box, be sure to turn off the power switch, unplug the power cord, wait for 5 minutes, and then open the cover. Touching high voltage parts may cause serious injuries.

Warning



Do not wet the machine with liquid.
Fire, electric shock or malfunction may occur.



In the unlikely event that liquid enters the machine (sewing machine head/control box), immediately turn off the power switch, unplug it, and contact your dealer or a trained technician.

Note

Operating environment



Use the product in an environment that is not affected by strong electrical noise, such as power line noise or static electricity noise. Strong electrical noise may cause malfunction of the sewing machine.



Use the product in an environment where the fluctuation of the power supply voltage is within $\pm 10\%$ of the rated voltage. Large voltage fluctuations may cause malfunction of the sewing machine.



Use the product in an environment where the power supply capacity is more than the power consumption of the product. Insufficient power supply capacity may cause malfunction of the sewing machine.



The ambient temperature should be between 5°C and 35°C. Low or high temperatures may cause the machine to malfunction.



The relative humidity should be between 45% and 85% and should be used in a non-condensing environment. Drying, high humidity, or condensation on the device may cause the machine to malfunction.



Turn off the power and unplug the power cord during a lightning storm. Lightning can cause the machine to malfunction.



Do not connect any media other than USB media to the USB port. This may cause damage.

Installation



The machine may only be installed by trained personnel.



Have electrical wiring done by your dealer or an electrician.



The sewing machine weighs approximately 36kg. Install the product by two or more persons.



Do not connect the power plug until installation is complete. If the treadle is depressed by mistake, the sewing machine may operate and cause injury.



Turn off the power switch before inserting or removing the plug. Doing so may cause the control box to malfunction.



Please connect to the Earth. Incomplete ground connection may cause electric shock or malfunction.



When fixing the cord, do not forcibly bend the cord or press it too much with a staple.



This may cause a fire and electrical shock.



For the table with casters, fix the casters so that they do not move.



When tilting the sewing machine head, fix it so that the table does not move. Movement of the table may cause injuries such as pinching the foot.



Use both hands to tilt or pull back the machine. If you do so with one hand, your hand may slip due to the weight of the sewing machine and cause injuries such as injuries.



When handling lubricating oil or grease, use protective goggles or gloves to avoid contact with your eyes or skin. Doing so may cause irritation. Do not swallow or eat lubricating oil or grease. Diarrhea and vomiting may occur. Keep it out of the reach of children.

Note

Sewing

-  This machine may only be used by trained personnel for safe operation.
-  Do not use this sewing machine for purposes other than as a sewing machine.
-  Use protective goggles when operating the machine.
A broken needle may get into your eyes and cause injury.
-  Turn off the power switch in the following cases.
If the treadle is depressed by mistake, the sewing machine may operate and cause injury.
 - Threading
 - Replacing the bobbin or needle
 - When not using the machine or leaving the machine unattended
-  For the table with casters, fix the casters so that they do not move.
-  Install and use protective equipment for safety.
Using the product with these devices removed may result in injury.
-  Do not touch or press against moving parts during sewing.
Failure to do so may result in injury or damage to the machine.
-  When tilting the sewing machine head, fix it so that the table does not move.
Movement of the table may cause injuries such as pinching the foot.
-  Use both hands to tilt or pull back the machine.
If you do so with one hand, your hand may slip due to the weight of the sewing machine and cause injuries such as injuries.
-  If you notice any malfunction or unusual noise or smell during use, turn off the power switch immediately. Then contact your dealer or a trained technician.
-  If the machine malfunctions, contact your dealer or a trained technician.

Care

-  Turn off the power switch before starting work.
If the treadle is depressed by mistake, the sewing machine may operate and cause injury.
-  When tilting the sewing machine head, fix it so that the table does not move.
Movement of the table may cause injuries such as pinching the foot.
-  Use both hands to tilt or pull back the machine.
If you do so with one hand, your hand may slip due to the weight of the sewing machine and cause injuries such as injuries.
-  When handling lubricating oil or grease, use protective goggles or gloves to avoid contact with your eyes or skin. Doing so may cause irritation.
Do not swallow or eat lubricating oil or grease. Diarrhea and vomiting may occur. Keep it out of the reach of children.

Maintenance and inspection

-  The machine must be serviced by a trained technician.
-  Have electrical maintenance and inspection performed by your dealer or an electrician.
-  Turn off the power switch and unplug the power cord in the following cases:
If the treadle is depressed by mistake, the sewing machine may operate and cause injury.
 - Inspection, adjustment or repair
 - Replacement of consumable parts such as a hook and knife
-  When opening the motor cover, be sure to turn off the power switch, and then wait for one minute before opening the cover.
Touching the motor surface may cause burns.
-  If you need to make adjustments while the power switch is turned on, use extreme safety precautions.
-  When tilting the sewing machine head, fix it so that the table does not move.
Movement of the table may cause injuries such as pinching the foot.
-  Use both hands to tilt or pull back the machine.
If you do so with one hand, your hand may slip due to the weight of the sewing machine and cause injuries such as injuries.
-  When replacing parts or installing optional parts, use our genuine parts.
We are not responsible for accidents or failures caused by the use of non-genuine parts.
-  If the safety guard is removed, be sure to install it in its original position and check that it functions properly.

Modification

-  To prevent accidents and malfunctions, do not modify the sewing machine (including the control unit). We are not responsible for accidents or failures caused by modification.

[3] WARNING LABEL

The warning labels shown below are displayed on the sewing machine.

Be sure to observe the precautions on the warning labels.

Also, if the label is peeled off or becomes unreadable, contact the retailer from whom the watch was purchased.

1

	⚠ 危险 触摸高电压部分， 会导致受伤。 在切断电源 5 分钟后， 再开启盖罩。
	⚠ DANGER Hazardous voltage will cause injury. Turn off main switch and wait 5minutes before opening this cover.

3



Be careful not to pinch your hands when returning the overturned sewing machine head.

2

1			
2			

CAUTION

Moving parts may cause injury.

Operate with safety devices installed.

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

4



Be careful not to injure yourself with a moving balance-tread take-up.

5



High temperature caution display

6



Please connect to the Earth. Incomplete ground connection may cause electric shock or malfunction.

7



Display of rotation direction

* Safety protection device:

- (A) Finger guard
- (B) Balance cover
- (C) Motor cover

8

brother 机械润滑油 Lubricating Oil for Machining
⚠ 注意 润滑油可能会引起眼睛发炎。 吞食润滑油会引起腹泻和呕吐。 请勿吞食。 接触眼睛时： - 请用冷水冲洗。 - 寻求医疗救助。 如果不慎吞食： - 请立即寻求医疗救助。
⚠ CAUTION Oil may cause inflammation to eye. Swallowing oil can cause diarrhoea and vomiting. Do not swallow. Eye contact: - Rinse with plenty of cold water. - Seek medical help. IF swallowed: - Seek medical help immediately.

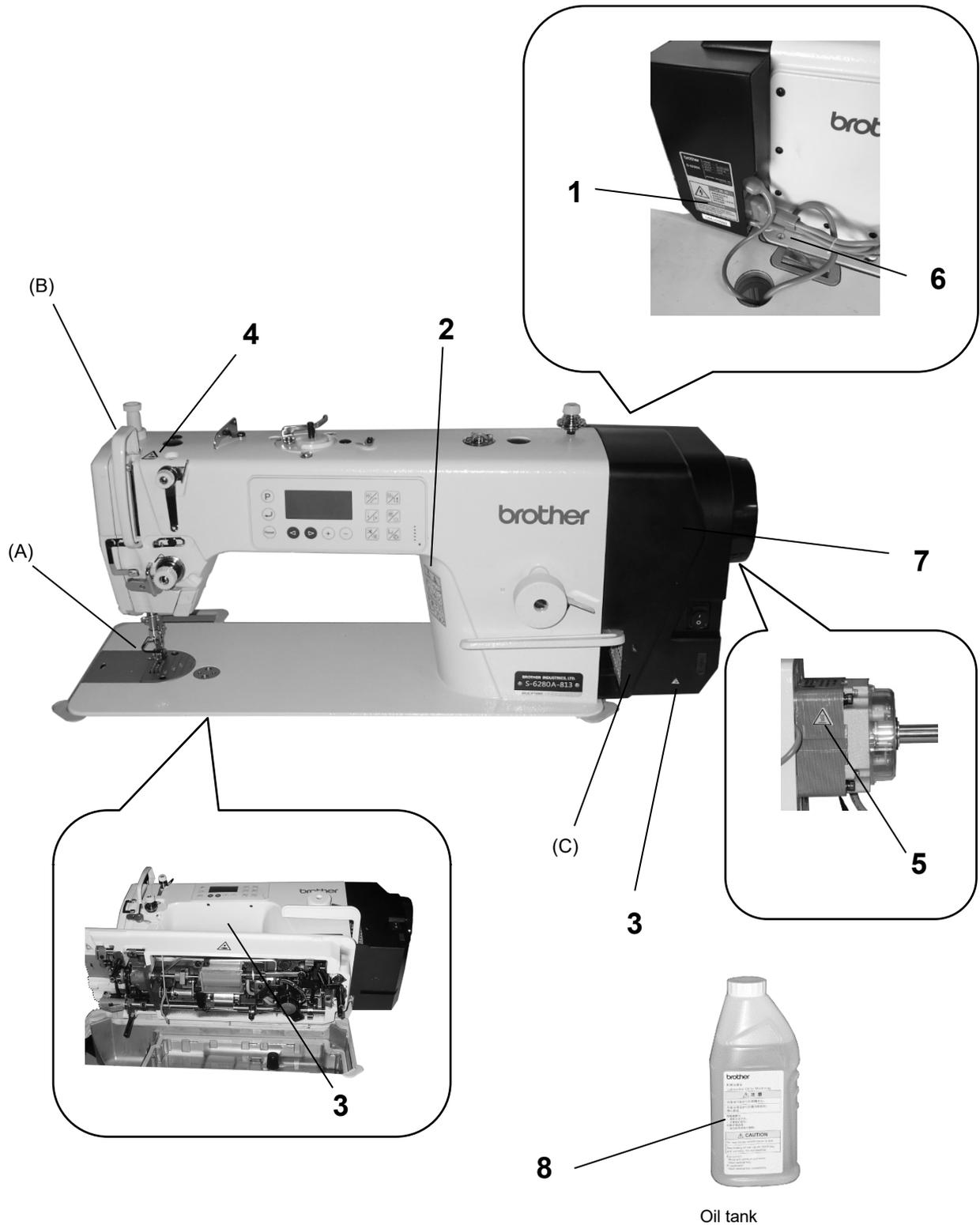


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1. Specifications of the sewing machine

S-6280A-81

	Applications
3	For medium
5	Thick material

	-813	-815
Maximum sewing	5,000sti/min	4,000sti/min
Backtack sewing speed	3,200sti/min	
Max. stitch length	5mm	5mm
Thread trimming method	Single action thread trimming mechanism	
Thread holder	Standard equipment	
Handy switch	Standard equipment	
LED light	Standard equipment	
Solenoid press lift	Standard equipment	
Height of presser foot	Knee lift: 10 to 15 mm/Automatic: 12 mm	
Needle to be used (DB×1/DP×5)	#11-#18	#19-#22
Feed dog height	0.9mm	1.2mm
Motor	AC servo motor	
Weight	36kg	
Power supply	Single-phase: 200 to 240V Maximum power consumption: 400 VA	

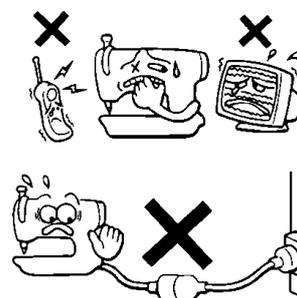
2. How to install

Note

-  The machine may only be installed by trained personnel.
-  Have electrical wiring done by your dealer or an electrician.
-  The sewing machine weighs approximately 36kg. Install the product by two or more persons.
-  Do not connect the power plug until installation is complete.
If the treadle is depressed by mistake, the sewing machine may operate and cause injury.
-  When tilting the sewing machine head, fix it so that the table does not move.
Movement of the table may cause injuries such as pinching the foot.
-  Use both hands to tilt or pull back the machine.
If you do so with one hand, your hand may slip due to the weight of the sewing machine and cause injuries such as injuries.

Location of the sewing machine

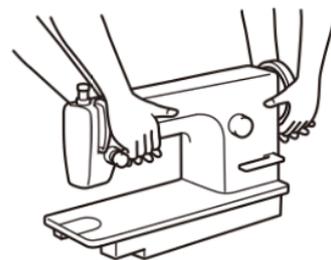
- Do not install this equipment near a TV, radio or cordless phone.
Noise may enter the TV, radio or cordless phone.
- Install this unit in a location where the power can be directly removed from the AC outlet.
Use of an extension cord may cause malfunction of the sewing machine.



0475D

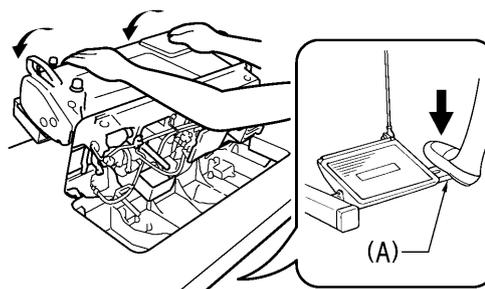
How to carry the sewing machine

- Hold the arm body and motor cover as shown in the figure and carry the sewing machine by two persons.
- * Do not hold other than the motor cover. Doing so may damage the sewing machine.



Tilting the sewing machine head

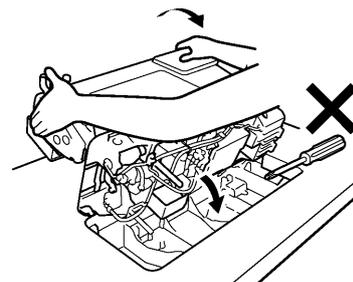
- Hold the (A) part with your foot so that the table does not move, and push the arm body with both hands to tilt the sewing machine head.



1342D

How to return the sewing machine

1. Place a tool, etc., from near the table hole.
2. Slowly return the sewing machine head with your right hand while holding the face plate part with your left hand.

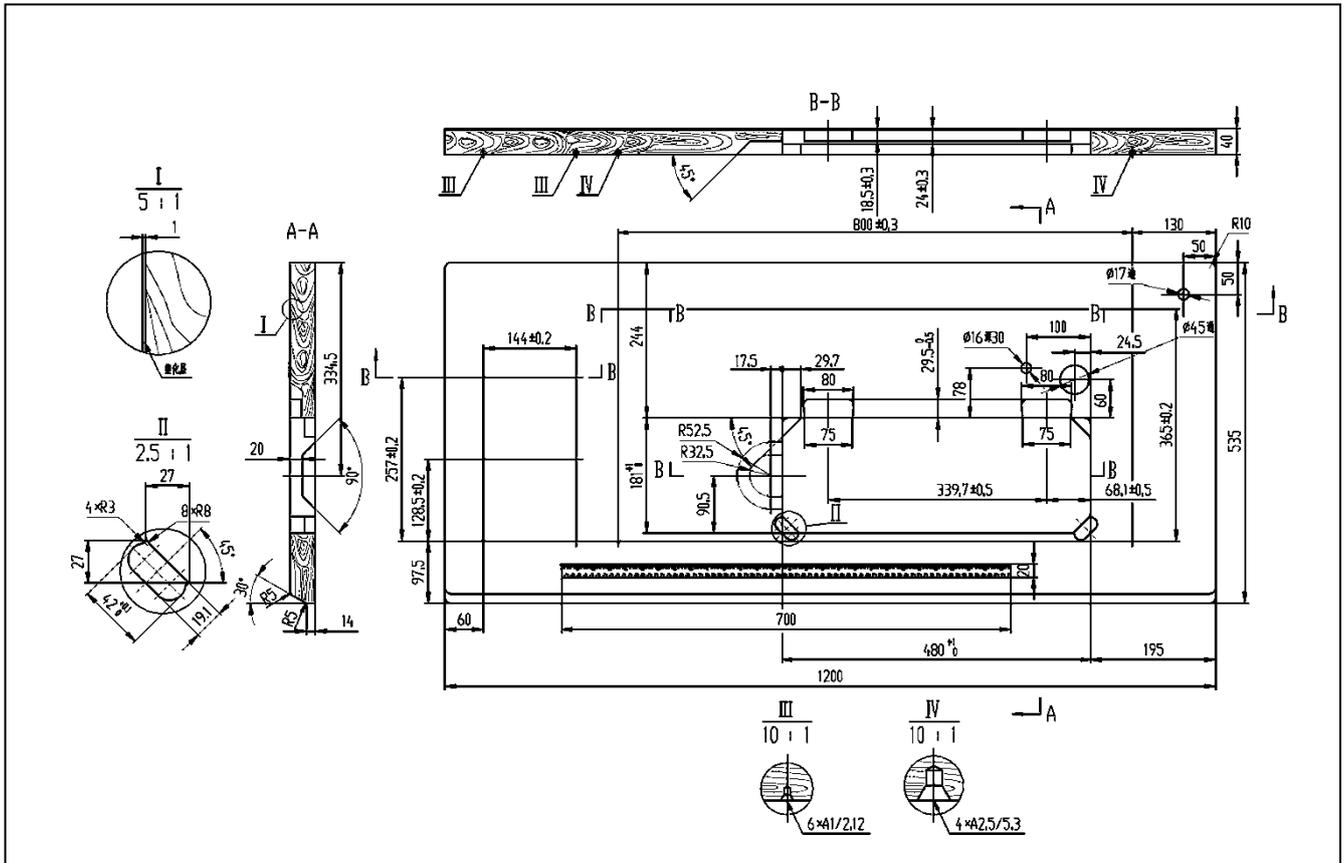


1343D

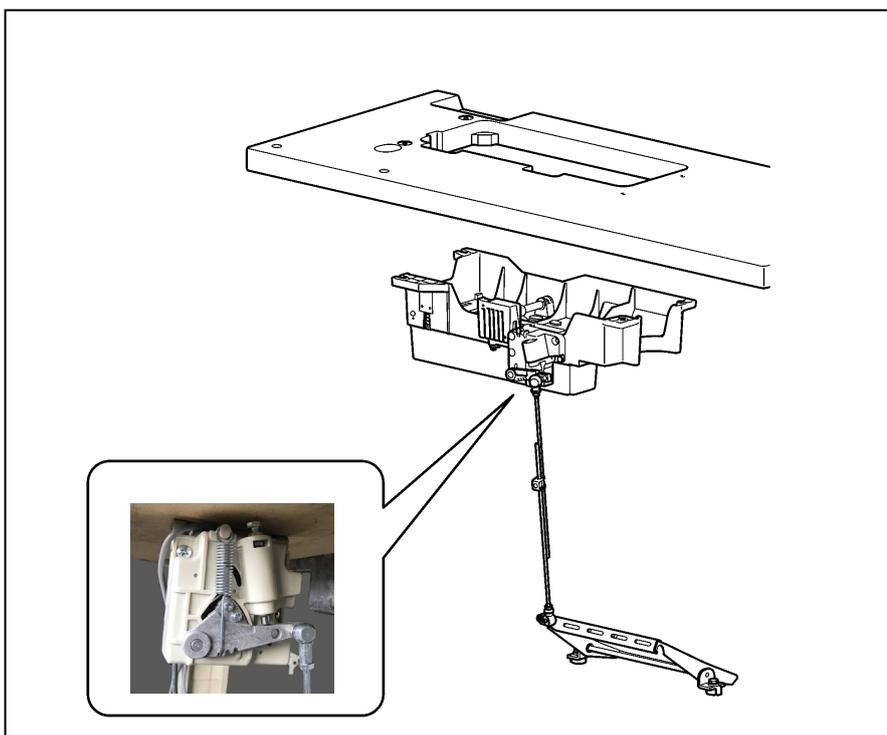
2. How to install

2-1. Table machining drawing

- The table should be 40mm thick and strong enough to accommodate the weight and vibration of the sewing machine.
- Drill holes as shown in the illustration.

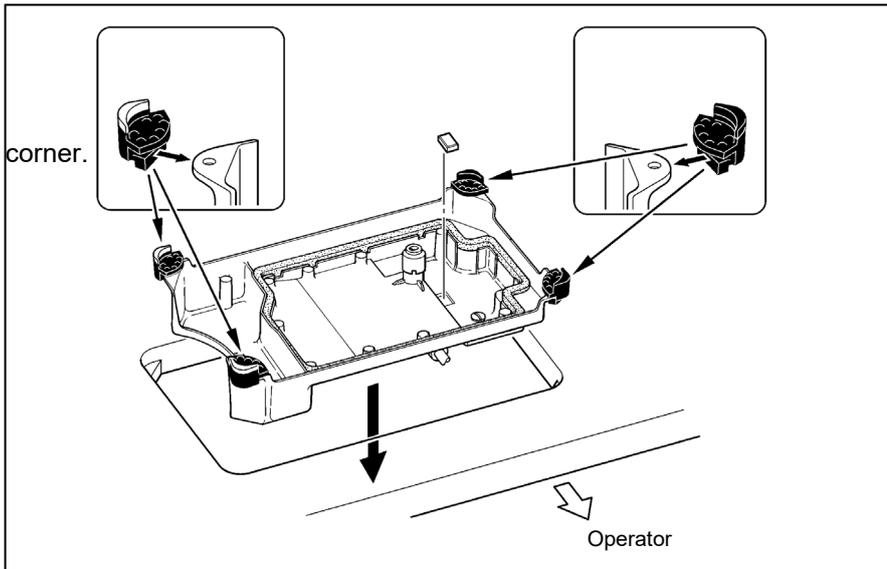


2-2. How to install



1. Connecting rod

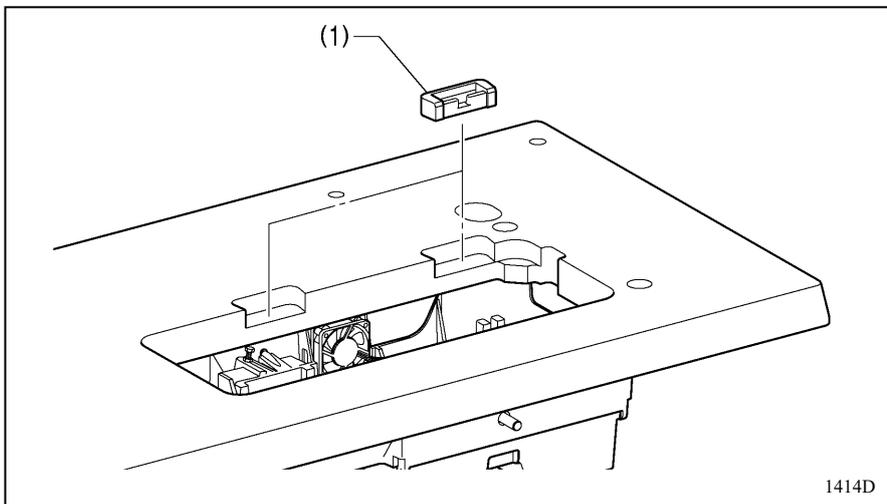
- (1) Connecting rod
- (2) Nut



2. Oil pan

Oil pan

Insert the rubber bedding into the oil pan



3. Head hinge receiving

rubber

(1) Head hinge receiving rubber [2 pcs]



4. Sewing machine head

(1) Hinge [2 pcs]

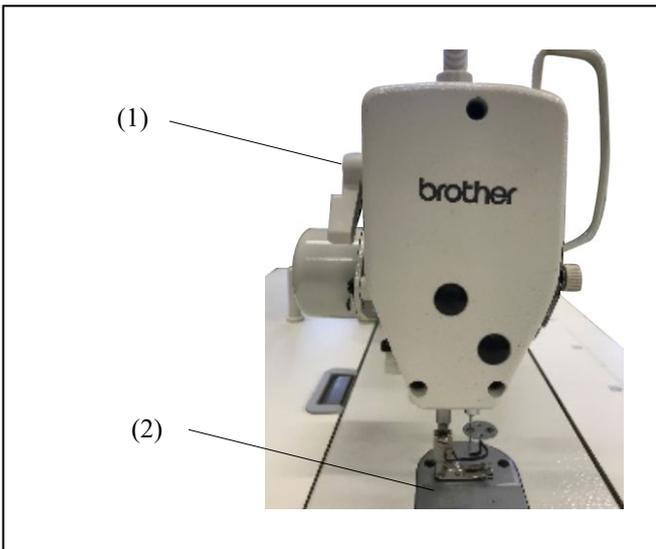
(2) Sewing machine head

(3) Pillow

[Precaution]

- Bundle the cords and route them through the cord holes.
- Place the pillow (3) firmly into the table as far as it will go.
- If it is not inserted to the end, it is dangerous because of poor stability when the sewing machine head is tilted.

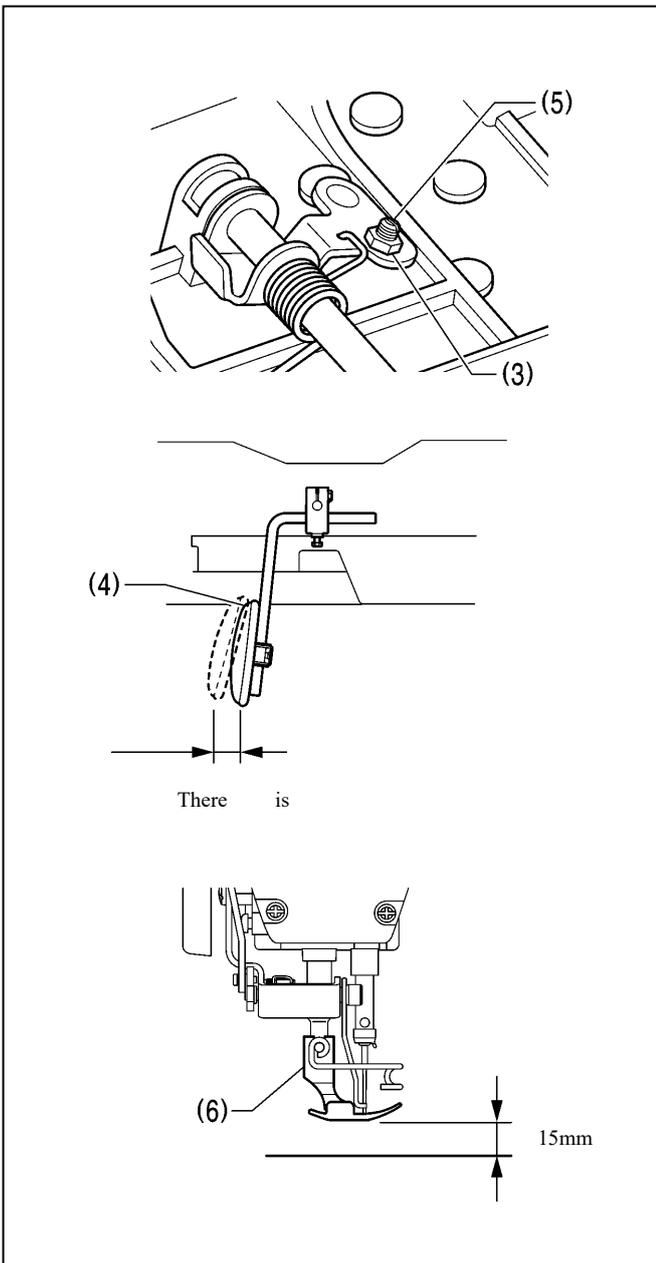
2. How to install



5. Knee pad

<Adjusting knee lifting>

1. Turn the pulley to lower the feed dog from the top of the needle plate.
2. Lower the presser foot (2) with the presser foot lifter (1).



3. Loosen the nut (3).
4. Adjust by turning the screw (5) so that there is a movement amount (backlash) of the knee pad (4).
5. After this adjustment is made, tighten the nut (3) firmly.

6. Adjust so that the presser foot (6) is within 15mm of the needle plate when the knee pad is pressed fully.

2-3. Lubrication method

 **Note**

-  **Do not connect the power plug until lubrication is complete.**
If, the treadle is depressed by mistake, the sewing machine may operate and cause injury.
-  **When handling the lubricant, use protective goggles or gloves to avoid contact with your eyes or skin.**
Doing so may cause irritation.
Do not drink lubricating oil. Diarrhea and vomiting may occur.
Keep it out of the reach of children.
-  **Hold the base of the nozzle firmly when cutting the nozzle of the oil tank.**
Holding the nozzle by its tip may cause injury by scissors.



Wipe off any dirt from the oil reservoir with a cloth.

1. Supply lubricant if the oil level is below the <LOW> mark.
 - For the lubricating oil, use Brother specified oil <JX Nippon Oil & Energy Corporation made by Sawing Glub 10N; VG10>.

*If it is difficult to obtain, use <Exxon Mobil Exotex SM10; VG10> as the recommended oil.

- When the lubricating oil gets dirty, remove the oil cover screw and replace the lubricating oil.
- Wipe off any dirt from the dust magnet and oil pan.

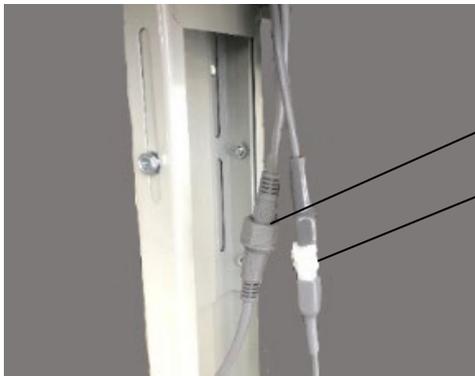
Treat waste oil properly in accordance with laws and regulations.

2-4. Connecting the cord

Note

-  Have electrical wiring done by your dealer or an electrician.
-  Do not connect the power plug until the connection of the cord is complete.
If the treadle is depressed by mistake, the sewing machine may operate and cause injury.
-  When fixing the cord, do not forcibly bend the cord or press it too much with a staple.
This may cause a fire and electrical shock.
-  Please connect to the Earth.
-  Incomplete ground connection may cause electric shock or malfunction.

2-4-1. Connecting the cord



Connecting the Power Cord and Step Unit

1. Code

- (1) Power cord
- (2) Tread unit



2. Ground wire

- (1) Ground wire
- (2) Tightening screw

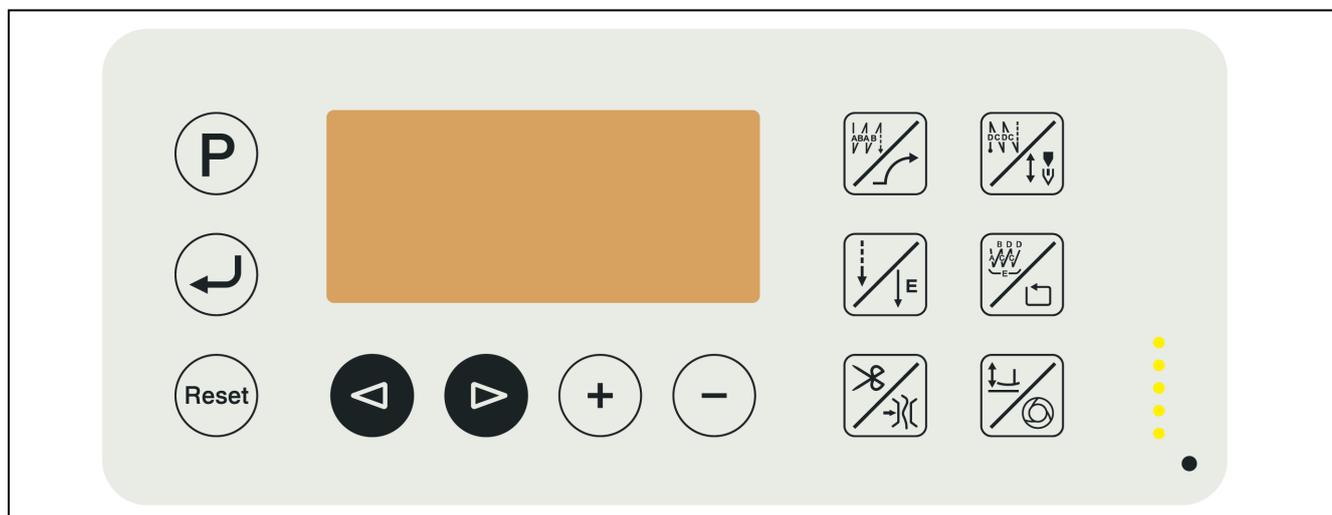
[Precaution]

- For safety, be sure to connect the ground wire securely.

3. Operation panel

3-1. Name and Function

3-1-1. Key Names and Functions

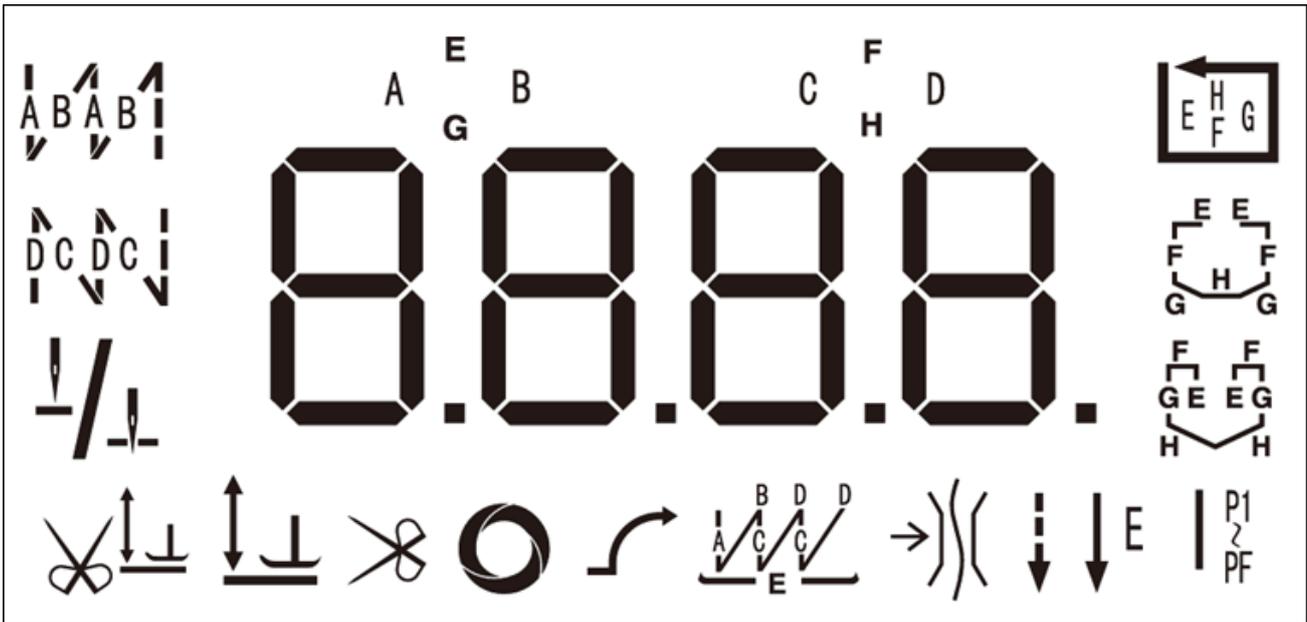


Name	Key	Specify
Memory switch key		Click this button to enter the memory switch setting mode for the operator. Touch and hold to display the password entry screen. Now enter the correct password and press the key to enter the mechanic memory switch setting mode. 
Enter key		Click to confirm the changed value or move to the lower (upper) mode. Press and hold to enter adjustment mode.
Plus key		Click to increase the corresponding value. Press and hold to continuously increase the corresponding value.
Minus key		Click to decrease the corresponding value. Press and hold to continuously decrease the corresponding value.
Left button		Click to move the digit to be edited (blinking position) to the left.
Right button		Click to move the digit to be edited (blinking position) to the right.
Reset button		Press and hold to return to the factory default settings.
Pre-stop sewing key/ Slow start key		Click to switch the pre-stop stitching operation in the following order. No ABOOBABABO OOBBOOB... Press and hold to toggle the slow start function (yes/no).

3. Operation panel

Post-stop sewing key/ Needle up/down key		Click to switch the stop stitching operation in the following order. No CDOOBCDCDOOB OOB COOB... Press and hold to switch the needle stop position (needle up/needle down) after sewing.
Normal sewing key/ fixed sewing key		Click to set the sewing pattern to normal sewing. Press and hold to set the sewing pattern to inching fixed sewing.
Continuous sewing key/ Step sewing key		Click to set the sewing pattern to continuous stop sewing. Press and hold to set the sewing pattern as a step sewing. The sewing pattern is switched in the following order. Sewing → 4 steps Sewing → 7 steps Sewing → 8 steps Sewing → 15 steps Sewing → 4 steps Sewing →...
Presser foot lift key/ Auto key		Click to switch the presser foot lifting operation in the order shown below. In → the presser foot is not raised automatically (the presser foot is raised by pedaling) → of raising the presser foot after cutting the thread → to raise the presser foot immediately after the upper shaft has stopped In → of lifting the presser foot after cutting the thread and immediately after the upper shaft has stopped... Press and hold to toggle the automatic sewing function (enable/disable). ※ Valid only for inching sewing and step sewing
Thread trimmer key/ Thread holder key		Click to switch the thread trimming function (yes/no). Press and hold to toggle thread hold function (yes/no).

3-1-2. Icon Functions



Icon	Function
	Indicates the start backtack (none/B/AB/ABAB).
	Indicates the end backtack (none/C/CD/CDCD).
	Indicates the needle stop position (up/down).
	Lights when the feeding frame lifting operation is available after the thread is cut.
	Lights up when the presser foot lifting operation is present immediately after the upper shaft stops.
	Lights when the thread cutting function is activated.
	Lights when the automatic sewing function is enabled.
	Lights when the slow start function is enabled.
	Lights when sewing pattern is continuous backtack sewing.
	Lights up when the thread holder at the start of sewing is found.
	Lights when the sewing pattern is normal sewing.

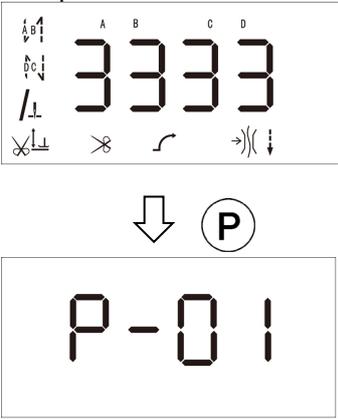
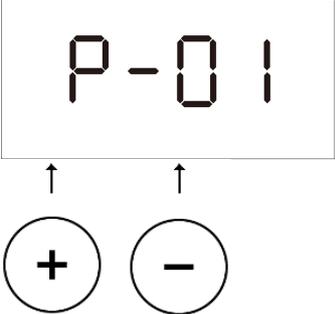
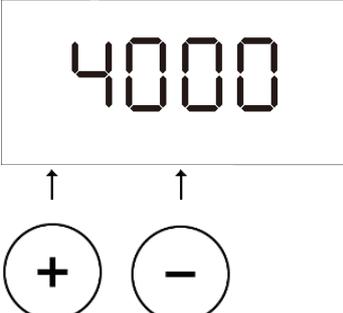
3. Operation panel

	<p>Lights when the fixed stitches sewing.</p>
	<p>Lights up when sewing is a step sewing with a sewing pattern consisting of 4 steps.</p>
	<p>Lights up when sewing is a step sewing with a sewing pattern consisting of 7 steps.</p>
	<p>Lights up when the sewing pattern is a step sewing consisting of 8 steps.</p>
	<p>Lights up when sewing is a step sewing with a sewing pattern of up to 15 steps.</p>

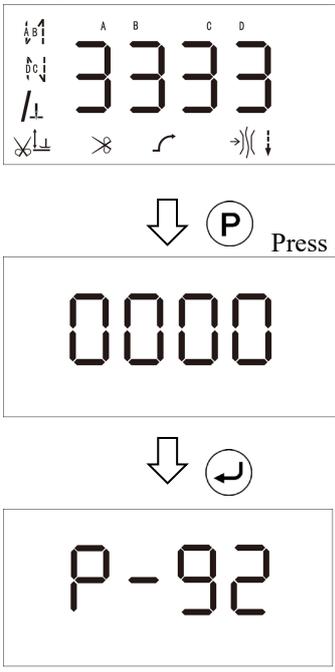
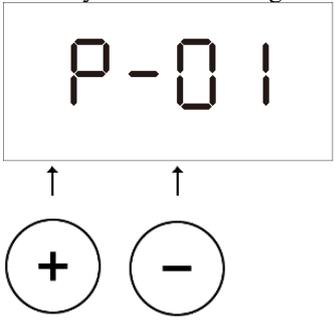
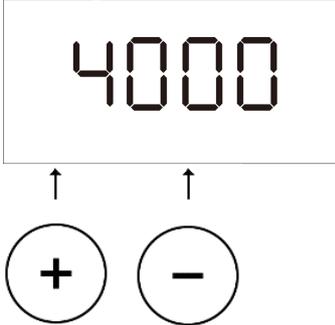
3-2. How to set the memory switch

- The memory switch can be set for the operator or the mechanism.

3-2-1. Memory switch setting mode for operator

<p>1</p>	<p>Entering the Memory Switch Setting Mode for Operators</p> 	<p>Press the key on the home screen to switch to the memory switch setting mode for the operator. (P)</p>
<p>2</p>	<p>Memory Switch Selecting a Number</p> 	<p>◀ Press the key to make the desired number of digits blink. ▶</p> <p>(+) Press the key to select the memory switch number (P01 to P43).</p> <p>(-) Then press the key to display the setting value of the corresponding memory switch number. ↵</p>
<p>3</p>	<p>To change a set value</p> 	<p>◀ Press the key to make the desired number of digits blink. ▶</p> <p>(+) Press the key to change the setting value. (-)</p>
<p>4</p>	<p>Setting Confirmation</p>	<p>When the setting is completed, press the key to confirm the value. ↵</p> <p>[Precaution] If the key is pressed without pressing the key, the set value is not confirmed. ↵ (P)</p>
<p>5</p>	<p>Exiting Operator Memory Switch Setting Mode</p>	<p>To exit the memory switch setting mode for the operator and return to the home screen, press the key. (P)</p>

3-2-2. Mechanic memory switch setting mode

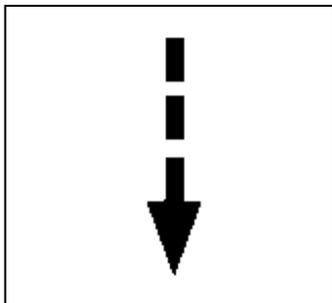
<p>1</p>	<p>Switch to mechanic memory switch setting mode</p> 	<p>Press and hold the key on the home screen to switch to the password entry screen. (P)</p> <p>◀ Press the key to make the desired number of digits blink. ▶</p> <p>⊕ Use the key to enter the password, and press the key. ※The password is "8888". ⊖ ↵</p> <p>When the password is entered correctly, the unit switches to the mechanic memory switch setting mode.</p>
<p>2</p>	<p>Memory Switch Selecting a Number</p> 	<p>◀ Press the key to make the desired number of digits blink. ▶</p> <p>⊕ Press to select the memory switch number (P01 to P160). ⊖</p> <p>Then press the key to display the setting value of the corresponding memory switch number. ↵</p>
<p>3</p>	<p>To change a set value</p> 	<p>◀ Press the key to make the desired number of digits blink. ▶</p> <p>⊕ Press the key to change the setting value. ⊖</p>
<p>4</p>	<p>Setting Confirmation</p>	<p>When the setting is completed, press the key to confirm the value. ↵</p> <p>[Precaution] If the key is pressed without pressing the key, the set value is not confirmed. ↵ (P)</p>

5	Exiting the mechanic memory switch setting mode	To exit the mechanic memory switch setting mode and return to the home screen, press the key. 
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3-3. How to set the sewing pattern

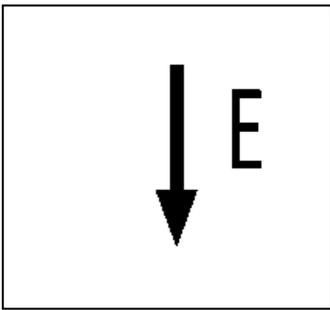
There are four types of sewing patterns: normal sewing, inching sewing, continuous stop sewing, and step sewing.

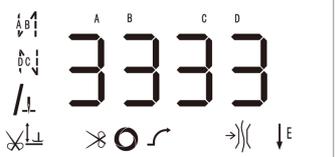
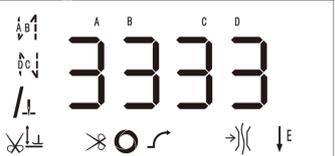
3-3-1. Normal sewing



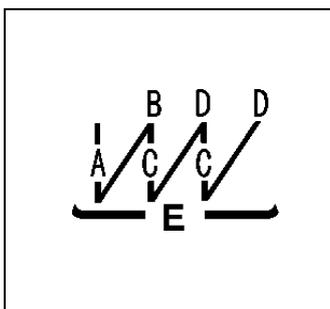
<p>1</p>	<p>Normal sewing setting</p>	<p> Press the key so that the icon lights. </p>
<p>2</p>	<p>Setting the normal sewing speed</p>	<p>The normal sewing speed is set with P01 on the memory switch.</p>
<p>3</p>		<p>Sewing is performed while the treadle is held down.</p>

3-3-2. Fixed stitch

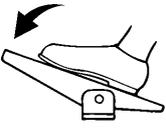


<p>1</p>	<p>Setting of inching sewing  Press and hold the key until the icon lights. </p> 
<p>2</p>	<p>Setting the number of stitches for inching sewing  Press the key to display the number of stitches E.</p>  <p style="text-align: center;"> </p>  <p style="text-align: center;"> Press the key to set the number of stitches E. </p> <p style="text-align: center;"></p> <p style="text-align: center;"> </p>
<p>3</p>	<p>Setting the speed of inching sewing Use P09 of the memory switch to set the inching sewing speed.</p>
<p>4</p>	<p>If you continue to step on the treadle, sewing of the set number of stitches E is performed and the machine stops.</p> 

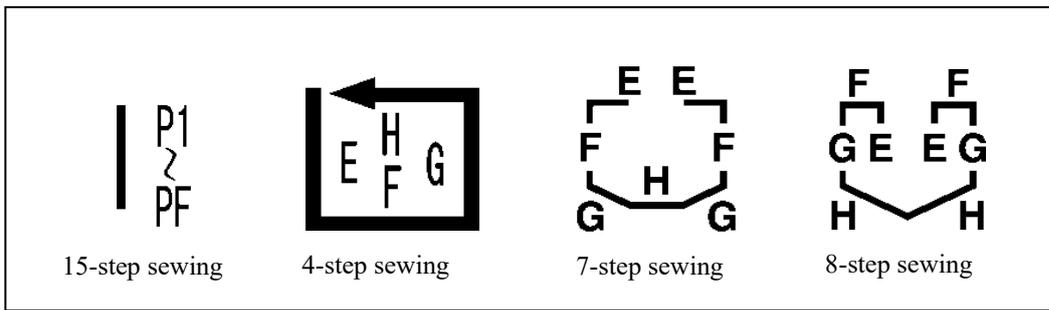
3-3-3. Continuous fixed stitching



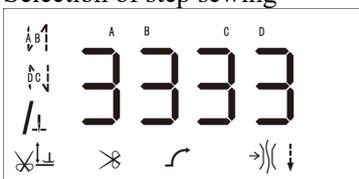
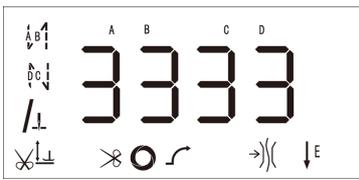
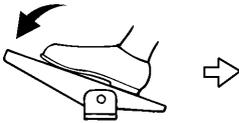
<p>1</p>	<p>Setting of continuous stop stitching</p>	<p> Press the key so that the icon lights. </p>
<p>2</p>	<p>Setting the number of stitches for continuous stop stitching</p>	<p> Press the key to select the corresponding number of stitches (A, B, C, D) so that the number blinks. </p> <p> Press the key to set the corresponding number of stitches (A, B, C, D). </p>
<p>3</p>	<p>Set the number of repetitions of continuous stop stitching</p>	<p> Press the key to display the number of repetitions.</p> <p> Press the key to set the number of repetitions (E). </p> <p> Press the key to confirm the number of repetitions E.</p>

4	Setting the speed of continuous stop stitching	The speed of continuous stop stitching is set with P06 on the memory switch.
5		Just by stepping on the treadle, after sewing one cycle of the set number of stitches, thread trimming is performed automatically and stops on the needle. e.g., ABC when E is 3 ABCDCD when E is 6

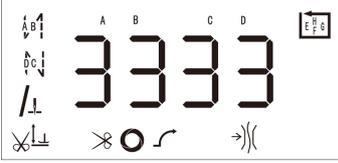
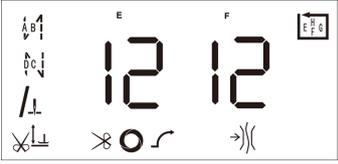
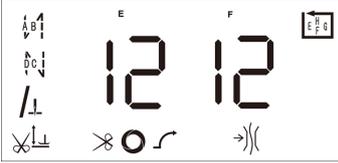
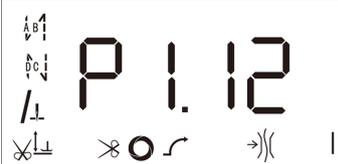
3-3-4. Step stitching



3-3-4-1. Step sewing setting

<p>1</p>	<p>Selection of step sewing</p>  <p>↓  Press and hold</p> 	<p>Press and hold the key in the home screen to switch the sewing pattern to step sewing </p> <p>Press and hold to change the number of steps. Sewing → 4 steps Sewing → 7 steps Sewing → 8 steps Sewing → 15 steps Sewing → 4 steps Sewing →...</p>
<p>2</p>	<p>Setting the speed of step sewing</p> <p>The speed of the step sewing is set with P09 of the memory switch.</p> <p>The number of stitches is set in "Step edit mode".</p>	
<p>3</p>	 <p>Step sewing is performed when the treadle is stepped on.</p>	

3-3-4-2. Step edit mode

1	<p>Shift to Step Sewing Editing</p>  <p style="text-align: center;">↓ ↻</p> 	<p>Pressing the key while the step sewing is selected switches to the step editing mode. ↻</p>
2	<p>Setting the number of stitches</p> <p><For 4/7/8 steps></p>  <p style="text-align: center;">↑ ↑</p> <p style="text-align: center;">⊕ ⊖</p> <p style="text-align: center;">↓ ↻</p>  <p style="text-align: center;">↑ ↑</p> <p style="text-align: center;">⊕ ⊖</p> <p><For 15 steps></p>  <p style="text-align: center;">↑ ↑</p> <p style="text-align: center;">⊕ ⊖</p>	<p><For 4/7/8 steps></p> <ul style="list-style-type: none"> • Press the key to make the desired number of digits blink. ◀ ▶ • Use the keys to set the number of stitches E (00 to 99) and the number of stitches F (00 to 99). ⊕ ⊖ • Press the key to display the number of stitches G and the number of stitches H. ↻ • Press the key to make the desired number of digits blink. ◀ ▶ • Use the keys to set the number of stitches G (00 to 99) and the number of stitches H (00 to 99). ⊕ ⊖ <p style="text-align: center;">※ When 0 hand is set, only that step is invalid.</p> <p><For 15 steps></p> <ul style="list-style-type: none"> • Press the key to make the desired number of digits blink. ◀ ▶ • Press the key to select the step number (P1 to PF). ⊕ ⊖ • Use the key to set the number of stitches (00 to 99). ⊕ ⊖ <p style="text-align: center;">※ When 0 hand is set, that step and subsequent steps are disabled.</p>

3. Operation panel

3	Completion of step sewing editing	When you have finished making sets, press the key to return to the home screen. 
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3-4. How to set the sewing speed

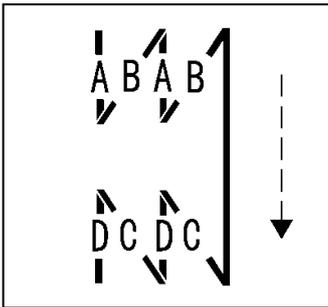
In the Home screen with no blinking value, you can change the current sewing speed by pressing the/ key. If it is changed during sewing, it will be reflected from the next sewing. (+) (-)

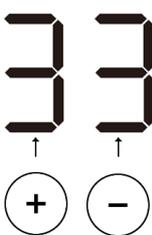
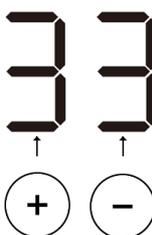
※ The target speed is the speed currently selected.

Normal sewing speed (P01)/Continuous stop sewing speed (P06)/Inching sewing speed (P09)

※ When the value is changed, the value of the corresponding memory switch (P01/P06/P09) is also automatically changed.

3-5. How to set the front start and end backtack stitches



1	Selection of type of pre-stop stitching	 Press the key to select the type of pre-stop sewing. None -  o → ..  No 
2	Setting the number of stitches for pre-stop stitching 	 Press the key to select the corresponding number of stitches (A, B) so that the number blinks.   Press the key to set the corresponding number of stitches (A, B).  ※ At P04 on the memory switch for the speed of the pre-stop stitching You set.
3	Type setting of post-stop sewing	 Press the key to select the type of post-stop sewing. None -  o → ..  No 
4	Setting the number of stitches for stitching after stopping 	 Press the key to select the corresponding number of stitches (C, D) so that the number blinks.   Press the key to set the corresponding number of stitches (C, D).  ※ The sewing speed for the post-stop sewing is set with P05 on the memory switch.

3-6. Checking method of the production counter

The current production counter can be checked on P41.

※ When P27-N12 is set to "1", the production counter can be displayed when the power is turned on.

The counting units can be changed with P27-N06.

The counting direction can be changed with P27-N13.

3-7. How to set up the handy switch

Use P15 to set the function of the handy switch A (upper row).

Use P11 to set the function of handy switch B (lower row).

3-8. How to confirm the software version

Main Control Version: This can be checked in P42-N01.

Panel Control Version: This can be checked in P42-N02.

3-9. How to set head specifications

In P70 the following

-3:-3 Specification

-5:-5 Specification

[Precaution]

If you change the value of P70 and press the key, the settings other than P92 will return to the factory default settings. 

3-10. Data initialization method

There are three ways to initialize data:

A: On the Home screen, press and hold the key to initialize the data other than the following to the factory default settings.



P18,P19,P25,P26, P27-N04, P32,P33,P58,P59,P70,P92

Normally, memory switches other than those listed above are initialized to the factory default settings, but memory switches with default settings that differ from the factory default settings are restored to their factory default settings.

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※ After confirming the value of the memory switch with the key, press and hold the key to set the default value that

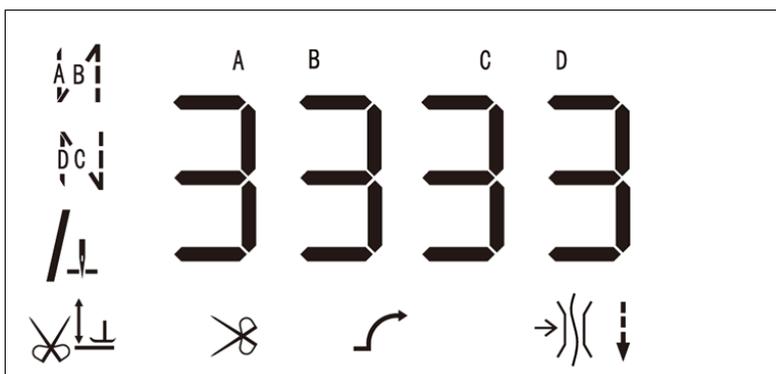
is different from the factory setting.

B: In mechanic memory switch mode, select P128, enter the panel version, and press the key to initialize the data other than the following to the factory default settings.

P18,P19,P25,P26, P27-N04, P32,P33,P58,P59,P70,P92

C: In mechanic memory switch mode, select P70 and press the key to initialize data other than P92 to the factory default settings.

※ Initialization is performed only when the value of P70 is changed. Therefore, after changing to a value other than the desired value, it is necessary to return to the desired value.



3-11. Memory Switch

Parts Number	Item	Range	Initial value	Description
P01	Maximum Speed of Normal Sewing (sti/min)	100- 【P68】	4000	Maximum speed for normal sewing ※The upper limit of the setting range is the value of P68.
P02	Adjust acceleration curve (%)	10-100	80	Climbing slope setting of the speed controller The higher the slope value, the steeper the speed. The lower the slope value, the slower the speed.
P03	Invalid			
P04	Pre-stop sewing speed (sti/min)	200-3200	1800	Speed when sewing pre-stop sewing (A, B)
P05	Post-stop sewing speed (sti/min)	200-3200	1800	Speed when sewing post-stop sewing (C, D)
P06	Sequential sewing speed (sti/min)	200-3200	1800	Speed when sewing continuous stop sewing (A, B, C, D)
P07	Slow start speed (sti/min)	200-1500	700	Slow start speed
P08	Number of slow start hands (stitches)	1-9	2	Number of slow start stitches
P09	Inching sewing speed (sti/min)	200-4000	3700	Speed when sewing inching sewing
P10	Automatic stop sewing function after inching sewing	ON/OFF	ON	ON: Stop sewing is automatically executed after inching sewing. OFF: Stop sewing is not executed automatically after inching sewing. The pedal must be depressed to perform a post-stop sewing.
P11	Operation of handy switch B (lower row)	0-6	5	0:No function 1:Half needle; 2:One needle; 3:Semi-continuous needle; 4:Continuous replenishment; 5: Having the operation of reversing the stitch when stopping in the middle or in the middle of the stitch 6:Reverse the seam in the seam. If the stitch stops halfway, correct the seam.
P12	Pedal operation mode.	0-1	1	0:Pedal operation is possible, and any stop and start are possible; 1:A series of sewing operations is performed automatically when the pedal is lightly touched
P13	Operation mode at the end of pre-stop sewing	CON/STP	CON	CON: Next sewing is performed without stopping after the pre-stop sewing is completed. STP: Stops after completion of pre-stop sewing.
P14	Invalid			
P15	Operation of handy switch A (upper row)	0-6	2	0:No function 1:Half needle; 2:One needle; 3:Semi-continuous needle; 4:Continuous replenishment; 5: Having the operation of reversing the stitch when stopping in the middle or in the middle of the stitch 6:Reverse the seam in the seam. If the stitch stops halfway, correct the seam.
P16	Reverse sewing speed (sti/min) with handy switch	0-3200	3000	When the value is 0, it is disabled (remains at the current speed).
P17	Invalid			
P18	Solenoid ON timing for pre-stop sewing	0-200	130(-3) 100(-5)	Decreasing the value will shorten the length of A in the pre-stop sewing. And the length of B of the pre-stop stitch is increased. Increasing the value increases the length of A in the pre-stop stitch. Also, the length of B of the pre-stop stitch is shortened.

3. Operation panel

Parts Number	Item	Range	Initial value	Description
P19	Solenoid OFF timing for pre-stop stitching	0-200	150(-3) 130(-5)	Decreasing the value will shorten the length of B for the pre-stop sewing. Increasing the value increases the length of B in the pre-stop stitch.
P20	-	0-1	1	Do not change.
P21	Pedal acceleration position	30-1000	520	Pedal acceleration position
P22	Pedal return position	30-1000	420	Pedal return position
P23	Pedal depression position	30-1000	270	Pedal depression position
P24	Pedal thread trimming position	30-1000	130	Pedal thread trimming position
P25	Solenoid ON timing of post-stop sewing	0-200	130(-3) 100(-5)	Decreasing the value will shorten the C length of the post-stop sewing. Increasing the value increases the length of C for the post-stop sewing.
P26	Solenoid OFF timing of post-stop sewing	0-200	150(-3) 130(-5)	Decreasing the value will shorten the C length of the post-stop sewing. Also, the length of D of the stop stitch becomes longer. Increasing the value increases the length of C for the post-stop sewing. Also, the length of D of the stop stitch is shortened.
P27 N01 ~ P27 N03	Invalid			
P27 N04	Audio Settings	0-2	0	0 Off 1 Chinese 2 English
P27 N05	Choosing a Voice Announcement	0, 2	2	0:No Key Sound 2:Have a keypad sound
P27 N06	Count unit of the production counter (thread trimming count)	0-50	1	0:Do not count 1-50:Production count is counted one by the set number of thread trimming operations.
P27 N07 ~ P27 N11	Invalid			
P27 N12	Production counter display at power-on	0-1	0	0:Not display 1:Displaying the production counter when the power is turned on (P41 is selected.)
P27 N13	Count direction of the production counter	0-1	0	0:Up direction, 1: Down direction
P28	Operation mode of continuous stop stitching	0-1	1	0:Pedal operation is possible, and any stop and start are possible; 1:A series of sewing operations is performed automatically when the pedal is lightly touched
P29	Braking force when the sewing machine motor stops	1-45	20	Increasing the value increases the brake force.
P30	Invalid			
P31	Invalid			
P32	Solenoid ON timing for continuous stop stitching	0-200	130(-3) 100(-5)	Stitch compensation for continuous back stitch A(C) part, stepwise delay of 0 to 200 action. The larger the number, the longer the last needle in the A(C) segment. B(D) As the first needle in the segment is shorter

3. Operation panel

Parts Number	Item	Range	Initial value	Description
P33	Solenoid OFF timing for continuous stop stitching	0-200	150(-3) 130(-5)	Stitch compensation of continuous back stitch B(D) part, stepwise delay of 0 to 200 action. The larger the number, the longer the last needle in the B(D) segment and the shorter the first needle in the C segment.
P34 ~ P36	Invalid			
P37	Strength of thread presser foot at sewing start	0-11	6	0: Thread wiping operation 1: Thread wiping operation 2~11: The larger the value, the stronger the operation force of the thread retainer.
P38 ~ P40	Invalid			
P41	Production counter	0-9999	0	You can view and edit production counters. When the up-counting method (P27-N13 = 0) is selected, it can be decreased by keying. (⊖) ※ Press and hold the key to clear the counter. (⊖) When the down-counting method (P27-N13 = 1) is selected, it can be incremented by the key. (⊕)
P42 N01	Main control version	?	12	* The displayed value will change when the version is upgraded.
P42 N02	Panel control version	?	2610	* The displayed value will change when the version is upgraded
P42 N03	Speed signal	?	0	
P42 N04	Foot pedal AD value	?	Around 356	
P42 N05	Upper Axis Angle (Needle Upper Reference)	?	at UP Around 0	
P42 N06	Vertical Axis Angle (Needle Lower Reference)	?	at UP Around 180	
P42 N07	Voltage AD value	?	Around 285	
P42 N08 ~ P42 N11	Invalid			
P42 N12	Detailed information when an error occurs		0	0: Normal Other information: Contact CKD for details.
P43	Invalid			
P44	-	1-45	16	Do not change.
P45	-	1-50	30	Do not change.
P46	Reverse needle lifting function after thread trimming	ON/OFF	OFF	ON: Reverse needle lifting operation after thread trimming OFF: No reverse needle lifting operation after thread trimming
P47	Reverse needle lift angle after thread trimming	50-300	160	Adjust the angle to lift the needle in reverse rotation by counting from the top needle position after cutting the thread.
P48	Min. sewing speed (sti/min)	100-500	210	Min. sewing speed when sewing with pedal operation
P49	Sewing Speed (sti/min) at Thread Cutting	100-500	300	During thread cutting backtack.
P50	-	10-990	150	Do not change.
P51	-	1-60	30	Do not change.
P52	-	10-990	120	Do not change.

3. Operation panel

Parts Number	Item	Range	Initial value	Description
P53	Do not raise the presser foot when the pedal is pressed halfway.	ON/OFF	OFF	ON: The feeding frame does not move up. OFF: The presser foot moves up.
P54	Thread trimming operation time (ms)	10-990	200	Operating time required for thread trimming
P55	-	10-990	30	Do not change.
P56	Invalid			
P57	Protection time of presser foot solenoid (s)	1-60	5	Protection time of presser foot solenoid (s)
P58	Needle up stop position		1868	The value stored in P72 is displayed. ※ You cannot change the value here.
P59	Needle down stop position		668	The value stored in P73 is displayed. ※ You cannot change the value here.
P60	-	100-4000	3500	Do not change.
P61	-	ON/OFF	OFF	Do not change.
P62	-	ON/OFF	OFF	Do not change.
P63	-	ON/OFF	OFF	Do not change.
P64	-	1-250	30	Do not change.
P65	-	1-250	10	Do not change.
P66	Invalid			
P67	Invalid			
P68	Max. sewing speed (sti/min)	-3 Specification 100-5000	-3 Specifica tion 4000	Sewing speed upper limit for the whole sewing machine. This value limits the setting range of P01 and P60.
		-5 Specification 100-4000	-5 Specifica tion 4000	
P69	Invalid			
P70	Selecting and Initializing Head Specifications	-3/-5	-3	Select the head specification and perform initialization according to that specification.
P71	-	0-50	0	Do not change.
P72	Needle up stop position adjustment	0-2399	1868 Front and back	Adjust the needle upward stop position while turning the pulley by hand, and then press the key to save the current position (numerical value) as the needle upward stop position. (↩) [Precaution] The displayed value is the current reading. Use P58 to check the set value.
P73	Needle down stop position adjustment	0-2399	668 Front and back	By adjusting the needle lower stop position while turning the pulley by hand and pressing the key, the current position (numerical value) can be saved as the needle lower stop position. (↩) [Precaution] The displayed value is the current reading. Use P59 to check the set value.
P74	Invalid			
P75	Invalid			
P76	-	10-990	200	Do not change.
P77	Timing of turning on the solenoid when sewing backward	20-350	160	Decreasing the value will shorten the C length of the post-stop sewing. Increasing the value increases the length of C for the post-stop sewing.
P78	Thread presser foot ON angle	5-359	100	Thread presser foot ON angle
P79	Thread presser foot OFF angle	5-359	270	Thread presser foot OFF angle
P80 ~ P88	Invalid			

3. Operation panel

Parts Number	Item	Range	Initial value	Description
P89	Voltage rise error detection voltage	410-420	410	Set the voltage to detect the voltage rise error (E01). (It will be about 1.4 times the power supply voltage)
P92	Sewing machine motor electric angle correction		Around 620	 Press the key and the upper axis will slowly rotate one turn to read the encoder start angle. It is set at the factory. Do not change the value of the parameter by itself (it is not possible to change the value of the parameter manually. If it is changed by itself, an abnormality or damage may occur to the control box and motor).
P93	Semi-depressing operation time (ms)	10-900	200	Semi-depressing operation time (ms)
P94	Invalid			
P95	Invalid			
P96	-	0-20	10	Do not change.
P97	-	0-10	5	Do not change.
P98 ~ P100	Invalid			
P101	Thread release start angle	1-359	30	Thread loosening start angle (The lower position is calculated as 0°)
P102	Thread release end angle	1-359	180	Thread loosening end angle (the position below is calculated at 0° and must be greater than the value of P101 parameter)
P103 ~ P112	Invalid			
P113	-	50-100	80	Do not change.
P114 ~ P116	Invalid			
P117	-	0-990	8	Do not change.
P118	Invalid			
P119	-	0-1	1	Do not change.
P120 ~ P127	Invalid			
P128	Restoring the Factory Default Settings	0000-9999	0000	Enter the version number of the panel and press the key to initialize all data based on the setting of P70.  Provided, however, that the following shall be excluded. P18,P19,P25,P26,P27-N04,P32,P33,P58,P59,P70,P92
P129 ~ P150	Invalid			
P151	-	0-1	0	Do not change.
P152	-	0-990	100	Do not change.
P153	-	0-990	30	Do not change.
P154	-	0-990	30	Do not change.
P155	-	0-100	90	Do not change.
P156 ~ P158	Invalid			
P159	Intake switch	0-1	1	0:OFF;1:ON
P160	Inspiratory time (ms)	5-5000	500	Inspiratory time (ms)

3-12. List of Error Codes

Error code	Problem Description	Solution
E01	Abnormal voltage rise	①Whether the grid-voltage is higher than AC260V; ②If power is supplied by private power generation, reduce the power of the generator; ③If it still does not work properly, replace the control box and contact after-sales service.
E02	Abnormal voltage drop	①Whether to insert a low voltage; ②Restore Factory Settings; ③If it still does not work properly, replace the control box and contact after-sales service.
E03	Communication error between main CPU and panel CPU	①Turn off power to the system, check for loose or disconnected monitor cables, return to normal condition, and then restart the system. ②Switch off the system, remove the electronic control box, plug in the power cord only and turn on the power to alert E05 or not to alert E03, replace the control box and notify the after-sales service.
E05	Abnormal speed control signal	①Check if the speed control connector is loose or disconnected, return to normal, and restart the system. ②If it still does not work properly, replace the control box or speed control and contact after-sales service.
E07	Error sewing machine motor rotation	①Turn off the power and check if the handwheel rotates smoothly (handwheel). If it cannot rotate, check the desk machine; ②Turn off the power, check if the power connector of the motor is loose, connect and restart; ③Check if the needle position above is correct and adjust the upper position if it is incorrect; ④If it still does not work, replace the control box or machine motor and contact after-sales service.
E08	Manual sewing return operation for 30 seconds or longer	Since the suction time of the reversing solenoid is too long, it is sufficient to restart the product. If E-08 is to be reported after restarting the appliance, check that the manual backseam switch is not damaged.
E10	Overcurrent of solenoid	①Remove the solenoid interface such as alarm E10, replace the control box, and notify after-sales service. ②If the alarm does not sound when the solenoid connector is unplugged, replace the connector. 1)The front pedal reinforces the sewing by sandwiching a thread in the sewing machine. If there is an alarm, turn off the front and rear stepping, restart the electronic control to depress the front stepping, and if there is an alarm, turn off the function to pinch the thread and restart the electronic control. If there is no alarm, replace the yarn sandwiching device. 2)The pre-pedal has a sewing machine to pinch thread and perform reinforcement sewing. If there is an alarm, the pre-reinforcement and the post-reinforcement are turned off. The electronic control is restarted by restarting the pre-step. If there is no alarm, the electronic control is turned off and the electronic control is restarted. The pre-reinforcement sewing function is turned on and the pre-step is performed again. If there is an alarm, the reverse sewing solenoid is replaced. 3)Pressing the pedal to have the sewing machine scissors and stiffen the thread and, if there is no alarm, press the pedal halfway to raise the foot and replace the foot solenoid if there is an alarm; 4)Pedal in front of the sewing machine to sciss and reinforce the thread, half-reversely pedal to hold down the foot, and if there is no alarm, step all reversely to cut the thread, and if there is an alarm, cut the thread and replace the solenoid;

3. Operation panel

E09 E11	Positioning signal error of the sewing machine motor encoder	<p>①Turn off the system, check for loose or disconnected sewing machine motor encoder connectors, return to normal, and restart the system.</p> <p>②Check if the zero point correction setting of the motor is correct. Motor Zero Correction Re-setting;</p> <p>③Clean the encoder disc for oil, if any;</p> <p>④If it still does not work, replace the control box or machine motor and contact after-sales service.</p>
E14	Encoder signal error of sewing machine motor	<p>①Turn off the system, check for loose or disconnected sewing machine motor encoder connectors, return to normal, and restart the system.</p> <p>②Check if the grating is properly installed (whether the grating screw is securely fastened and if the grating is centered in the encoder head). ;</p> <p>③Check if the raster code disc has oils. Clean and replace any oil before restarting the system;</p> <p>④If it still does not work, replace the control box or machine motor and contact after-sales service.</p>
E15	Sewing machine motor drive overcurrent	<p>①Check the motor power cord for loose connections;</p> <p>②Check the motor power cord for crushing;</p> <p>③Replace the control box or the sewing machine motor and inform us of the after-sales service.</p>
E17	Falling of the sewing machine head was detected.	<p>①Turn off the system and check that the sewing machine head is not tipping over;</p> <p>②Check if the detection setting of the handpiece protection switch is correct;</p> <p>③If it still does not work, replace the control box or panel and contact after-sales service.</p>
E20	The sewing machine motor failed to start.	<p>①Turn off the system, check for loose or disconnected power cables and encoder connectors on the sewing machine motor, return to normal, and restart the system.</p> <p>②Check if the origin correction setting is correct. Re-setting of origin correction</p> <p>③If it still does not work, replace the control box or machine motor and contact after-sales service.</p>
E42	EEPROM read/write failure	<p>①Restore Factory Settings;</p> <p>②If it still does not work properly, replace the control box and contact after-sales service.</p>
E43	CPU trap reset	<p>①Restore Factory Settings;</p> <p>②If it still does not work properly, replace the control box and contact after-sales service.</p>
E44	CPU voltage reset	<p>①Restore Factory Settings;</p> <p>②If it still does not work properly, replace the control box and contact after-sales service.</p>
E45	CPU watchdog alarm	<p>①Restore Factory Settings;</p> <p>②If it still does not work properly, replace the control box and contact after-sales service.</p>

3-13. About USB Ports

Note

-  Do not connect a crisis that requires more than the following ratings to the USB port.
Voltage rating: DC5V
Maximum current rating :1 A
-  When not using the USB port, be sure to cover the USB port with the connector cover.
Failure to do so may cause dust to enter the product.

The USB port is located at the following location:

Remove the connector cover before use.



4. Care

Note

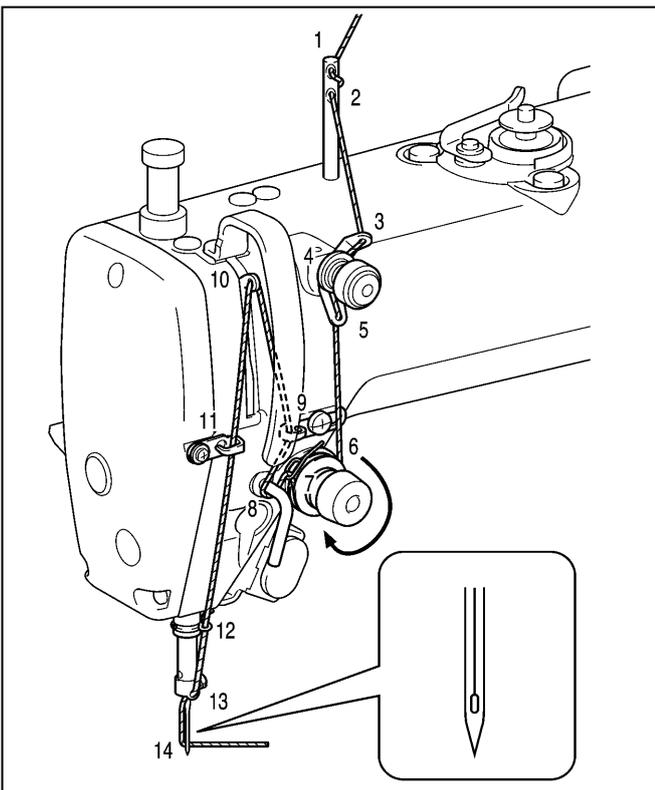
-  Turn off the power switch before starting work.
If you step on the treadboard accidentally, the sewing machine may operate and cause injury.
-  When handling lubricating oil or grease, use protective goggles or gloves to avoid contact with your eyes or skin. Doing so may cause irritation.
Do not swallow or eat lubricating oil or grease. Diarrhea and vomiting may occur.
Keep it out of the reach of children.
-  When tilting the sewing machine head, fix it so that the table does not move.
Movement of the table may cause injuries such as pinching the foot.
-  Use both hands to tilt or pull back the machine.
If you do so with one hand, your hand may slip due to the weight of the sewing machine and cause injuries such as injuries.

To maintain the function of this machine and to use it for a long time, perform maintenance daily as follows.

Also, if the machine has not been used for a long time, perform the following maintenance before using the machine.



1. Be sure to supply oil when the oil level drops below the LOW baseline of the oil pan.



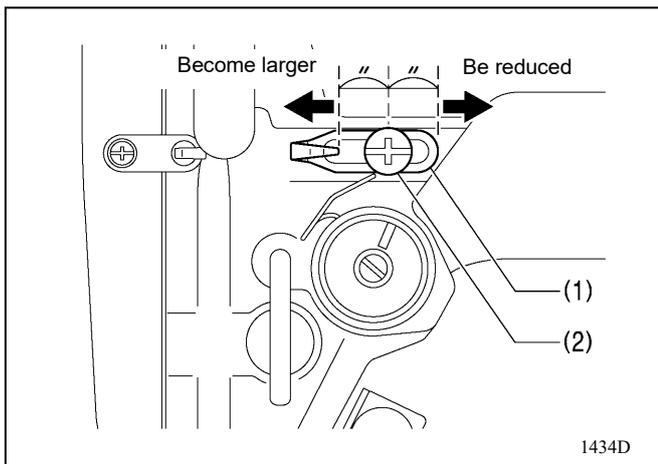
2. Return the machine head.
3. Replace the needle if it is bent or the needle tip is crushed.
4. Check that the needle thread is correctly threaded.
5. Perform a trial sewing.

5. Standard adjustment

! Note

-  The machine must be serviced by a trained technician.
-  Have electrical service and inspection performed by a qualified electrician.
-  If the safety guard is removed, be sure to install it in its original position and check that it functions properly.
-  When tilting the sewing machine head, fix it so that the table does not move. Movement of the table may cause injuries such as pinching the foot.
-  Use both hands to tilt or pull back the machine. If you do so with one hand, your hand may slip due to the weight of the sewing machine and cause injuries such as injuries.
-  Turn off the power switch and unplug the power cord in the following cases:
 If the treadle is depressed by mistake, the sewing machine may operate and cause injury.
 - Inspection, adjustment or repair
 - Replacement of consumable parts such as a hook and knife
-  When opening the motor cover, be sure to turn off the power switch, and then wait for one minute before opening the cover. Touching the motor surface may cause burns.
-  If you need to make adjustments while the power switch is turned on, use extreme safety precautions.

5-1. Arm thread guide R



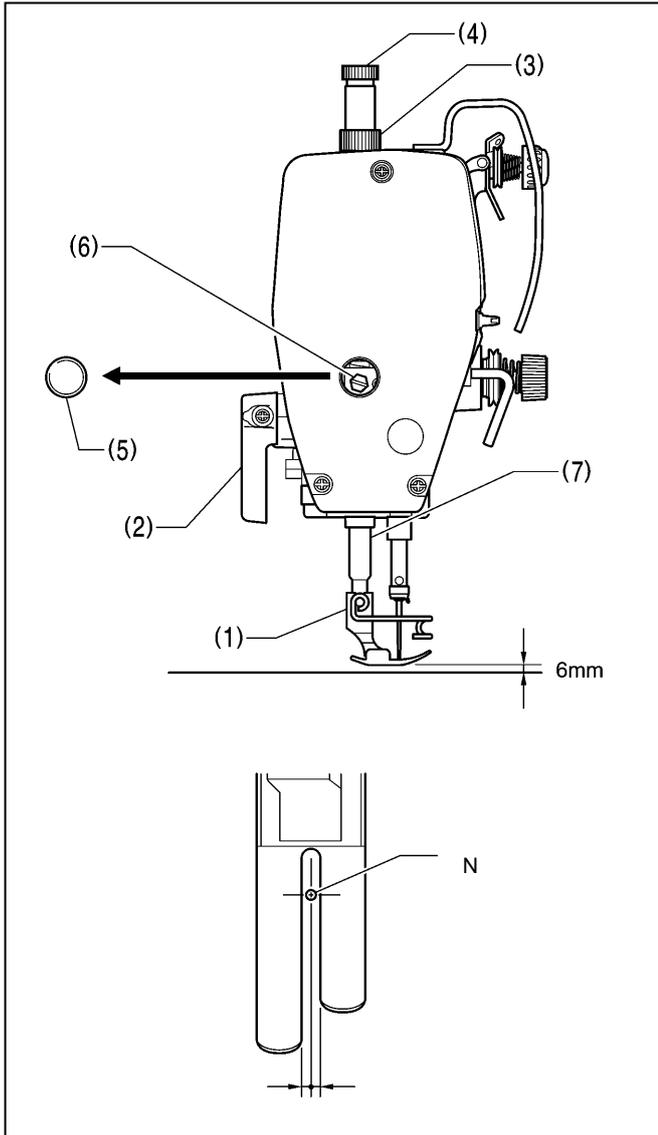
The standard position of the arm thread guide R(1) is that the fastening screw (2) is set at the center of the arm thread guide R(1) adjustment range.

[Precaution]

Adjustment is made by loosening the screw (2) and moving the arm thread guide R (1).

- When sewing heavy objects, move arm thread guide R (1) to the left. (The amount of thread on the balance is increased.)
- When sewing a thin object, move the arm thread guide R (1) to the right. (The amount of thread on the balance is reduced.)

5-2. Height of presser foot



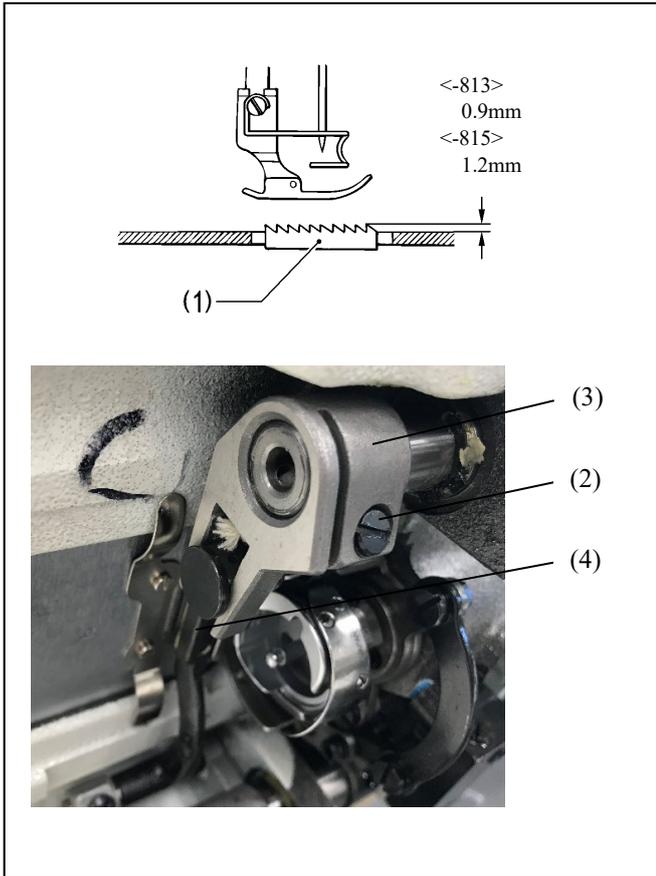
When the presser foot (1) is lifted by the presser foot lifter (2), the standard presser foot lift is 6mm.

1. Loosen the nut (3) and loosen the presser foot adjusting screw (4) so that the presser foot pressure is not applied.
2. Raise the presser foot (1) with the presser foot lifter (2).
3. Remove the rubber stopper (5) on the face plate.
4. Loosen the bolt (6) and move the presser bar (7) up and down to adjust the height of the presser foot (1) to 6mm.
5. Tighten the bolts (6).
6. Attach the rubber stopper (5).
7. Adjust the presser foot pressure with the presser foot adjusting screw (4) and tighten the nut (3).

[Precaution]

After adjustment, turn the sewing machine pulley and confirm that the needle is lowered to the center of the groove of the presser foot.

5-3. Feed dog height

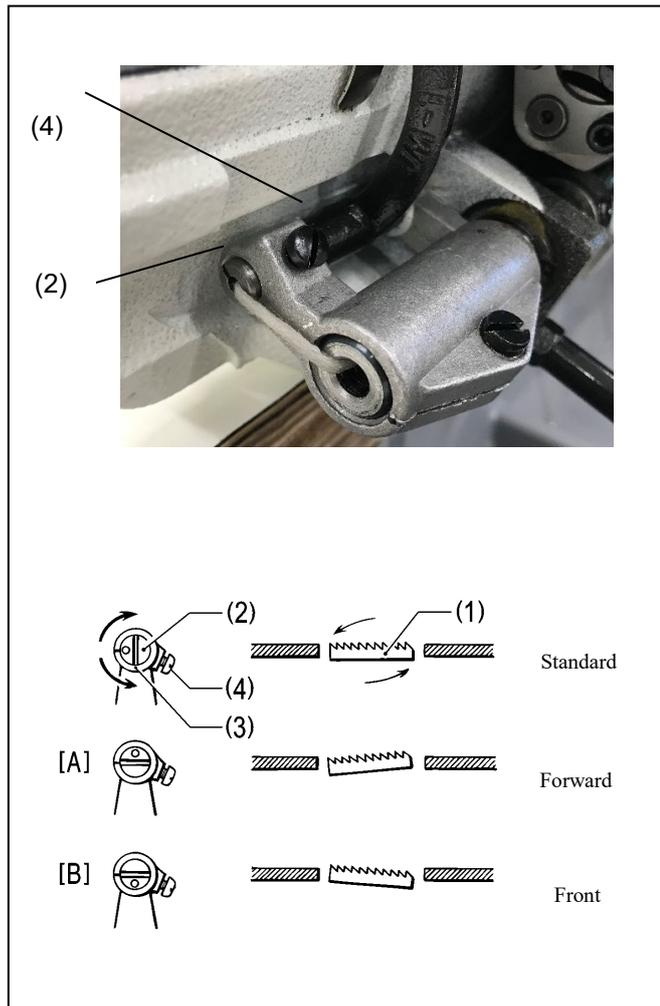


1. Turn on the power.
2. Set the feed pitch to 5mm.

*The standard height when the feed dog (1) is raised most from the top surface of the needle plate is 0.9mm for the-813 specification and 1.2mm for the-815 specification.

3. Turn the sewing machine pulley and stop the feed dog (1) at the uppermost position.
4. Lower the sewing machine.
5. Loosen the screw (2).
6. Turn the vertical feed arm (3) and move the feed bar (4) up and down to adjust.

5-4. Inclination of the feed dog



1. Turn on the power.
2. Set the feed pitch to 5mm.

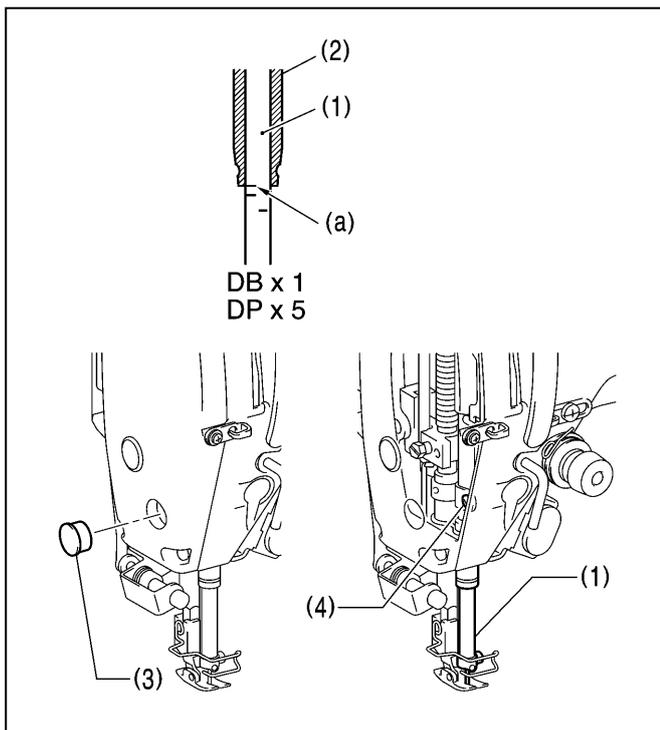
*The standard inclination when the feed dog (1) moves down and coincides with the top surface of the needle plate is the same for the feeder shaft (2) and the horizontal feeder arm (3), and the feed dog (1) is parallel to the needle plate.

3. Turn the sewing machine pulley and stop the feed dog (1) at the uppermost position.
4. Lower the sewing machine.
5. Loosen set screw (4) [1 pc.].
6. Adjust the feed bar shaft (2) to the normal position within 90° in the direction indicated by the arrow.
 - To prevent puckering, lower the inclination of the upper surface of the feed dog (1) toward you. ([B] diagram)
 - To prevent fabric misalignment [sewing no.], raise the inclination of the upper surface of the feed dog (1) toward you. ([A] diagram)
7. Securely tighten setscrews (4) [1 pc.].

[Precaution]

Adjusting the inclination of the feed dog (1) changes the height of the feed dog (1). Adjust the height of the feed dog (1) again.

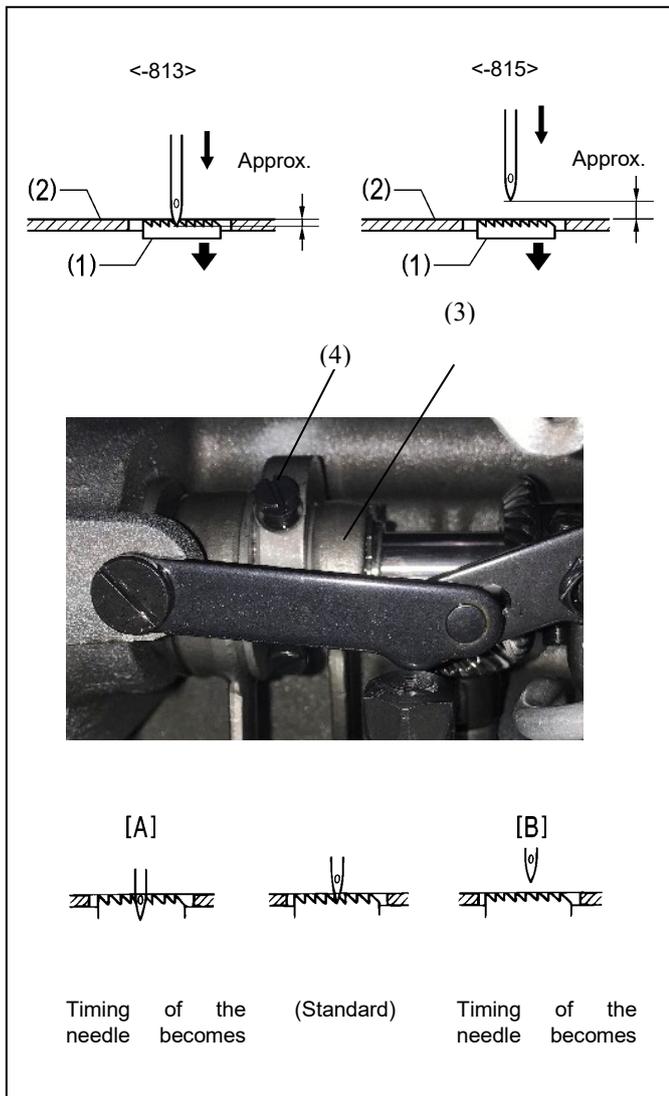
5-5. Height of the needle bar



When the needle bar (1) comes to the lowest position, make sure that the base line (a) of the needle bar (1) coincides with the lower end of the needle bar metal (2) as shown in the figure.

1. Turn the sewing machine pulley and set the needle bar (1) to the lowest position.
2. Remove the rubber stopper (3) on the face plate.
3. Loosen the screw (4) and adjust the needle bar (1) by moving it up and down.
4. Tighten the screw (4) securely.
5. Attach the rubber stopper (3).

5-6. Timing of needle and feed



1. Turn on the power.
2. Set the feed pitch to 5mm.

*When the feed dog (1) is moved down from the uppermost position and coincides with the top surface of the needle plate (2), the needle tip is at the standard position as shown in the figure on the left.

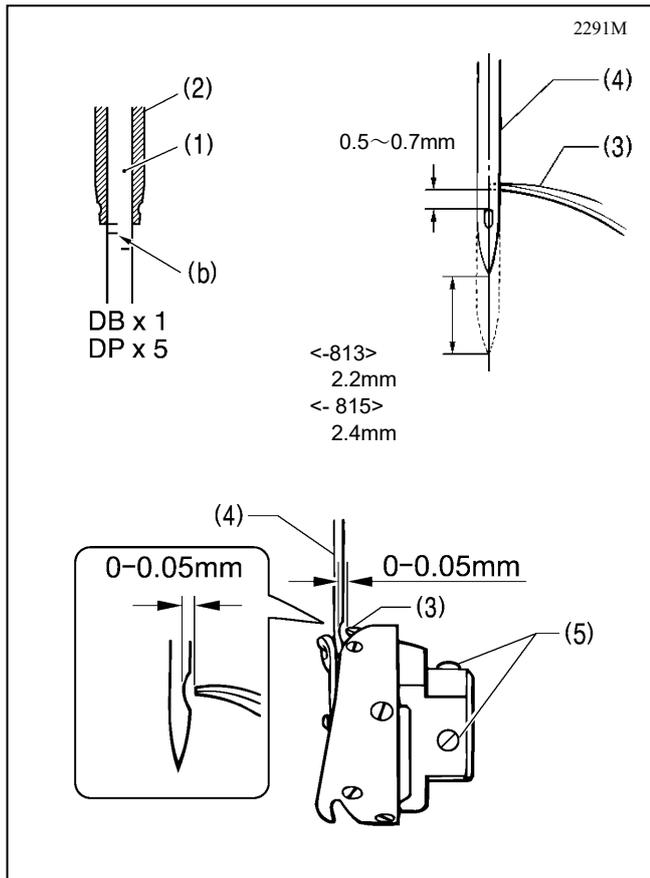
3. Remove the side panels.
4. Loosen the set screws (4) [2 pcs.] of the eccentric wheel (3) and adjust by turning the eccentric wheel (3) slightly.
 - To advance the needle timing, turn in the direction of <A>. To delay the needle timing, turn in the direction of .
 - Delay the timing of the needle to prevent fabric misalignment (eventually sewing). ([B] diagram)
 - Timing of the needle is advance to improve thread tightness. ([A] diagram)

[Precaution]

Turning the eccentric wheel (3) too far in the direction of <A> may cause needle breakage.

5. After adjustment, tighten the set screw (4) securely.
6. Replace the side panels.

5-7. Timing of the needle and the hook



When the needle bar (1) rises 2.2mm (-813 specification) and the-815 specification is 2.4mm above the lowest position and the base line (b) coincides with the lower end of the needle bar bush (2) as shown in the figure, the hook tip (3) should coincide with the center of the needle (4).

(At this time, the clearance between the top edge of the needle hole and the tip of the hook blade is 0.5 to 0.7mm.)

1. Turn the sewing machine pulley to raise the needle bar (1) from the lowest position and align the base line (b) with the lower end of the needle bar bush (2) as shown in the figure.
2. Loosen set screws (5) [3 pieces] and align hook tip (3) with the center of needle (4).
At this time, the clearance between the tip of the hook (3) and the needle (4) should be 0 to 0.05mm.
3. Securely tighten the set screws (5) [3 pcs.].

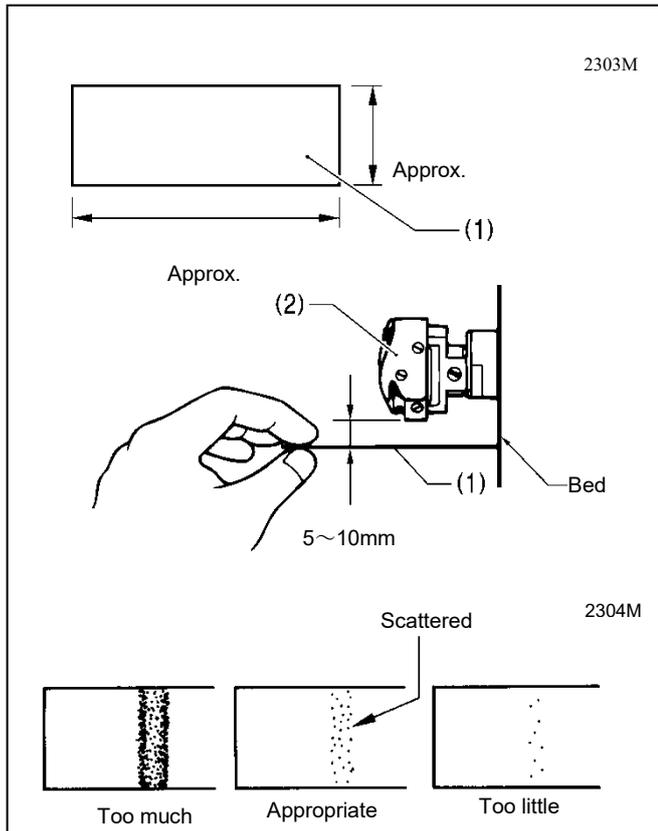
5-8. Adjusting the amount of oil supply to the hook

! Note



When checking the amount of oil supplied to the hook, make sure that your fingers and the oil level check paper do not touch moving parts such as the hook and feeding mechanism. May cause injury.

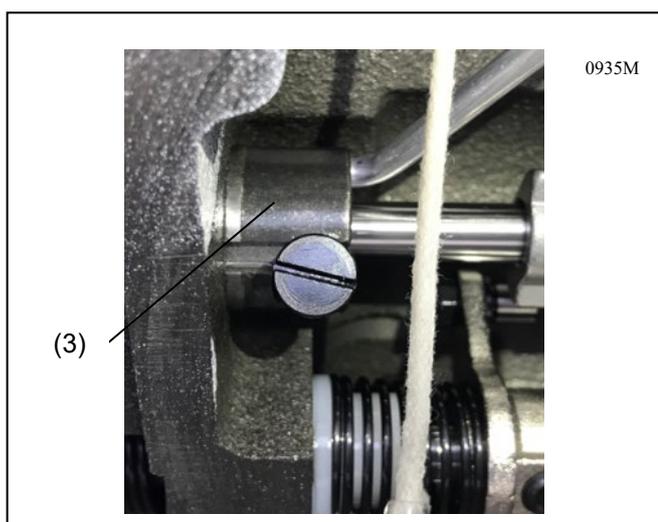
When changing the hook or changing the sewing speed, adjust the oil supply amount of the hook according to the following procedure.



<Checking the Lubrication Amount>

1. Remove the upper thread from the tread take-up to the needle.
2. Raise the presser foot with the presser foot lifter.
3. Run the sewing machine for approximately 1 minute at the actual sewing speed [moderate intermittent operation].
4. Insert the oil level check sheet (1) into the bottom of the hook (2) and hold it, and run the sewing machine for eight seconds at the actual sewing machine speed.
(Any paper quality can be used for the oil level check sheet (1).)
5. Check the amount of oil scattered on the paper.

When adjustment is necessary, perform the following steps <Adjusting the Lubrication Amount>.



<Adjusting the Lubrication Amount>

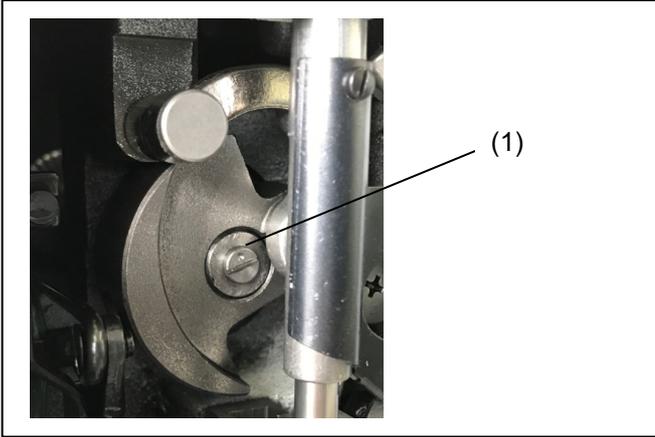
1. Lower the sewing machine.
2. Oil adjusting screw (3) to adjust the amount of lubrication.
 - Turn the oil adjusting screw (3) clockwise to increase the amount of lubrication.
 - Turn the oil adjusting screw (3) to the left to decrease the amount of lubrication.
3. Check the amount of lubrication referring to "Checking the amount of lubrication" above.

[Precaution]

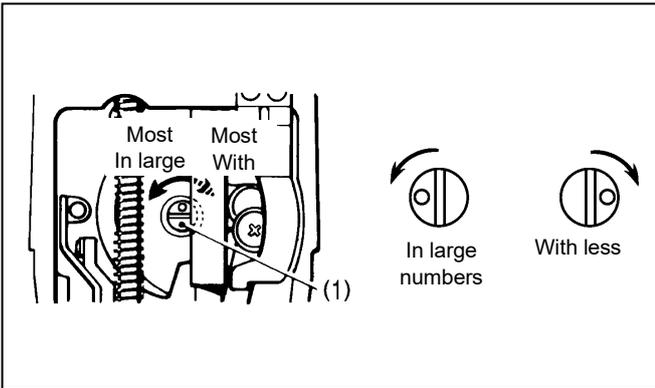
Repeat adjusting the oil adjusting screw (3) and checking the oil supply until the proper oil level is achieved.

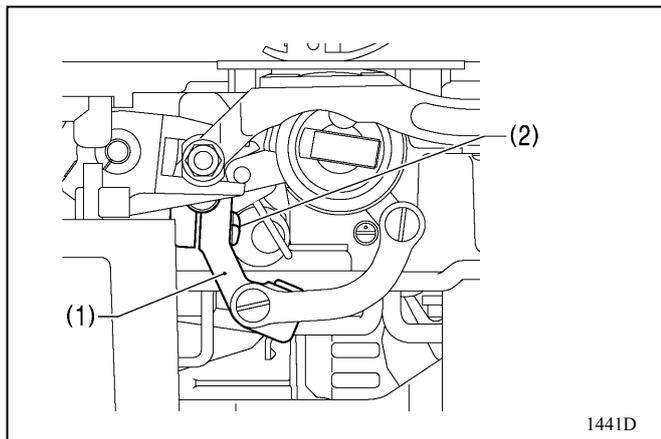
4. Check the lubrication amount again after sewing for approx. 2 hours.

5-9 Adjusting the Upper Shaft Lubrication Amount

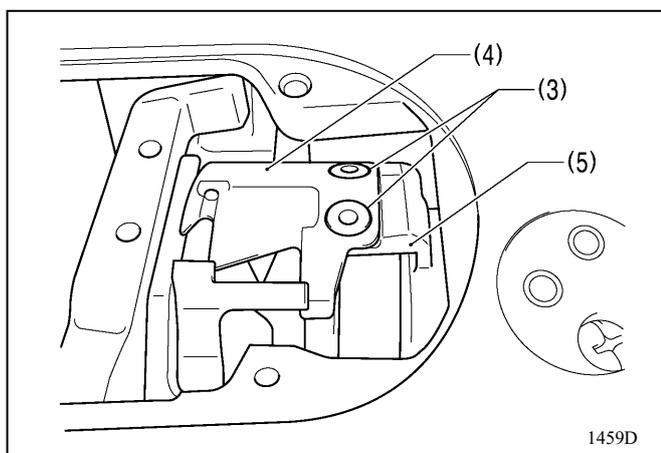


1. Remove the face plate, and turn the upper shaft lubrication screw (1) to adjust the amount of lubrication.



5-10. Thread trimmer

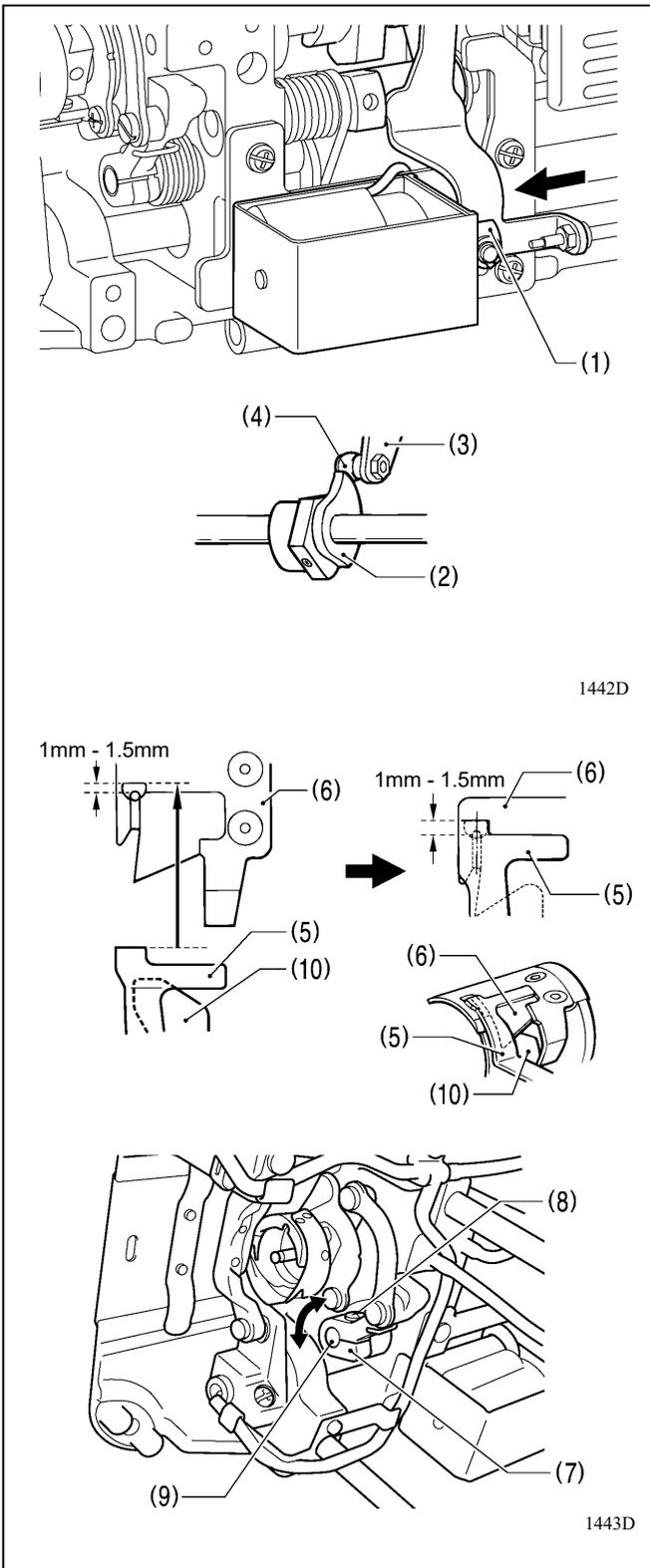
1. Turn off the power switch.
2. Remove the presser foot, needle plate and feed dog.
3. Lower the sewing machine head.
4. Loosen the screw (2) of the thread trimmer lever (1).

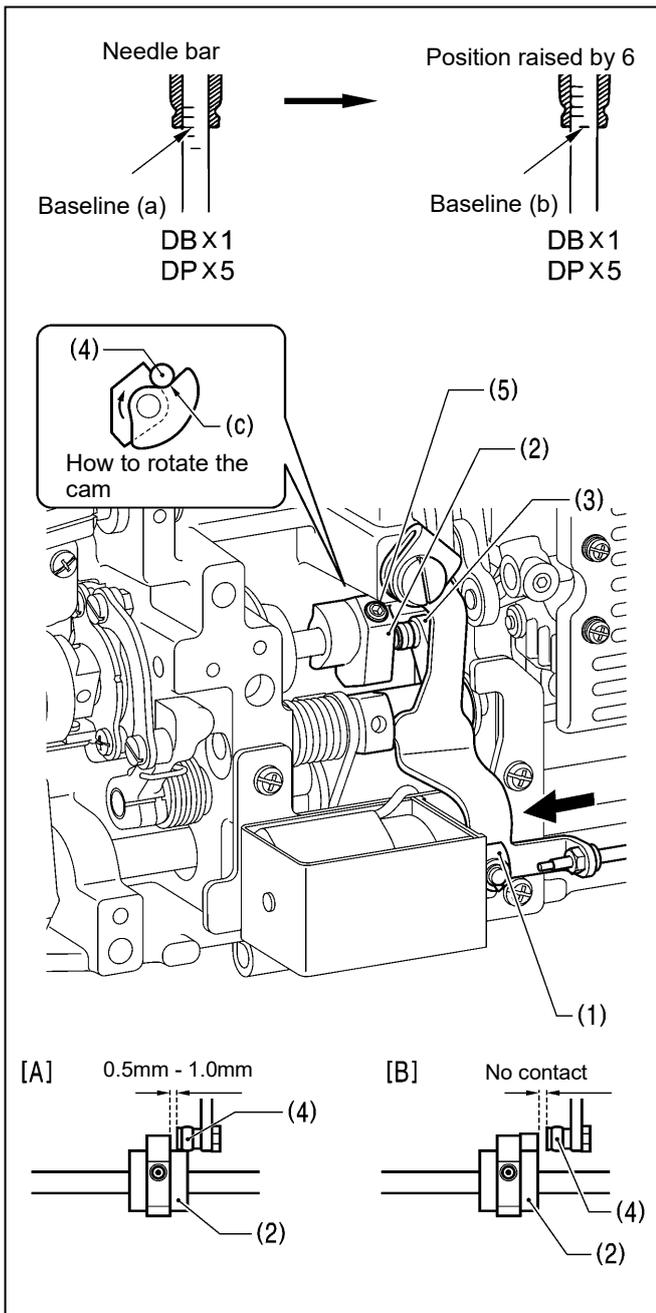


5. Attach the moving knife (4) to the moving knife holder (5) with the screws (3) [2 pcs.].

<Adjusting the Position of the Movable knife and Fixed knife >

1. Turn the sewing machine pulley and push the plunger (1) of the thread trimmer solenoid with your finger.
2. Turn the sewing machine pulley as it is, adjust the position by moving the thread trimmer lever (7) so that the engagement amount between the tip of the fixed knife (5) and the moving knife (6) is 1 to 1.5mm when the roller shaft (4) of the thread trimmer cam lever set (3) climbs on the thread trimmer cam (2), and then tighten the tightening screw (8).
 - * Tighten the screw (8) so that the forked shaft (9) is not rattled.
 - * Be sure to place the lower thread finger (10) under the moving knife (6).
3. Attach the feed dog, needle plate, and presser foot.



<Adjusting the position of the thread trimmer cam>

1. Push the plunger (1) of the thread trimmer solenoid in the direction of the arrow with your finger while the needle bar is raised by 6mm from the lowest position and the base line (b) is aligned with the lower end of the needle bar metal.

Adjust the position of the thread trimmer cam (2) so that the roller shaft (4) of the thread trimmer cam lever set (3) comes into contact with the bore (c) of the thread trimmer cam (2) and the clearance between the end face of the thread trimmer cam (2) and the roller shaft (4) is 0.5 to 1.0mm. Then tighten the set screw (5). ([A] diagram)

2. Check that the end face of the thread trimmer cam (2) and the roller shaft (4) do not come into contact when the roller shaft (4) is returned to the right.

([B] diagram)

* Tighten the set screws (5) [2 pcs.] with approx. 4N·m.

6. In the following cases

- Check the following points before contacting us for repair or service.
- If the problem is not resolved by the following measures, turn off the power switch and contact a trained technician or your dealer.

Note



Turn off the power switch and unplug the power cord before starting work.
If you step on the treadboard accidentally, the sewing machine may operate and cause injury.

6-1. Sewing-related

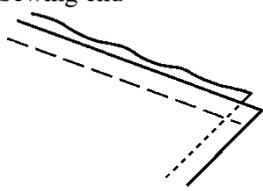
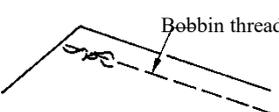
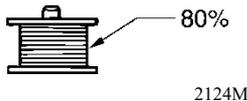
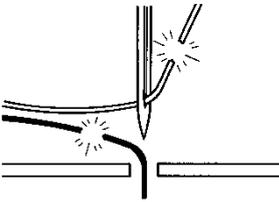
Items marked with an asterisk (*) on the reference page should be examined by a trained technician.

Phenomenon	As you look into	Reference page
<p>1 The needle thread does not tighten.</p>  <p>0573M</p>	<ul style="list-style-type: none"> • Check if needle thread tension is too low. Or, is the bobbin thread tension too strong? Adjust the needle thread tension and bobbin thread tension. • Is the timing of the needle and feed appropriate? Please expedite the timing of the guideline. 	30*
<p>2 Bobbin thread does not tighten</p>  <p>0574M</p>	<ul style="list-style-type: none"> • Check if needle thread tension is too strong. Or, is the bobbin thread tension too weak? Adjust the needle thread tension and bobbin thread tension. 	
<p>3 Improper thread tightening of towel eyes, etc.</p>  <p>0977M</p>	<ul style="list-style-type: none"> • Check that the thread guide is not slipping properly. Polish each thread guide with fine paper file or buffing, etc. • Are there bad slippage of the bobbin? Pull out the bobbin thread and check if there is any unevenness in the tension of the thread. Replace the bobbin or bobbin case. 	
<p>4 Skipping in the middle of sewing</p>  <p>0470M</p>	<ul style="list-style-type: none"> • Check if the needle tip is bent. Is the needle tip crushed? Replace the needle if it is bent or crushed. • Are you wrong with how to attach the needle? If it is wrong, attach the needle correctly. • Is there a mistake in threading? If it is wrong, thread correctly. • Is the presser foot pressure too weak? Adjust the presser foot pressure. • Check if the needle is too fine. Replace with a thicker 1-rank needle. • Check if the presser foot is floating. Adjust the height of the presser foot. • Check if the thread take-up spring is too weak. Adjust the strength of the thread take-up spring. • Check that the timing of the needle and the hook are correct. Adjust the height of the needle bar. Adjust the gap between the needle and the hook tip. 	<p>25</p> <p>28*</p> <p>*</p> <p>30*</p> <p>31*</p>

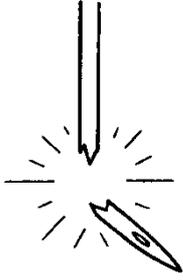
6. In the following cases

	Phenomenon	As you look into	Reference page
5	<p>Skipping at the start of sewing Thread missing at the start of sewing</p>  <p style="text-align: right;">0479M</p>	<ul style="list-style-type: none"> • Check if the thread take-up spring is too strong. Reduce the strength of the thread take-up spring. • Check if the thread take-up spring has an excessive operating range. Lower the position of the thread take-up spring. • Check that the remaining amount of needle thread from the needle hole is not short after thread trimming. Adjust the pretension. • Isn't the thread not sharp? Grind or replace the fixed blade with an oilstone. Replace the moving blade. • Check if the needle is too thick. Replace the needle with a narrow one. • Check that the bobbin thread protruding from the bobbin case is not too short after thread trimming. Replace the anti-slip spring of the bobbin case if the bobbin idles. • Is the speed at the start of sewing too fast? Set the operation panel with slow start. • Is the needle upward stop position too high? Adjust the needle upward stop position. 	<p style="text-align: center;">*</p> <p style="text-align: center;">*</p> <p style="text-align: center;">26*</p> <p style="text-align: center;">20*</p> <p style="text-align: center;">23*</p>
6	<p>Uneven seam</p>  <p style="text-align: right;">0473M</p>	<ul style="list-style-type: none"> • Is the presser foot pressure too weak? Adjust the presser foot pressure. • Is the height of the feed dog too low? Adjust the height of the feed dog. • Is the bobbin scratched? If it is damaged, correct it. Or replace the bobbin. 	<p style="text-align: center;">29*</p> <p style="text-align: center;">*</p>
7	<p>Have more puckering (Too tight)</p>  <p style="text-align: right;">0978M</p>	<ul style="list-style-type: none"> • Check if needle thread tension is too strong. Decrease the needle thread tension as much as possible. • Check if bobbin thread tension is too strong. Lower the bobbin thread tension as much as possible. • Is the needle tip crushed? Replace the needle if it is crushed. • Check if the needle is too thick. Replace the needle with a smaller one as much as possible. • Check if the thread take-up spring is too strong. Decrease the strength of the thread take-up spring as much as possible. • Check if the thread take-up spring has an excessive operating range. Lower the position of the thread take-up spring as much as possible. • Is the presser foot pressure too strong? Adjust the presser foot pressure. • Is the sewing speed too fast? Set the maximum sewing speed slower in small increments on the operation panel. • Is the inclination of the feed dog appropriate? Keep the feed tooth slightly down. 	<p style="text-align: center;">*</p> <p style="text-align: center;">*</p> <p style="text-align: center;">15*</p> <p style="text-align: center;">29*</p>

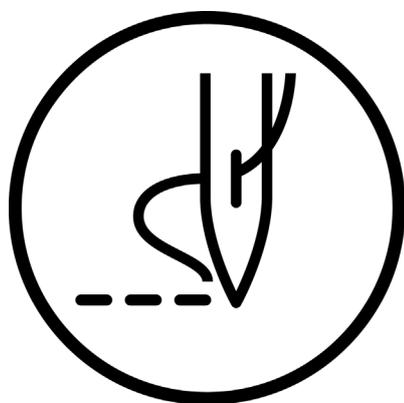
6. In the following cases

	Phenomenon	As you look into	Reference page
8	Sewing end  0750M	<ul style="list-style-type: none"> Is the presser foot pressure too strong? Adjust the presser foot pressure. 	
9	Bobbin thread is caught at the start of sewing Idling of the bobbin during thread trimming  0751M	<ul style="list-style-type: none"> Check that the rotation direction of the bobbin when the bobbin thread is pulled is correct. Set the rotation direction of the bobbin opposite to the rotation direction of the hook. Is the bobbin thread winding amount too large? The bobbin thread winding amount should be up to 80%.  Is the anti-slip spring installed? Install an anti-slip spring. Are there bad slippage of the bobbin? If slippage is poor, replace the bobbin. Is the bobbin made of a light alloy specified by Brother? Replace with the specified bobbin. 	
10	The needle thread and bobbin thread are broken.  0471M	<ul style="list-style-type: none"> Check if the needle tip is bent. Is the needle tip crushed? Replace the needle if it is bent or crushed. Are you wrong with how to attach the needle? If it is wrong, attach the needle correctly. Is there a mistake in threading? If it is wrong, thread correctly. Check if needle thread tension or bobbin thread tension is too strong or too weak. Adjust the tension of the needle thread and bobbin thread. Check if the needle thread is loose because the thread take-up spring has a small amount of operation. Adjust the position of the thread take-up spring. Check that the hook and feed dog are not damaged. If it is damaged, polish it with an oilstone, etc. Alternatively, replace the damaged part. Check the thread guides for damage. If it is damaged, polish it with paper, etc. Alternatively, replace the damaged part. 	25 25* * *
11	Thread trimming error (both upper and lower threads are not broken.)	<ul style="list-style-type: none"> Are there any scratches or wear and tear on the blade of the fixed blade or moving blade? Replace the fixed blade and moving blade. 	26*
12	Thread trimming error (The needle thread cannot be broken.) (Bobbin thread does not break.)	<ul style="list-style-type: none"> Are you wrong with how to attach the needle? If it is wrong, attach the needle correctly. Is the fixed blade or moving blade not sharp? Replace the fixed blade and moving blade. 	26*

6. In the following cases

	Phenomenon	As you look into	Reference page
13	<p>Needle breakage</p>  <p>0469M</p>	<ul style="list-style-type: none"> • Whether the cloth is forcibly pulled or pushed during sewing. • Are you wrong with how to attach the needle? If it is wrong, attach the needle correctly. • Check if the needle tip is bent. Are the needle tips crushed or clogged? Replace the needle. • Check that the timing of the needle and the hook are correct. Adjust the height of the needle bar. Adjust the gap between the needle and the hook tip. • Check whether the timing of the needle is too fast for the feed dog. Delay the timing of the needle. <p>Caution</p> <ul style="list-style-type: none"> • A broken needle can be very dangerous if it gets caught in sewn objects, etc. Search for debris until the shape of the needle can be restored. • We also recommend thorough needle management as a measure against the PL Law, such as keeping these needles on records. 	<p>30*</p> <p>31*</p> <p>30*</p>
14	<p>The sewing machine does not operate even when the power switch is turned on and the treadboard is stepped on.</p>	<ul style="list-style-type: none"> • Check whether the power connector of the control box is disconnected. Securely insert the cable. 	<p>7~10</p>
15	<p>Cannot operate at high speed</p>	<ul style="list-style-type: none"> • Check whether sewing speed and sewing stop speed are set slower. Set the maximum sewing speed to high. 	<p>15*</p>
16	<p>Nothing is displayed on the operation panel.</p>	<ul style="list-style-type: none"> • Check whether the power connector of the control box is disconnected. Securely insert the cable. • Check whether the control box operation panel connector is disconnected. Securely insert the cable. 	<p>7~10</p> <p>7*</p>

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Instruction Manual

* Due to product improvements, some of the contents of this manual may differ from the products you purchased.

ブラザー工業株式会社 <http://www.brother.co.jp/>
〒448-0803 5 TEL 1, Kitajizozan, Noda-cho, Kariya City: 566-95-0085

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