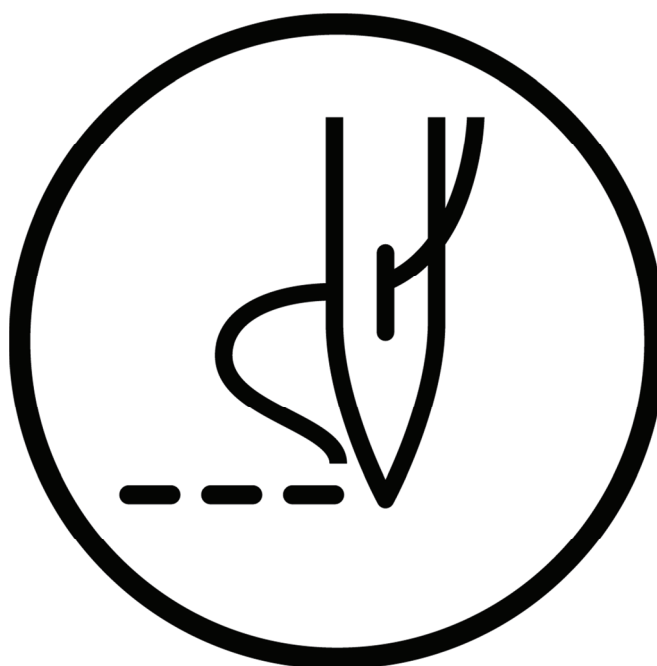


BAS-360H BAS-365H

INSTRUCTION MANUAL

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

PROGRAMMABLE ELECTRONIC PATTERN SEWER



brother

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

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




SAFETY INSTRUCTIONS

[1] Safety indications and their meanings

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

The meanings of these indications and symbols are given below.

Indications

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

Symbols



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



..... This symbol ($\textcircled{/}$) indicates something that you must not do.



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

[2] Notes on safety

DANGER



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

WARNING



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



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

CAUTION

Environmental requirements



Use the sewing machine in an area which is free from sources of strong electrical noise such as electrical line noise or static electric noise. Sources of strong electrical noise may cause problems with correct operation.



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



The power supply capacity should be greater than the requirements for the sewing machine's power consumption. Insufficient power supply capacity may cause problems with correct operation.



The pneumatic delivery capability should be greater than the requirements for the sewing machine's total air consumption. Insufficient pneumatic delivery capability may cause problems with correct operation.



The ambient temperature should be within the range of 5°C to 35°C during use. Temperatures which are lower or higher than this may cause problems with correct operation.



The relative humidity should be within the range of 45% to 85% during use, and no dew formation should occur in any devices. Excessively dry or humid environments and dew formation may cause problems with correct operation.



In the event of an electrical storm, turn off the power and disconnect the power cord from the wall outlet. Lightning may cause problems with correct operation.



Do not connect anything to the USB port other than the USB memory. If this is not observed, problems with operation may result.

Installation



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



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



Do not connect the power cord plug until installation is complete.

If this is not done, the sewing machine may operate if a switch is pressed by mistake, which could result in serious injury.



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



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



Attach the safety cover.



Lower the adjusters to secure the sewing machine.














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



Furthermore, do not drink or eat the lubricating oil or grease. They may cause diarrhea or vomiting. Keep the oil out of the reach of children.

CAUTION









Sewing

-  To prevent problems, do not use objects with sharp points to operate the LCD panel.
-  This sewing machine should only be used by operators who have received the necessary training in safe use beforehand.
-  The sewing machine should not be used for any applications other than sewing.
-  Be sure to wear protective goggles when using the machine.
If goggles are not worn, there is the danger that if a needle breaks, parts of the broken needle may enter your eyes and injury may result.
-  Turn off the power switch at the following times. If this is not done, the sewing machine may operate if a switch is pressed by mistake, which could result in serious injury.
 - When replacing the bobbin and needle
 - When not using the machine and when leaving the machine unattended
-  Lower the adjusters to secure the sewing machine.
-  Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.
-  Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.
-  If an error occurs in machine operation, or if abnormal noises or smells are noticed, immediately turn off the power switch. Then contact your nearest Brother dealer or a qualified technician.
-  If the machine develops a problem, contact your nearest Brother dealer or a qualified technician.
-  The work clamp and feed plate are large and heavy, and so they should be transported by two or more people.

Cleaning

-  Turn off the power switch before carrying out these operations. If this is not done, the sewing machine may operate if a switch is pressed by mistake, which could result in serious injury.
-  Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin. If the oil and grease get into your eyes or onto your skin, inflammation can result.
Furthermore, do not drink or eat the lubricating oil or grease. They may cause diarrhea or vomiting.
Keep the oil out of the reach of children.

Maintenance and inspection

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

[3] Warning labels

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

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

2

CAUTION
Moving parts may cause injury.

Operate with safety devices* installed.

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

*Safety devices
Eye guard, side cover, Y guide frame cover, Y motor cover, needle bar bracket cover, front cover, etc.

3

Be careful to avoid injury from moving parts.

4

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

5

Direction of operation

6

brother
Lubricating Oil for Machining
ミシン用潤滑油

⚠ CAUTION

Lubricating oil may cause inflammation to eye and skin.
Wear protective glasses and gloves.

Swallowing oil can cause diarrhoea and vomiting.
Do not swallow.

Keep away from children.
FIRST AID
Eye contact:
-Rinse with plenty of cold water.
-Seek medical help.
Skin contact:
-Wash with soap and water.
If swallowed:
-Seek medical help immediately.
-Do not induce vomiting.

▲ 注意

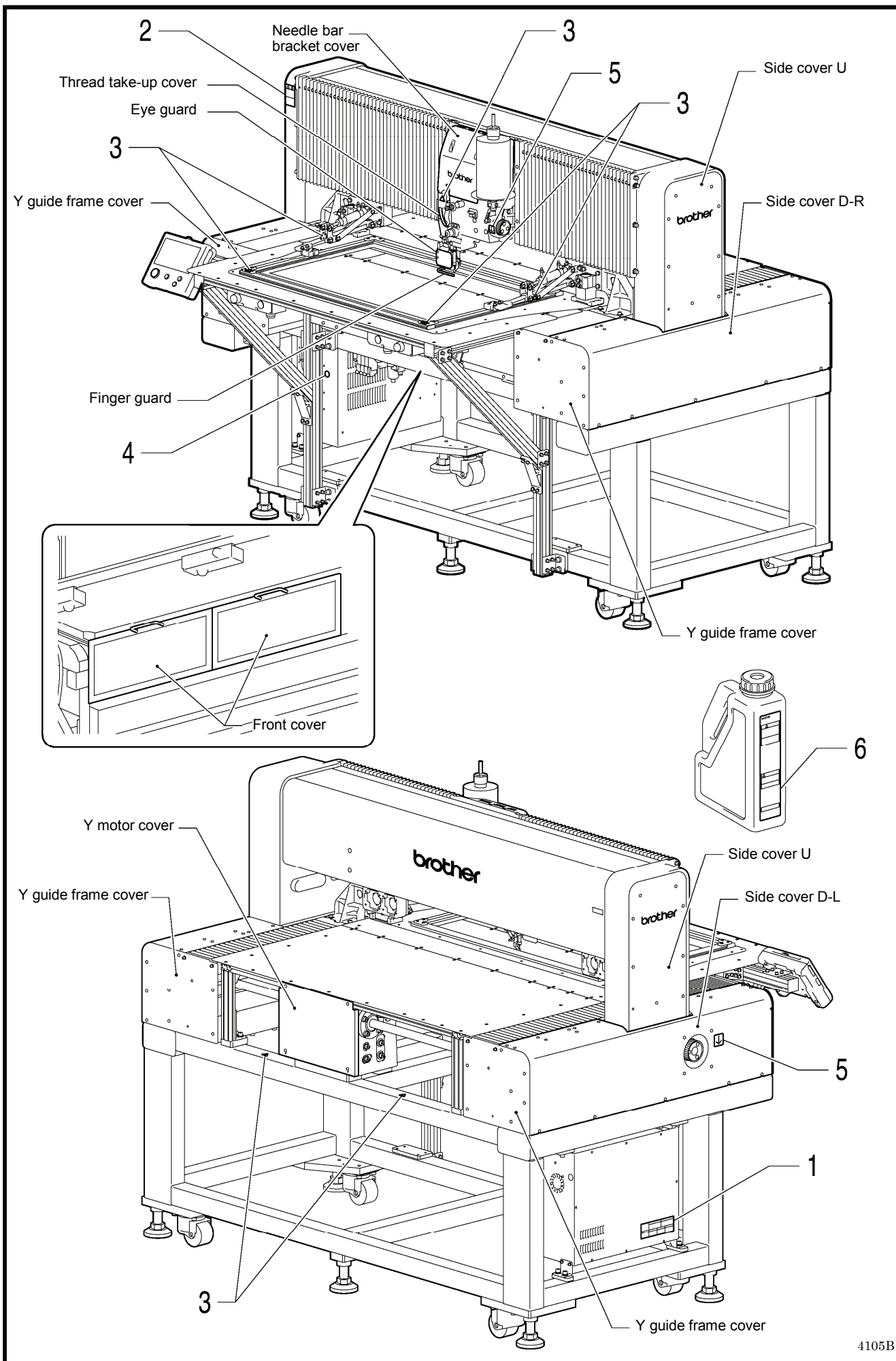
目に入ったり皮膚につくと、炎症を起こすことがある。保護めがね、手袋を使うこと。

飲み込むと、下痢、嘔吐する。飲み込まないこと。

- 子供の手の届かない所に置いてください。
- 目に入った場合は、清浄な水で15分間洗浄し、医師の診断を受けてください。
- 皮膚に触れた場合は、水と石けんで十分に洗ってください。
- 飲み込んだ場合は、無理に吐かせずに、直ちに医師の診断を受けてください。

第4類 第3石油類
危険等級III 火気厳禁

ブラザー工業株式会社
〒448-0803
愛知県刈谷市野田町北地蔵山1番地5
電話：0566-95-0085

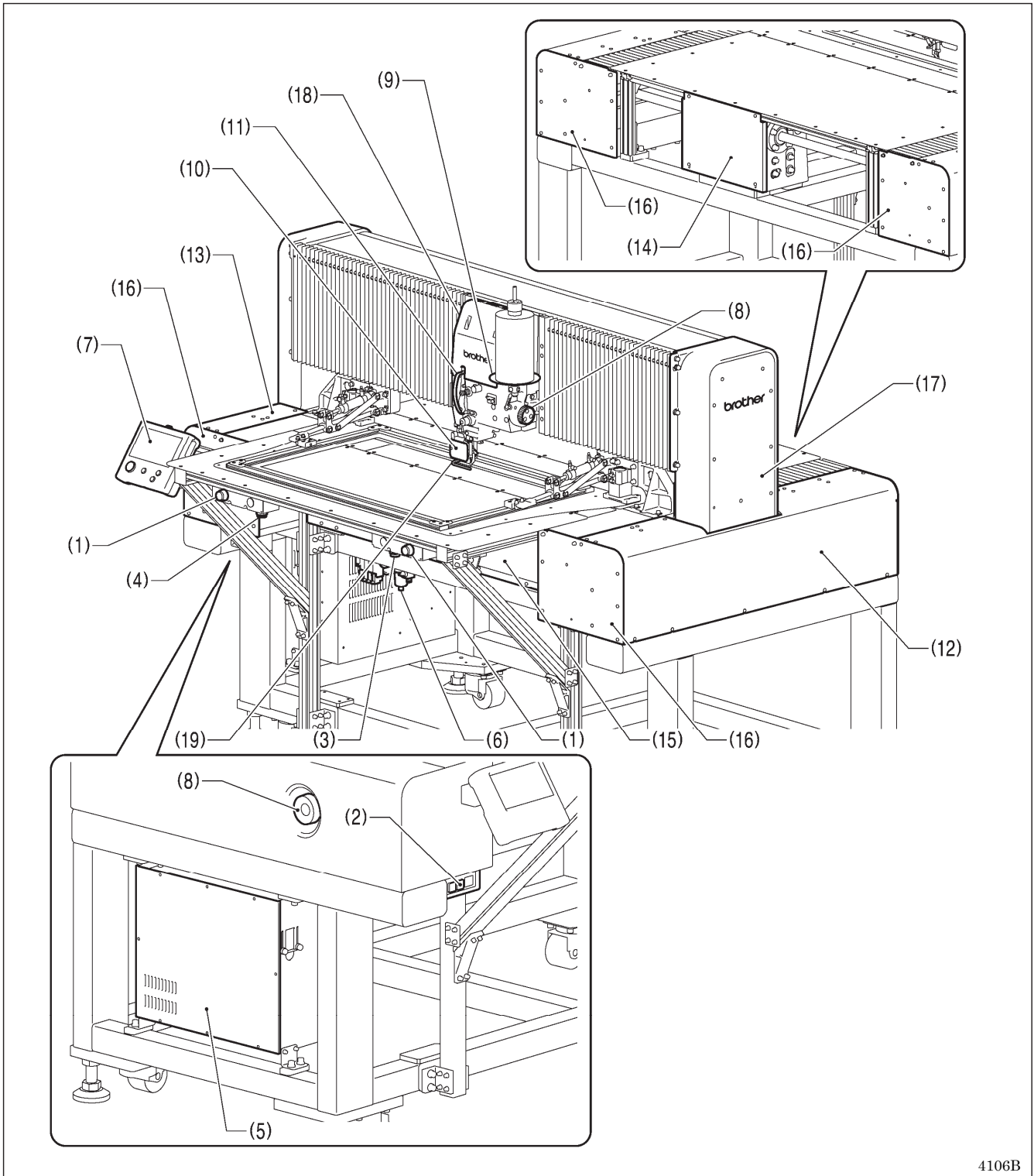


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1. NAMES OF MAJOR PARTS



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- (1) STOP switch
- (2) Power switch
- (3) Right switch
- (4) Left switch
- (5) Control box
- (6) Solenoid valve
- (7) LCD panel
- (8) Pulley
- (9) Cotton stand

Safety devices:

- (10) Eye guard
- (11) Thread take-up cover
- (12) Side cover D-R
- (13) Side cover D-L
- (14) Y motor cover

- (15) Front cover
- (16) Y guide frame cover
- (17) Side cover U
- (18) Needle bar bracket cover
- (19) Finger guard

2. SPECIFICATIONS

Model name	BAS-360H	BAS-365H
Sewing machine	Lock stitch pattern tacking sewing machine	
Stitch formation	Single needle lock stitch	
Max. sewing speed	2,700 sti/min	
Max. sewing area (XxY)	500 x 400 mm	700 x 400 mm
Feed mechanism	Intermittent feed, pulse motor drive	
Stitch length	0.05 – 20.0 mm	
Maximum No. of stitches	100,000 stitches (per program)	
No. of sewing data items that can be stored	999 (Internal memory, SD card, USB memory) (*1)	
Work clamp lift method	Pneumatic cylinder method	
Work clamp height	Max. 52.5 mm	
Intermittent presser foot lift amount	27.5 mm (During reverse needle lifting)	
Intermittent presser foot stroke	0 – 10 mm	
Hook	Double-capacity shuttle hook	
Wiper device	Standard equipment	
Thread trimmer	Standard equipment	
Digital tension	Standard equipment	
Thread breakage detector	Standard equipment	
Cycle programs	30	
Motor	550 W AC servo motor	
Weights	LCD panel Approx. 0.8 kg Sewing machine Approx. 630 kg	LCD panel Approx. 0.8 kg Sewing machine Approx. 640kg
Power source	Single-phase 220V / 230V, 3-phase 220V / 380V / 400V (For three-phase 380 V/400 V, the trans box is required.)	
	950VA	1000VA
Air pressure	0.5 MPa 8 l/min.	

(*1) The number of data items and stitches that can be stored will vary depending on the number of stitches in each program.

No guarantees of operation can be given for any media.

3. INSTALLATION

⚠ CAUTION



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



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



Do not connect the power cord plug until installation is complete.

If this is not done, the sewing machine may operate if a switch is pressed by mistake, which could result in serious injury.



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

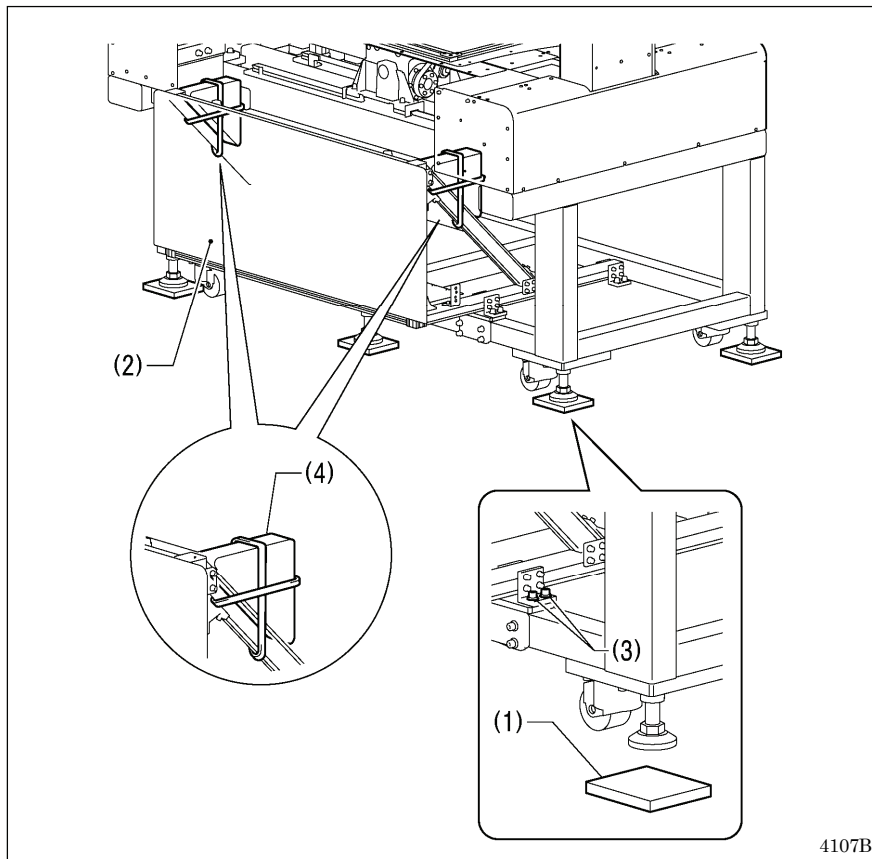


Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.



Attach the safety cover.

3-1. Installing the sewing machine



1. Place the sewing machine onto the rubber cushions.

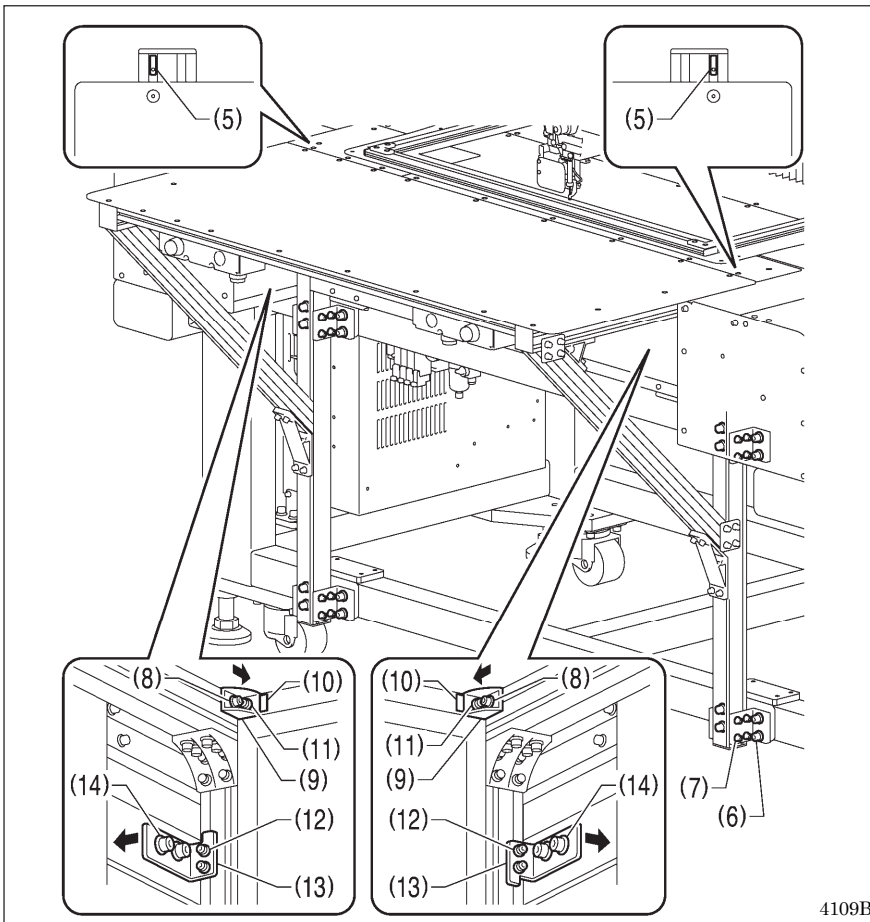
NOTE:

- Use a hoist to install the sewing machine.
- Position the six rubber cushions (1) so that the adjusters come to about the middle of the six rubber cushions (1).
- Position the sewing machine so that the top of the auxiliary plate is level.
- When moving from the installation position, be careful not to get your feet caught by the casters.

2. Remove the auxiliary plate F assembly (2) from the base frame.

(3) Bolts [8 pcs.]

3. Remove the two protective parts (4).



4109B

4. Place the two M4 frame nuts (5) onto the auxiliary plate F assembly (2). Provisionally install the auxiliary plate F assembly (2) to the frame with the sixteen socket bolts (6). If the hole positions are difficult to align, loosen the 32 socket bolts (7) and adjust.

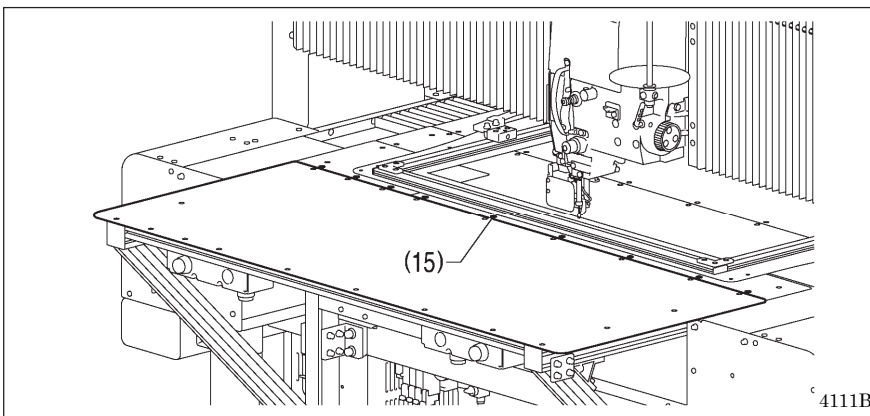
* The position of the nut inside the aluminum frame where the low head socket bolt (15) which was used in step 7 is installed may sometimes be incorrect. Make sure that the position of the nut matches the position of the low head socket bolt before installing.

5. Loosen the two socket bolts (8), and then while pushing the bracket (9) in the direction of the arrow, fully tighten the two socket bolts (8), install the two M5 frame nuts (10), and provisionally tighten the two socket bolts (11).

6. Loosen the four socket bolts (12), and then while pushing the bracket (13) in the direction of the arrow, provisionally tighten the four socket bolts (14).

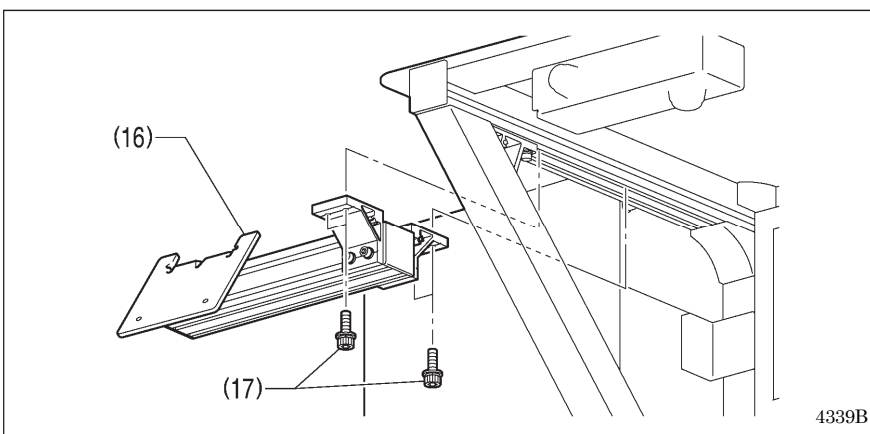
7. While firmly pushing the auxiliary plate F assembly (2) to the rear, install the low head socket bolt (15), and then fully tighten the socket bolts (6), (11) and (14) which were provisionally tightened.

(15) Low head socket bolt [BAS360H: 8 pcs.] [BAS365H: 9 pcs.]



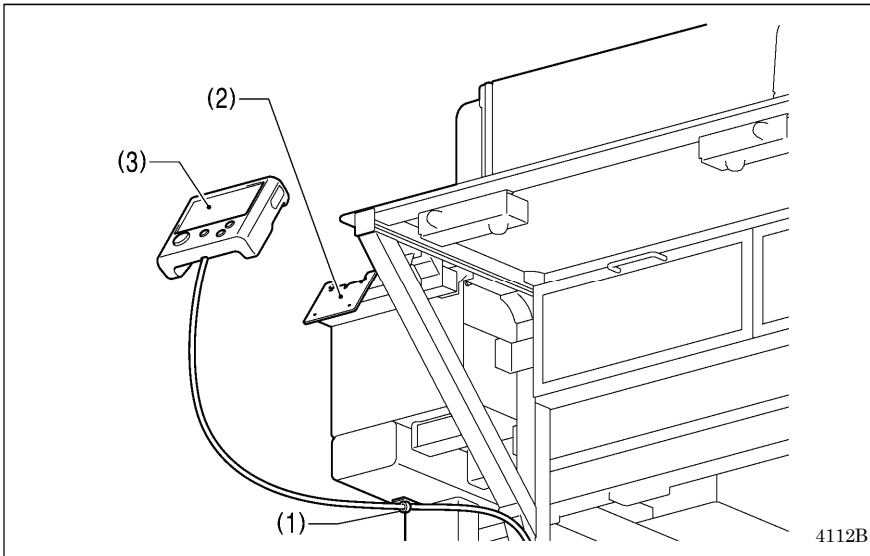
4111B

8. Install the panel mounting bracket assembly (16) to the frame with the socket bolt (17).

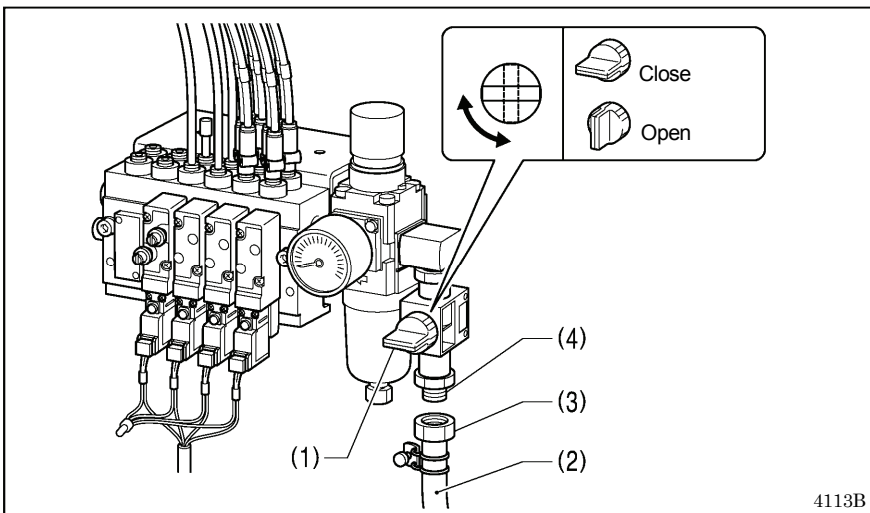


4339B

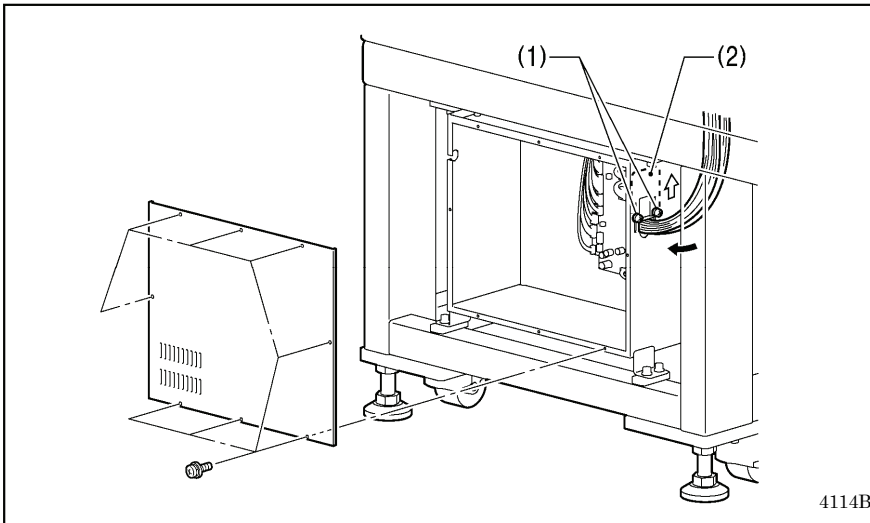
3-2. Installing the LCD panel



3-3. Installing the air hose



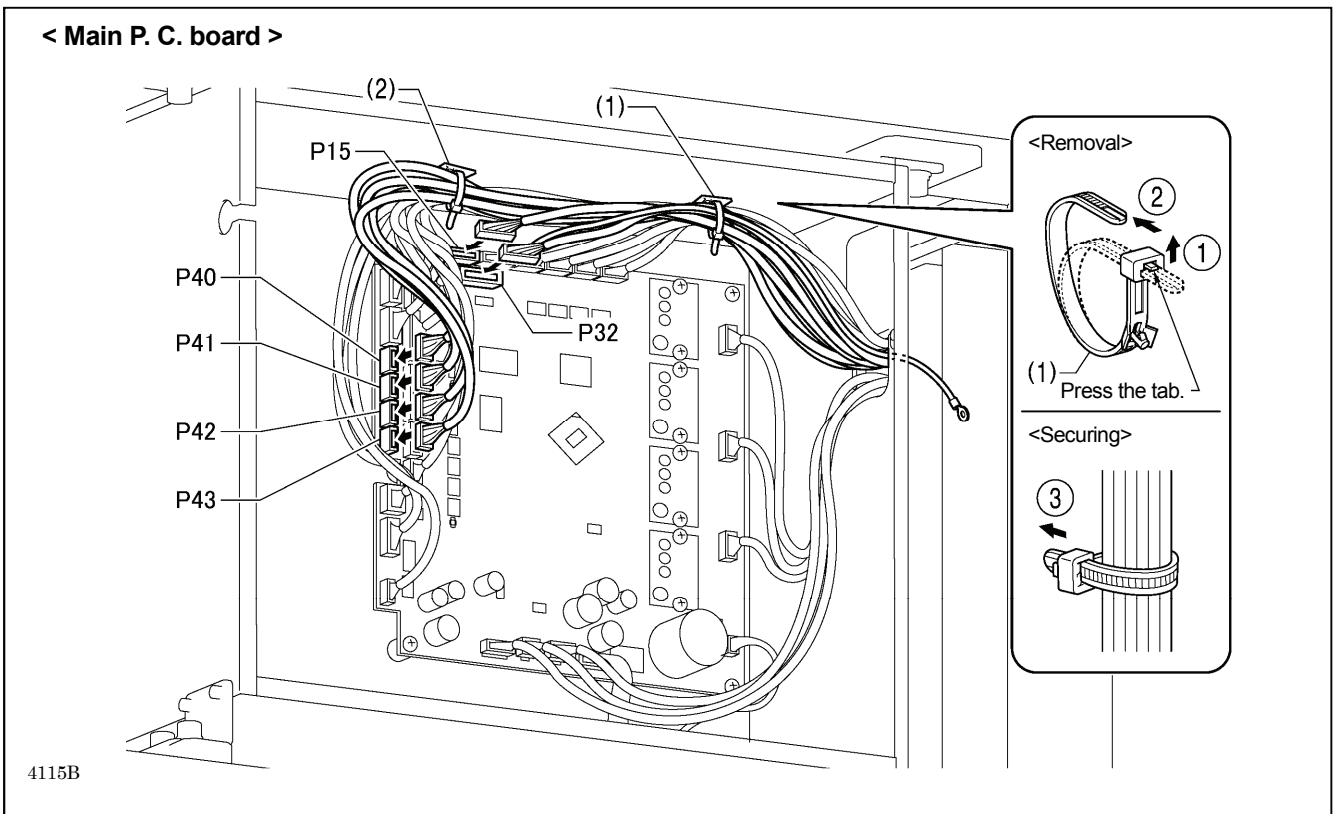
3-4. Connecting the cords



1. Remove the cover of the control box.
2. Loosen the two screws (1), and then open the cord presser plate (2) in the direction of the arrow.
3. Pass the hand start switch cord and the LCD panel cord together through the hole in the control box.
4. Securely connect the connectors as indicated in the table.
(Refer to the illustration below.)

NOTE:

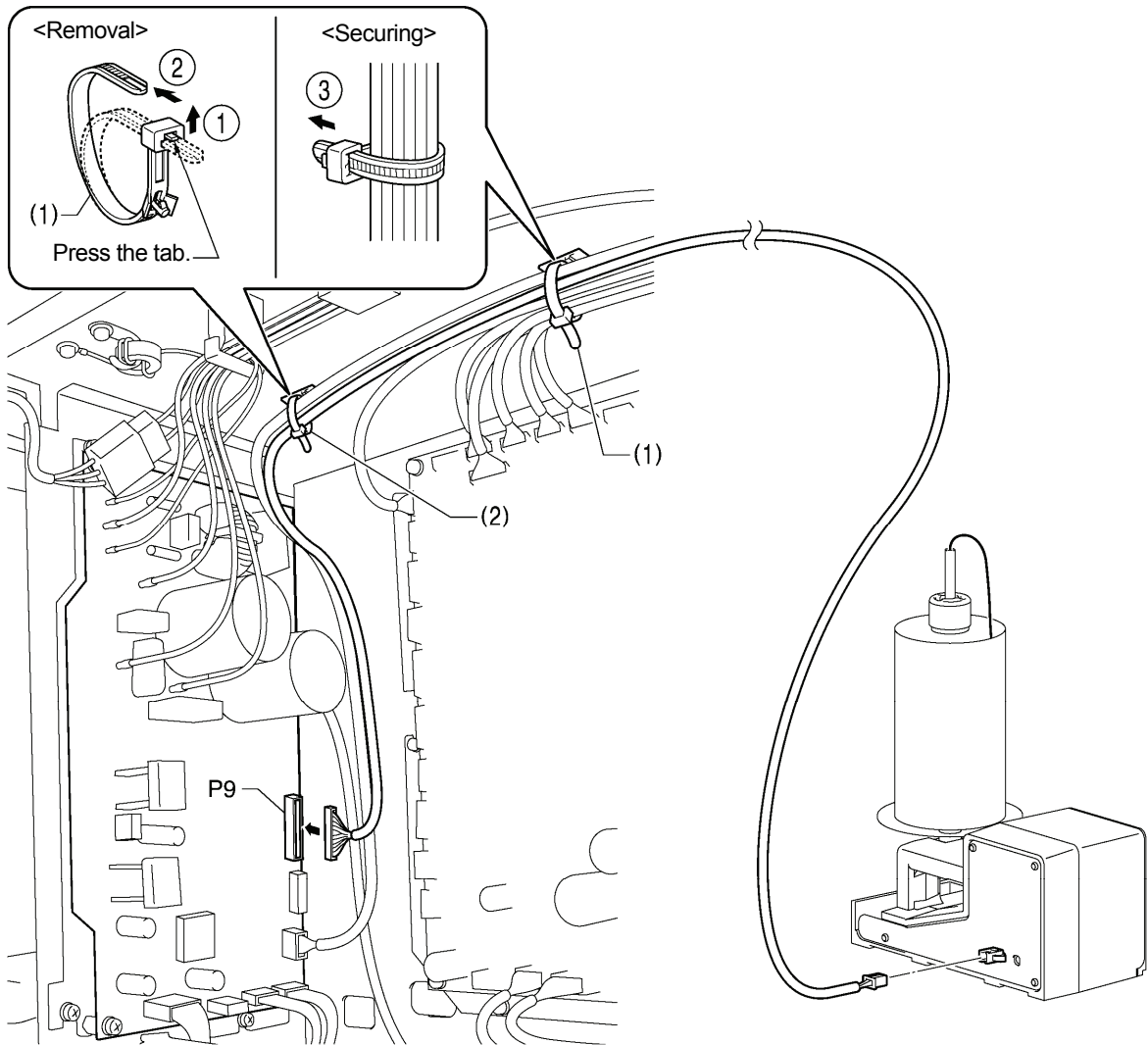
- Check that the connector is facing the correct way, and then insert it firmly until it locks into place.
- Secure the cables with cable ties and cord clamps, while being careful not to pull on the connector.



Connectors	Connection location on main P. C. board	Cable ties
Hand switch harness [7-pin] White	P15 (PEDAL)	(1)
LCD panel [8-pin] Red	P32 (PROGRAMER)	(1)
STOP switch [3-pin] White [4 pcs.]	P40 – P43	(1) (2)

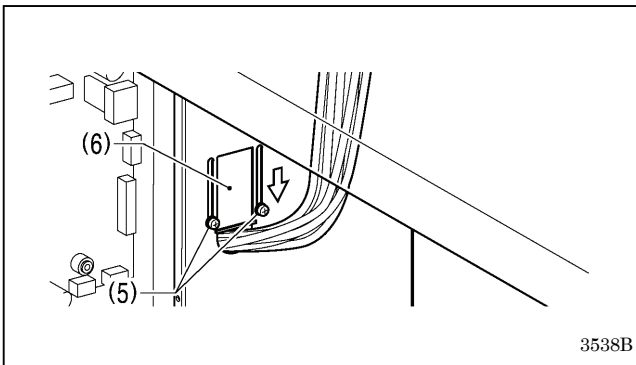
NOTE: The connector of the STOP switch can be inserted into any connector from P40 to P43 inclusive.

< Motor P. C. board >



4340B

Connectors	Connection location on motor P. C. board	Cable ties
Thread winding harness B [12-pin] White	P9 (AIR)	(1) (2)



3538B

- Close the cord presser plate (6) in the direction of the white arrow, and secure it by tightening the two screws (5).

NOTE:

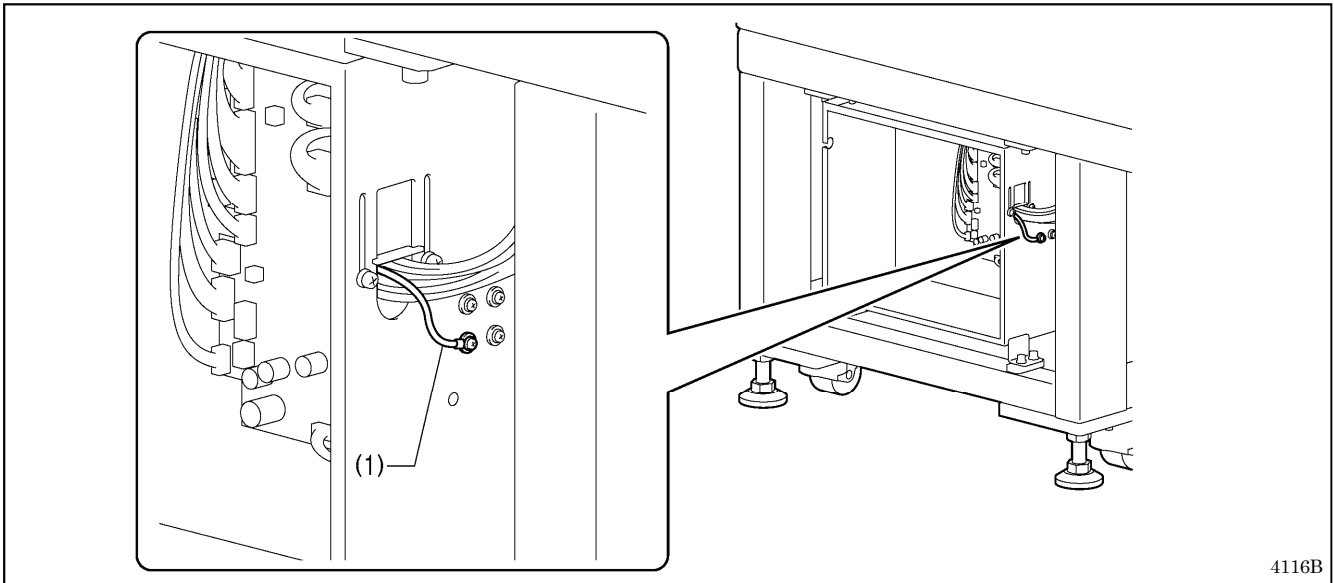
Close the cord presser plate (6) securely so that no foreign objects, insects or small animals can get inside the control box.

3-5. Connecting the ground wire

CAUTION



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



(1) Ground wire from LCD panel harness

- After connecting the ground wire, tighten the control box cover with the eight screws. Check that the cords are not clamped by the cover at this time.

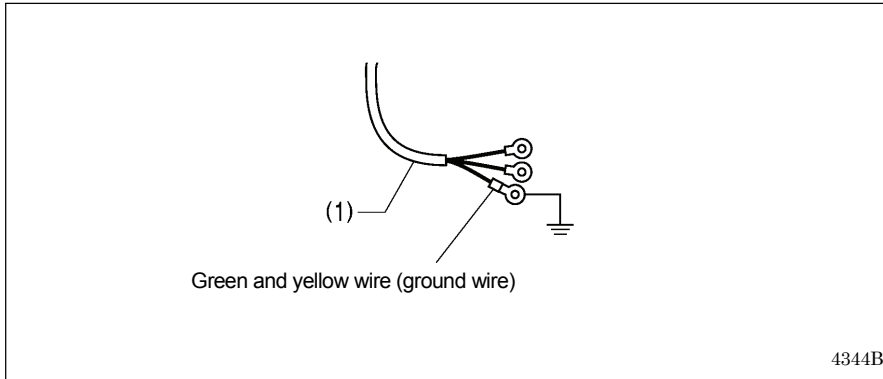
NOTE: Make sure that the ground connections are secure in order to ensure safety.

3-6. Connecting the power cord

⚠ CAUTION



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



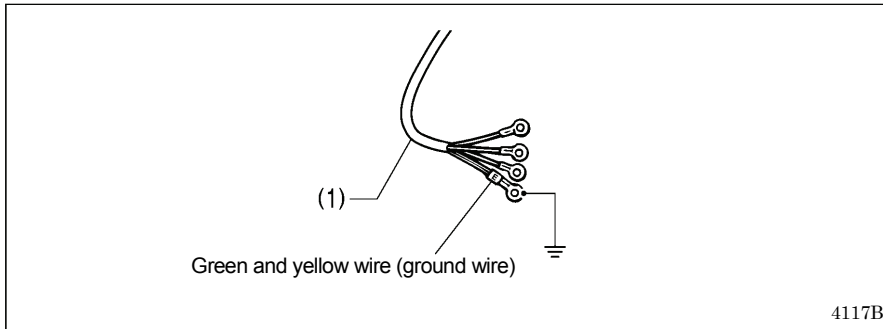
Connect cords that match the voltage specifications.

< EU specifications >

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

NOTE:

Do not use extension cords, otherwise machine operation problems may result.



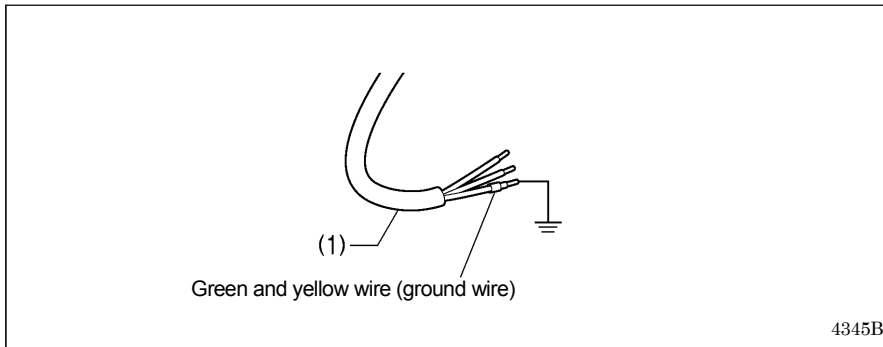
Connect cords that match the voltage specifications.

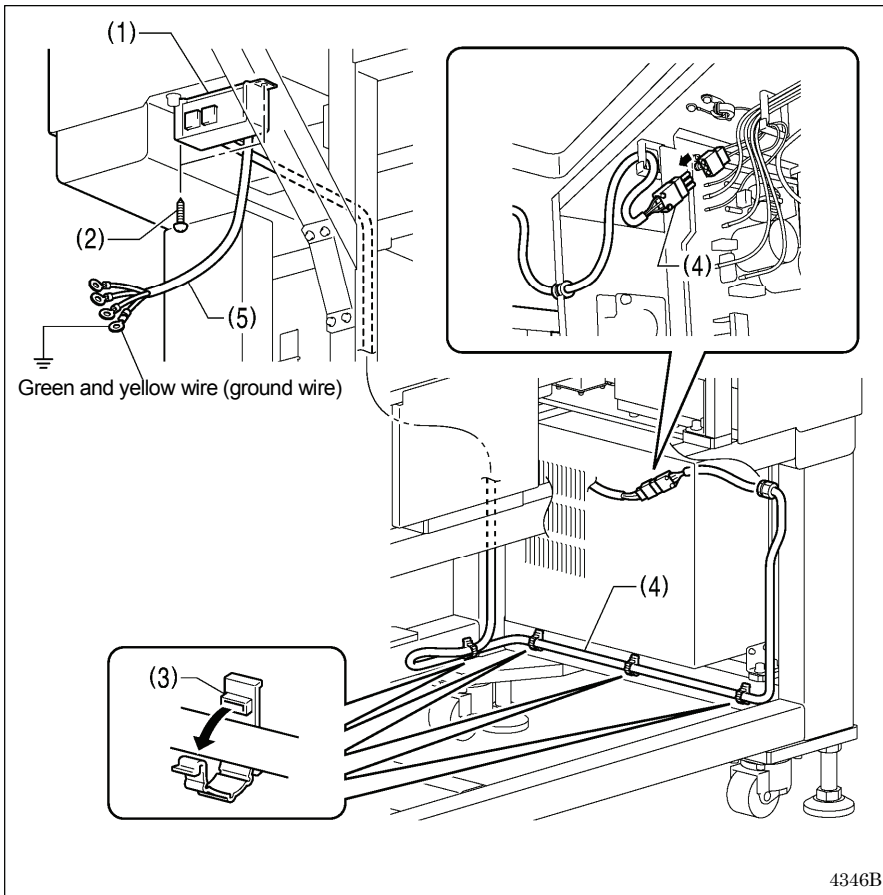
< 200 V system >

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

NOTE:

Do not use extension cords, otherwise machine operation problems may result.



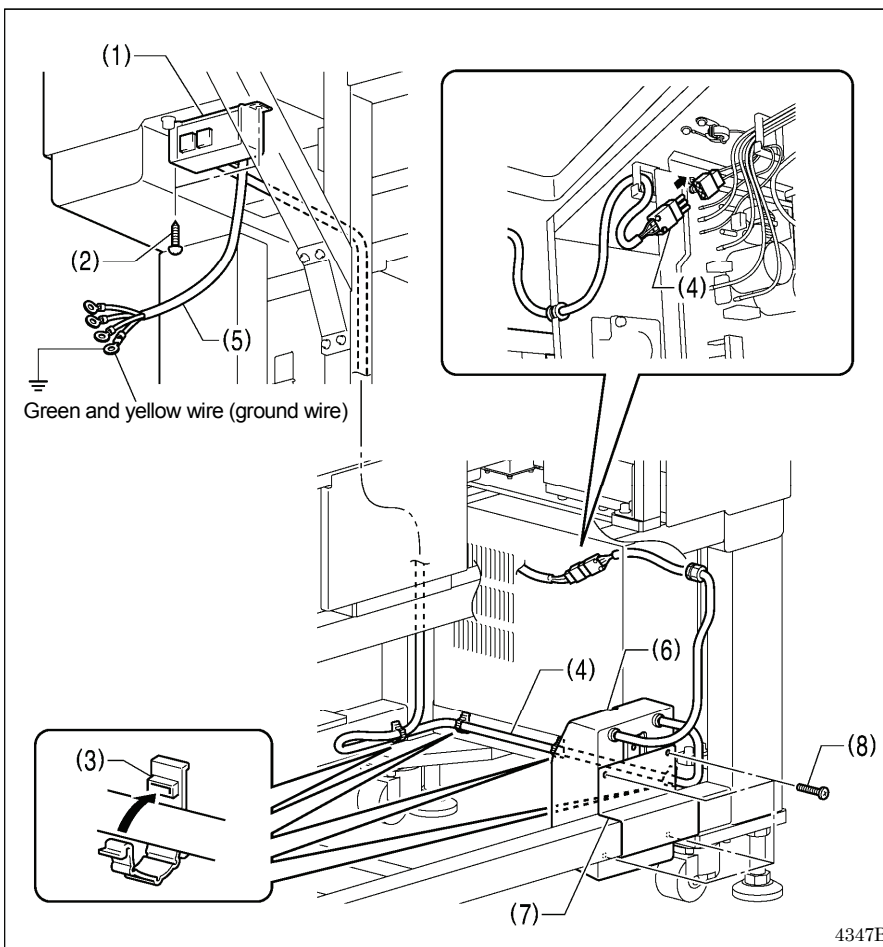


<400 V system >

- (1) Power switch
- (2) Wood screws [2 pcs.]
- (3) Cord clamps [4 pcs.]
- (4) 3-pin power supply connector
- (5) Power cord

1. Remove the power switch (1) which is already installed.
2. Remove the 3-pin power supply connector (4) from the cord clamp (3).
3. Disconnect the 3-pin power supply connector (4) inside the control box.

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- (1) Power switch
- (2) Wood screws [2 pcs.]
- (3) Cord clamps [4 pcs.]
- (4) 3-pin power supply connector
- (5) Power cord
- (6) Transformer box
- (7) Mounting plate
- (8) Screws [with washer] [4 pcs.]

1. Attach an appropriate plug to the power cord (5). (The green and yellow wire is the ground wire.)
2. Insert the power plug into a properly-grounded electrical outlet.

NOTE:

- If the ground connection is not secure, electric shocks, operating errors or damage to electronic components such as P.C. boards may occur.
- Do not use extension cords, otherwise machine operation problems may result.

3. Use the eight screws to tighten the cover of the control box. Check that none of the cords are being clamped by the cover at this time.

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3-7. Lubrication

! CAUTION



Do not connect the power cord plug until installation is complete.

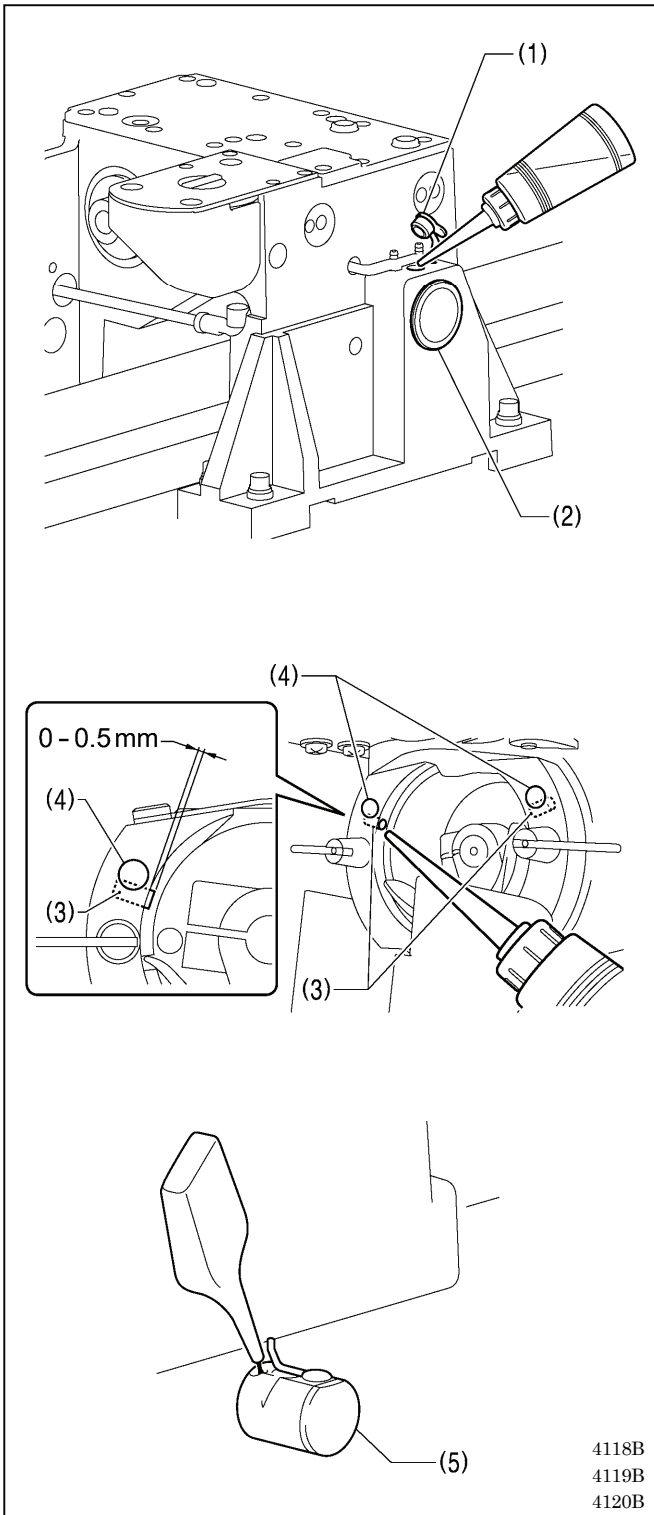
If this is not done, the sewing machine may operate if a switch is pressed by mistake, which could result in serious injury.



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

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

Keep the oil out of the reach of children.



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

- Use only the lubricating oil <JXTG Energy Sewing Lube 10N; VG10> specified by Brother.

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

1. Remove the oil feeding pocket cover (1) and add oil.

NOTE:

Be sure to add more oil when the oil level drops down to about one-third full in the oil gauge window (2). If the oil drops below the one-third full level in the oil gauge window (2), there is the danger that the sewing machine may seize during operation.

2. Pour oil in through the two holes of the shuttle race base assembly so that the felt (3) is lightly moistened. If it is difficult to add oil, you can also remove the rubber cap (4) and pour in the oil through the hole.

NOTE:

- The two pieces of felt (3) should normally project by 0 to 0.5 mm from the hook race. Be careful not to push in the felt (3) when lubricating.

- If there is no more oil on the felt (3) of the shuttle race base assembly, problems with sewing may result.

3. If using the needle cooler (5), fill it with silicon oil. (Refer to "4-4. Threading the upper thread" for details on using the needle cooler (5).)

4118B
4119B
4120B

4. PREPARATION BEFORE SEWING

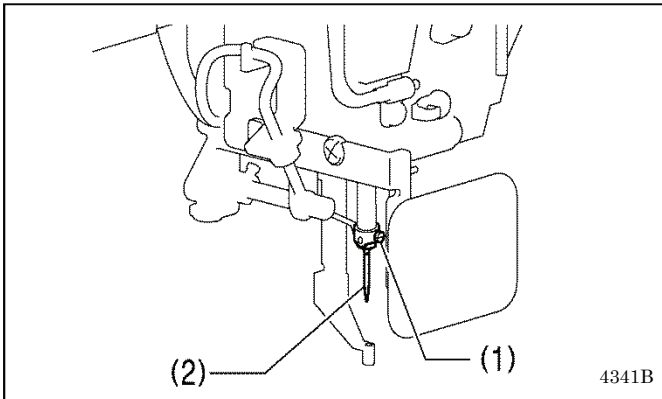
4-1. Installing the needle

! CAUTION



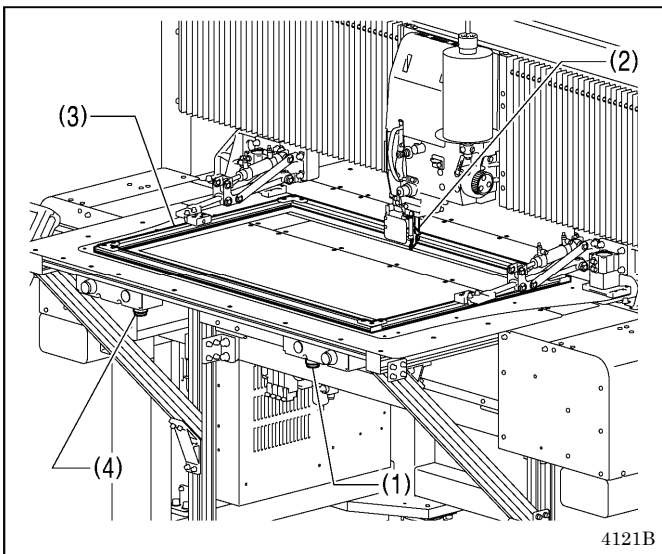
Turn off the power switch before installing the needle.

If this is not done, the sewing machine may operate if a switch is pressed by mistake, which could result in serious injury.



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

4-2. Hand start switch operation method

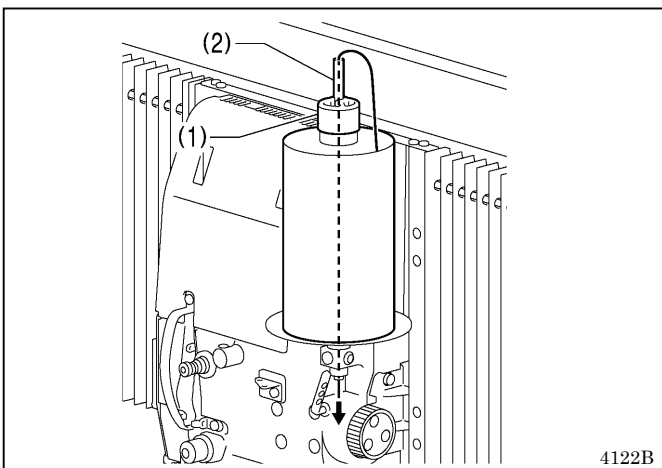


When the right switch (1) is pressed, the intermittent presser foot (2) and the work clamp (3) will drop, and when the left switch (4) is pressed, they will rise. When the left switch (4) and right switch (1) are pressed together while the intermittent presser foot (2) and the work clamp (3) are lowered, the sewing machine will start.

NOTE:

Use a work clamp and feed plate which are suitable for the sewing area. If a work clamp or feed plate which is unsuitable for the sewing area is used, the needle may break and injury may occur.

4-3. Threading the thread

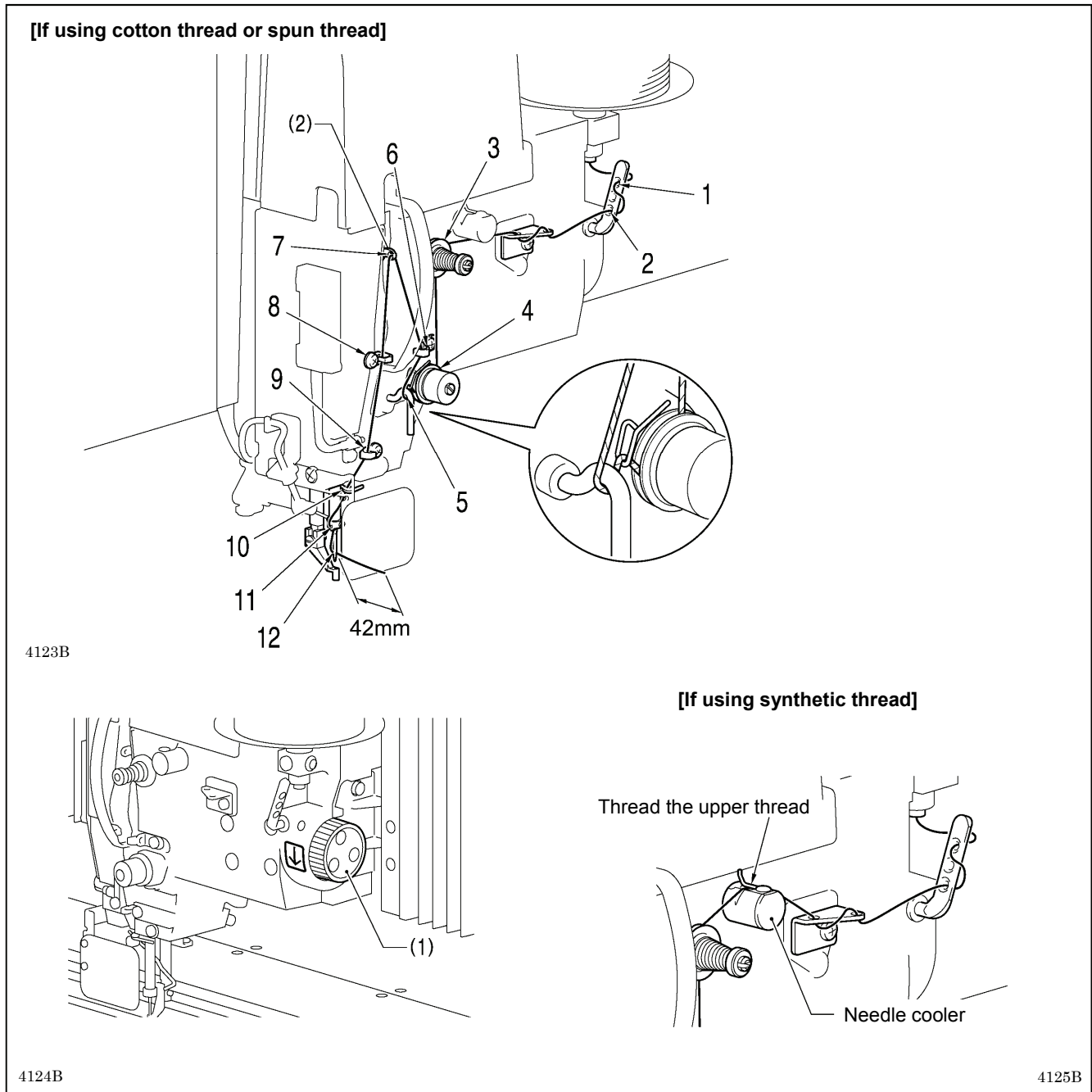


1. Set the thread spool in place, and then place the thread spool presser (1) against the top part of the thread spool to hold it in place.
2. Pass the thread through the top of the thread spool shaft (2).

4-4. Threading the upper thread

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

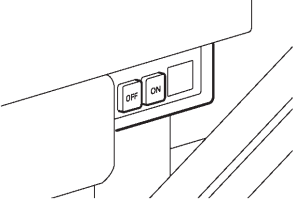
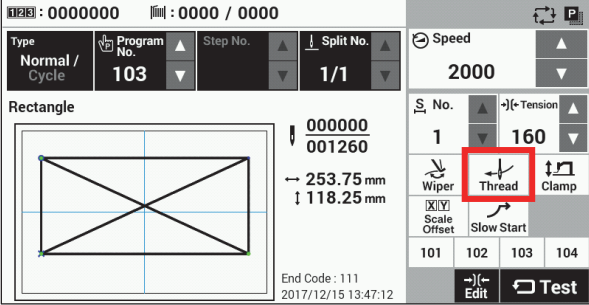


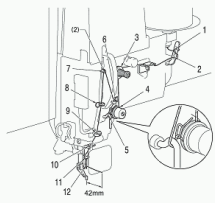

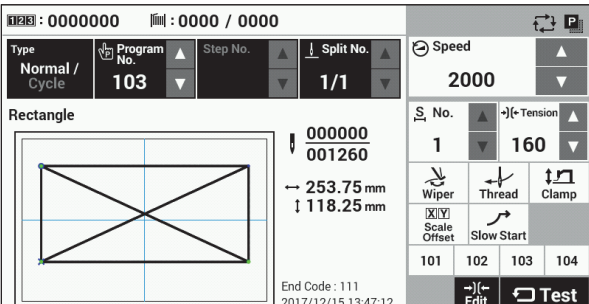
- * When using threading mode for threading, the thread can be threaded more easily.
(Refer to "Threading mode" on the next page.)



- Turn the machine pulley (1) and raise the thread take-up (2) to its highest position before threading the upper thread.
(This will make threading easier and it will prevent the thread from coming out at the sewing start.)
- When threading the thread through the needle, allow a distance of approximately 42 mm between the needle hole and the end of the thread.
If it is too long, the thread may become tangled, and if it is too short, the thread may pull out at the sewing start.
- If you would like to adjust the sensitivity of the thread breakage sensor, refer to "7-6. Adjusting the sensitivity of the thread breakage sensor".

<Threading mode>

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

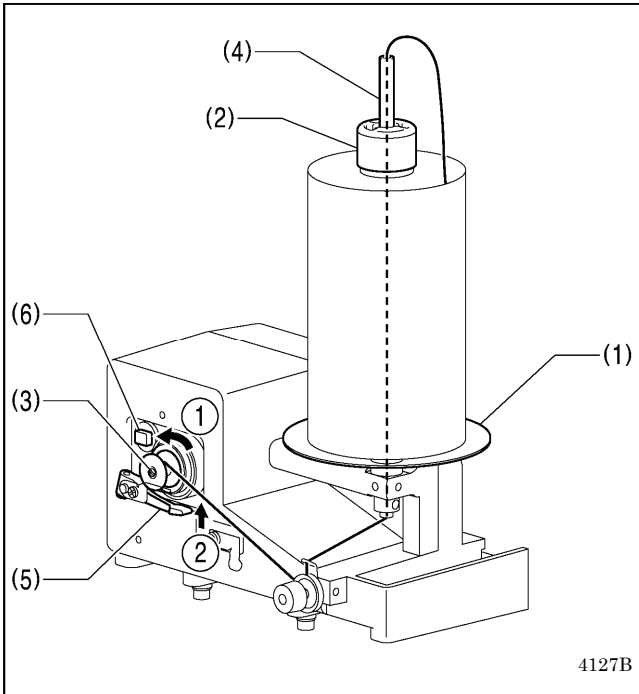
1		<p>Turn on the power.</p>	4126B
2	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">  </div> <div style="width: 45%;"> <p>Touch the Thread key on the screen.</p>  </div> </div> <ul style="list-style-type: none"> • The feed plate lock cylinder will lock. • The tension discs will open. 		
			
	<div style="border: 1px solid black; padding: 5px;"> <p>Threading</p>  <ol style="list-style-type: none"> 1. Turn the machine pulley (1) and raise the thread take-up (2) to its highest position before threading the upper thread. (This will make threading easier and it will prevent the thread from coming out at the sewing start.) 2. When threading the thread through the needle, allow a distance of approximately 42 mm between the needle hole and the end of the thread. 3. Touch the OK key to return to the previous screen. <p style="text-align: right; color: green; font-weight: bold; margin-top: 10px;">OK</p> </div>		
3	Threading the thread.		
4	<p>Ending threading mode</p> <p>The display will return to the previous screen.</p>	<p>Touch the OK key on the screen.</p> <div style="text-align: center; margin: 10px 0;">  </div>	<ul style="list-style-type: none"> • The sewing machine will return to the status that it was at before switching to threading mode.
			

4-5. Winding the lower thread

CAUTION



Do not touch any of the moving parts or press any objects against the sewing machine while winding the thread. If this is not observed, it may result in serious injury or damage to the devices.

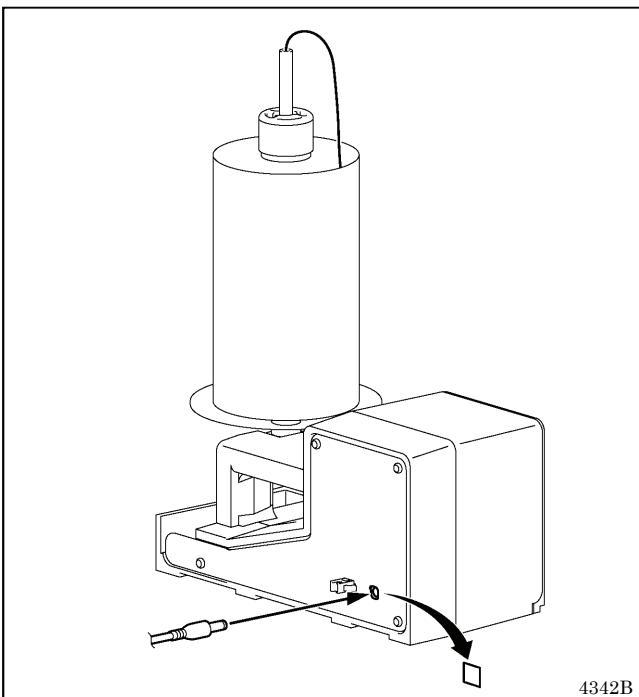


1. Place the thread on top of the thread spool bracket (1), and then place the thread spool presser (2) against the top part to hold the thread in place.
2. Place the bobbin onto the thread spool shaft (3).
3. Pass the thread through the thread spool shaft (4) from the top to the bottom.
4. Thread the thread as shown in the illustration, and then turn the bobbin several times in the direction of ① to wind the thread.
5. When the bobbin presser arm (5) is pushed in the direction of ②, the thread will start being wound.
6. When winding is finished, the bobbin presser arm (5) will automatically release the bobbin, and winding will stop.

[NOTE:]

- When the circuit protector (6) operates, the thread winding motor will not work. Let the mechanism stand for one minute or more to allow it to cool down, and then press the circuit protector. (If the mechanism is not allowed to cool down, nothing will happen when the circuit protector is pressed.)
- If the manual winding tension is stronger than necessary, it may cause problems with sewing.

When using the bobbin winder by itself



- Peel off the sticker, and then insert the AC adapter in the direction of the arrow.

! WARNING

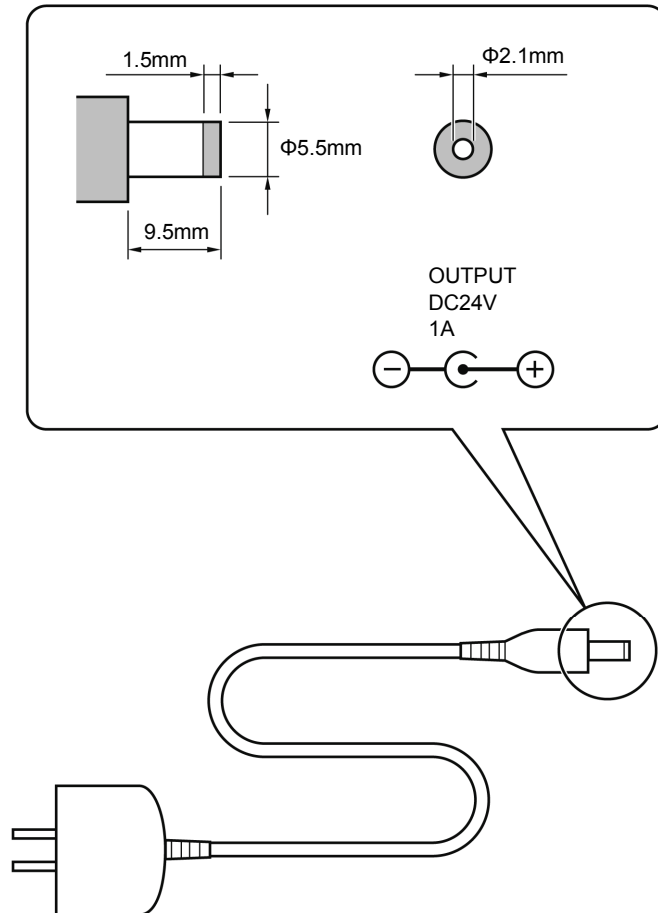


Be sure to use an AC adapter that complies with the safety standards in the country of use. Otherwise, it may cause fire or electric shocks or problems with correct operation.

Purchase an AC adaptor conforming to the specifications below.

OUTPUT: 24 V DC, 1A

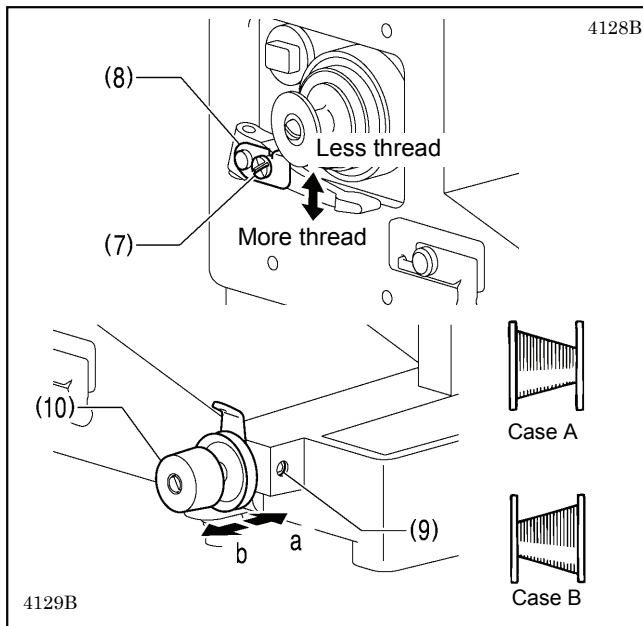
Polarity:



3670B

3671B

4. PREPARATION BEFORE SEWING



Adjusting the bobbin winding amount

Loosen the screw (7) and move the bobbin presser (8).

If the thread winds onto the bobbin unevenly

Loosen the set screw (9) and move the bobbin winder tension assembly (10) forward and back to adjust.

* For case A, move the bobbin winder tension assembly (10) in the direction of a, and for case B, move it in the direction of b.

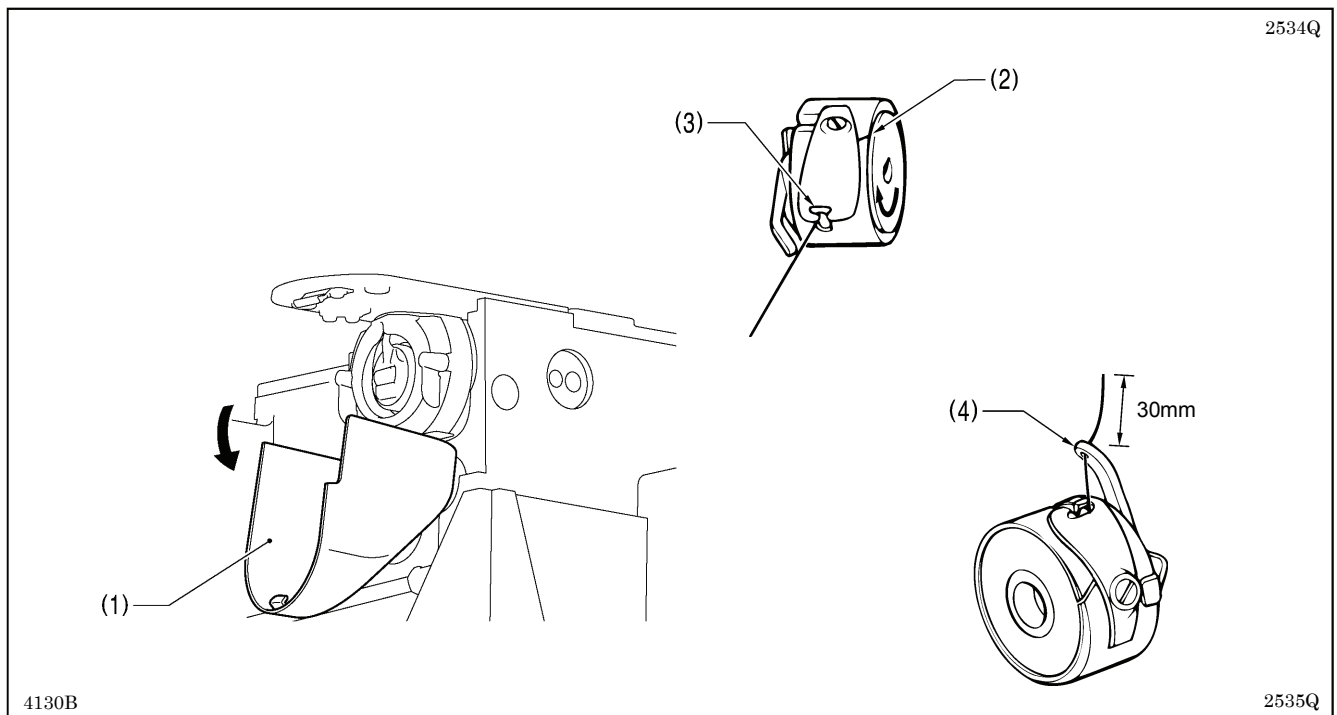
4-6. Installing the bobbin case

⚠ CAUTION



Turn off the power switch before installing the bobbin case.

If this is not done, the sewing machine may operate if a switch is pressed by mistake, which could result in serious injury.



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

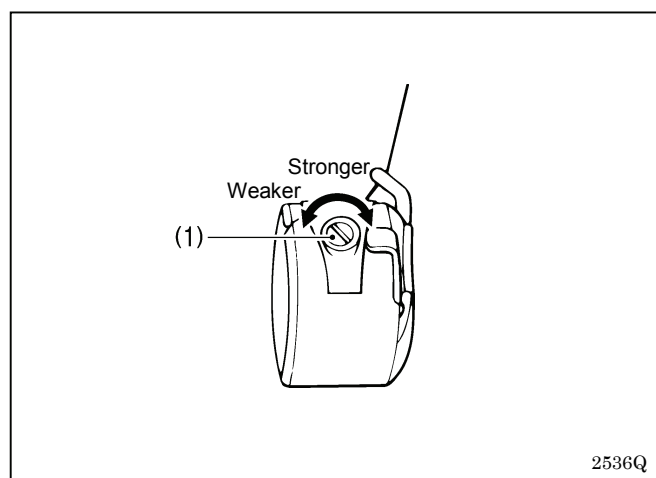
4-7. Thread tension

[Thread tension reference]

Upper thread	#20 or similar
Lower thread	#20 or similar
Upper thread tension (N) [Tension value]	1.4 – 1.8 [140 - 180]*1
Lower thread tension (N)	0.3 – 0.4
Pre-tension (N)	0.2 – 0.4
Needle	DP x 17 #19

*1 This is the tension value when the pretension is 0.2 N.

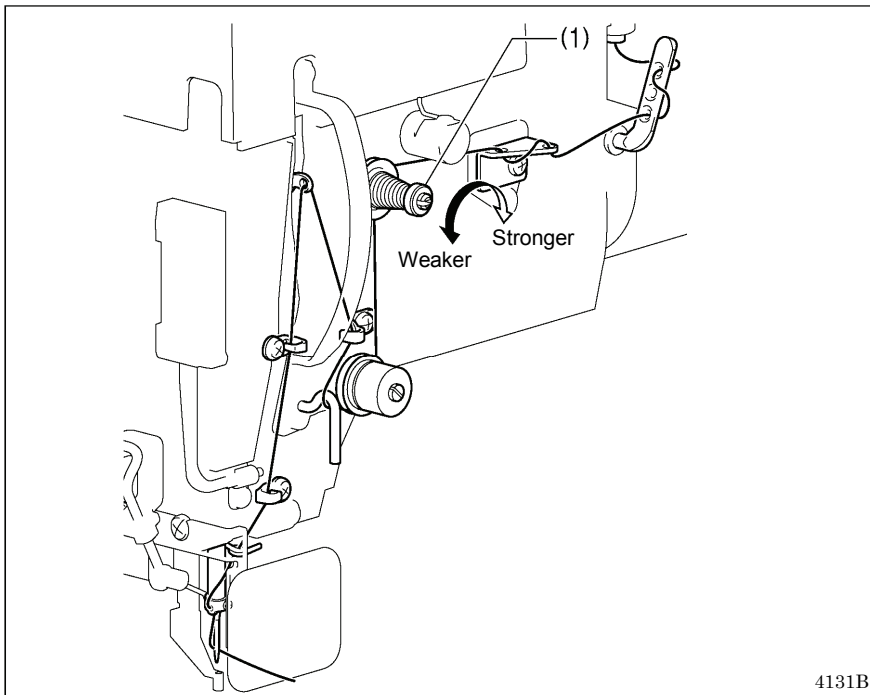
4-7-1. Lower thread tension



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

4. PREPARATION BEFORE SEWING

4-7-2. Upper thread tension



Use the digital tension to adjust the tension as appropriate for the material being sewn. (Refer to “Setting the tension value” below.)

Turn the tension nut (1) (sub-tension) to adjust so that the upper thread trailing length is about 42 mm.

4131B

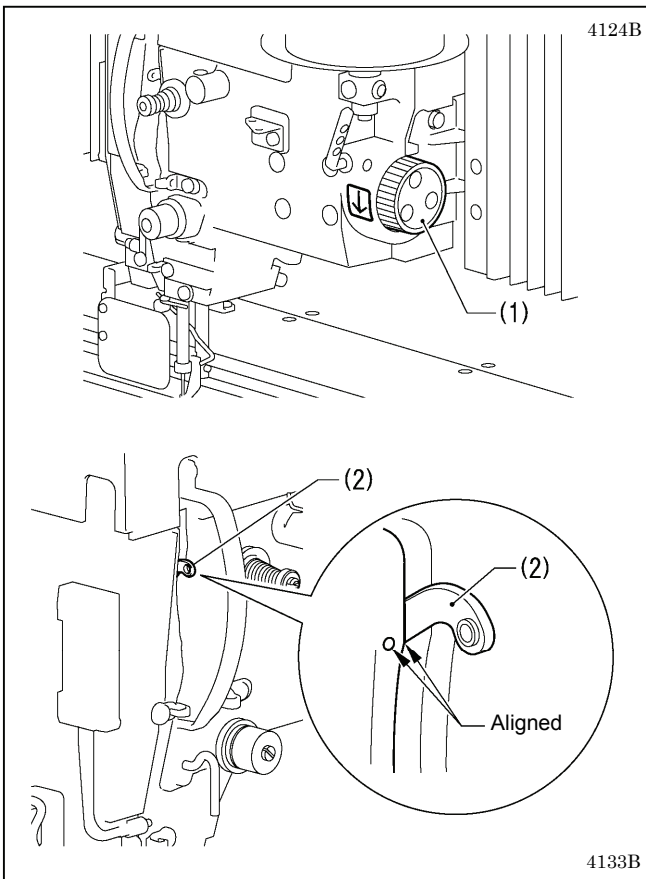
[Sewing operation screen]

0000000				0000 / 0000		P	
Type Normal / Cycle	Program No. 103	Step No.	Split No. 1/1	Speed 2000			
Rectangle				S. No. 1	→)← Tension 160	(2)	
<p>000000 001260 ← 253.75 mm ↓ 118.25 mm</p>				Wiper	Thread	Clamp	
End Code : 111 2017/12/15 13:47:12				Scale Offset	Slow Start		
				101	102	103	104
				←)← Edit	↻ Test		

Setting the tension value

Touch the Δ and ∇ keys (2) on the sewing operation screen to increase or decrease the Tension value.

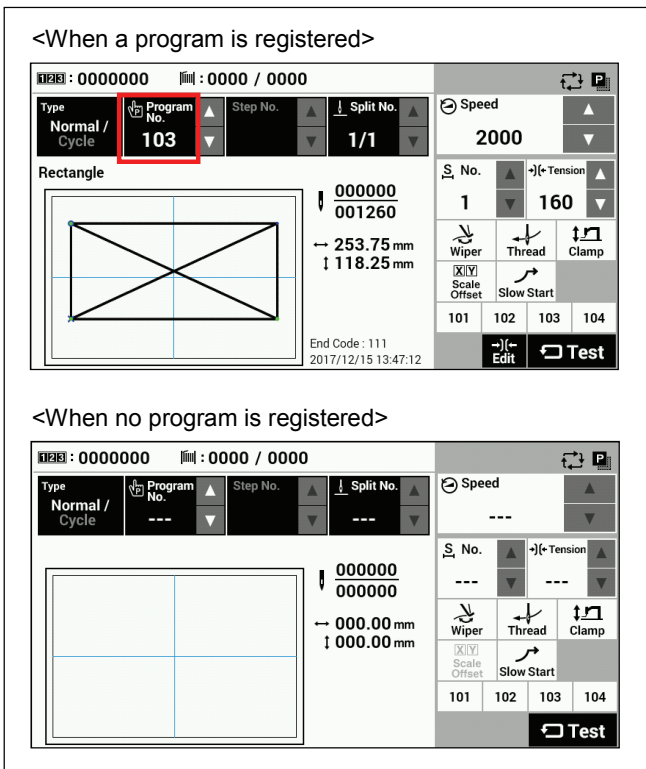
4-8. Starting up



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

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

* If they are not aligned, the thread take-up lever (2) will move automatically during sewing and the upper thread may pull out from the needle after threading.



Turn on the power.

If a program has been registered, the program number and a preview of the sewing pattern will be displayed.

No programs are registered at the time of shipment from the factory, and so "---" is displayed as the program number (No.).

For details on the sewing data reading method, refer to "3. USING STORAGE MEDIA" in the "LCD Panel/Operation Panel" Instruction Manual".

5. SEWING

! WARNING



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



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

! CAUTION



Turn off the power switch at the following times.

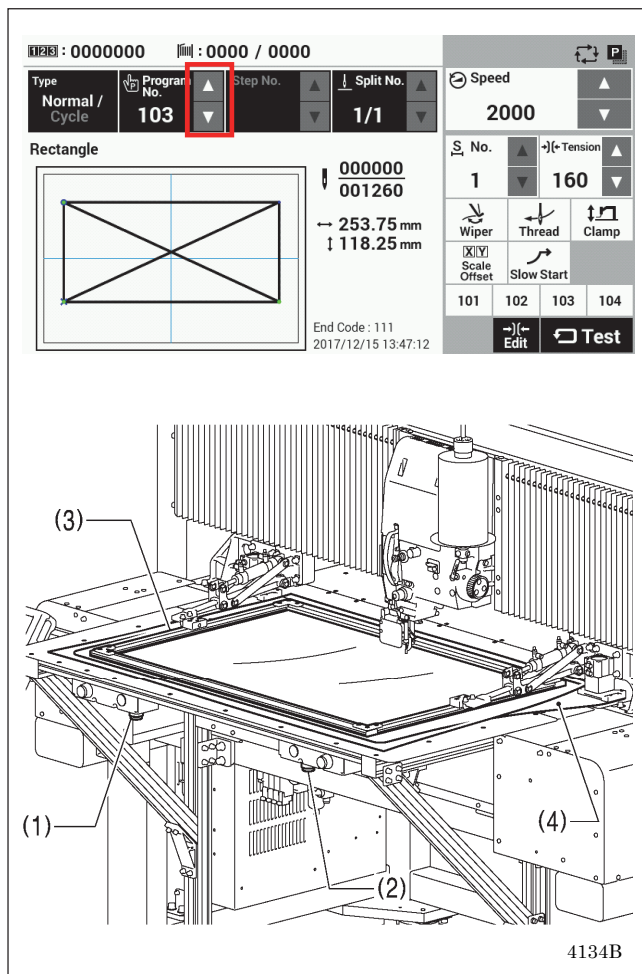
If this is not done, the sewing machine may operate if a switch is pressed by mistake, which could result in serious injury.

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



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

5-1. Sewing



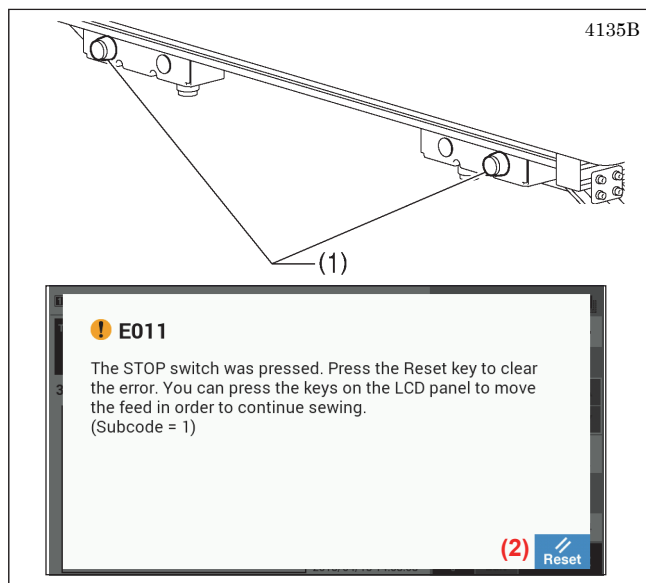
1. Turn on the power.
2. Touch the \triangle or ∇ key to select the number for the program to be sewn.
 - * For details on reading sewing data from SD cards and USB memory devices, refer to "3-4. Importing items of sewing data separately" in the "LCD panel/Operation pane" Instruction Manual.
3. When the left switch (1) and the right switch (2) are pressed together, home position detection will start. When home position detection is complete, the feed plate lock cylinder will automatically unlock, and the work clamp (3) will rise.
4. Place the material onto the feed plate (4), and set the feed plate (4) to the feed plate lock position. When this is done, the feed plate (4) will lock and the work clamp (3) will drop.
5. When the left switch (1) and the right switch (2) are pressed together, sewing will start.
6. When sewing is complete, the thread will be trimmed, and then the work clamp (3) will rise and the feed plate (4) will unlock.

Use a work clamp (3) which will hold the material securely so that it does not slip.

If the material slips when using the standard work clamp (3) and feed plate (4), process the work clamp (3) and feed plate (4) so that the material does not slip.

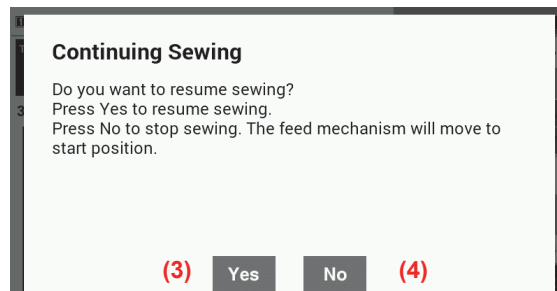
5-2. Using the STOP switch

If you press the emergency stop switch (1) to during actual sewing, an error dialog box will be displayed and the sewing machine will immediately stop.



<Clearing>

1. Touch the Reset key (2).
 - The thread will be trimmed, and then the error dialog box on the screen will disappear and the buzzer will stop.
2. A dialog box asking you to confirm if you want to continue sewing will be displayed.



<Continuing sewing from a stopping point>

If the thread breaks or the lower thread runs out during sewing, you can then continue sewing from the point where the thread broke or ran out.

1	<p>The LCD panel shows a sewing pattern for a rectangle. The dimensions are 253.75 mm by 118.25 mm. The program number is 103, and the step number is 1/1. The end code is 111, and the date/time is 2017/12/15 13:47:12.</p>	Touch "Yes" (3) to return to the resewing standby screen.
2	<p>The diagram shows two arrow keys on the LCD panel: a left arrow key (5) and a right arrow key (6).</p>	<p>Touch the ◀▶ keys (5) and (6) on the screen to return to the position where sewing is to be resumed.</p> <p>When you touch the ◀ key (5), the feed will move backward by 1 stitch, and when you touch the ▶ key (6), the feed will move forward by 1 stitch.</p>
3	<p>The diagram shows the left emergency stop switch (1) and the right emergency stop switch (2) on the sewing machine.</p>	Press the left switch (1) and the right switch (2) together.

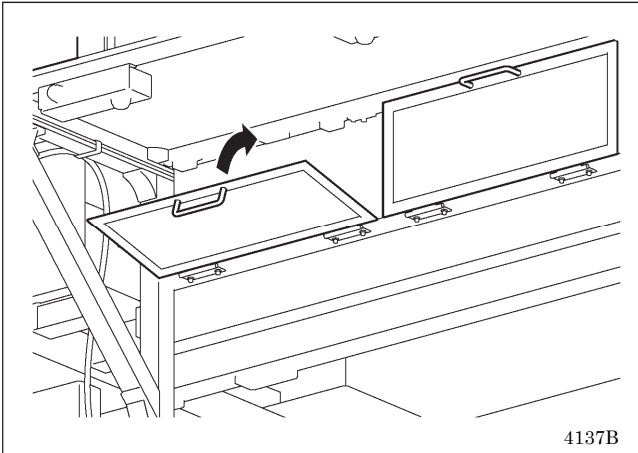
<Returning to the sewing start position without continuing sewing>

If you do not wish to continue sewing, touch "No" (4).

- After home position detection is carried out, the mechanism will return to the sewing start position.

5-3. Opening and closing the front cover

If the front cover is opened during sewing, the sewing machine will stop immediately and an error dialog box will be displayed.



<Clearing>

1. Close the front cover.
2. Refer to "<Clearing>", "<Continuing sewing from a stopping point>" and "<Returning to the sewing start position without continuing sewing>" in 5-2.

NOTE:

- If you touch the Reset key without closing the front cover, the error will not be cleared.

6. CLEANING

CAUTION



Turn off the power switch before carrying out cleaning.

If this is not done, the sewing machine may operate if a switch is pressed by mistake, which could result in serious injury.

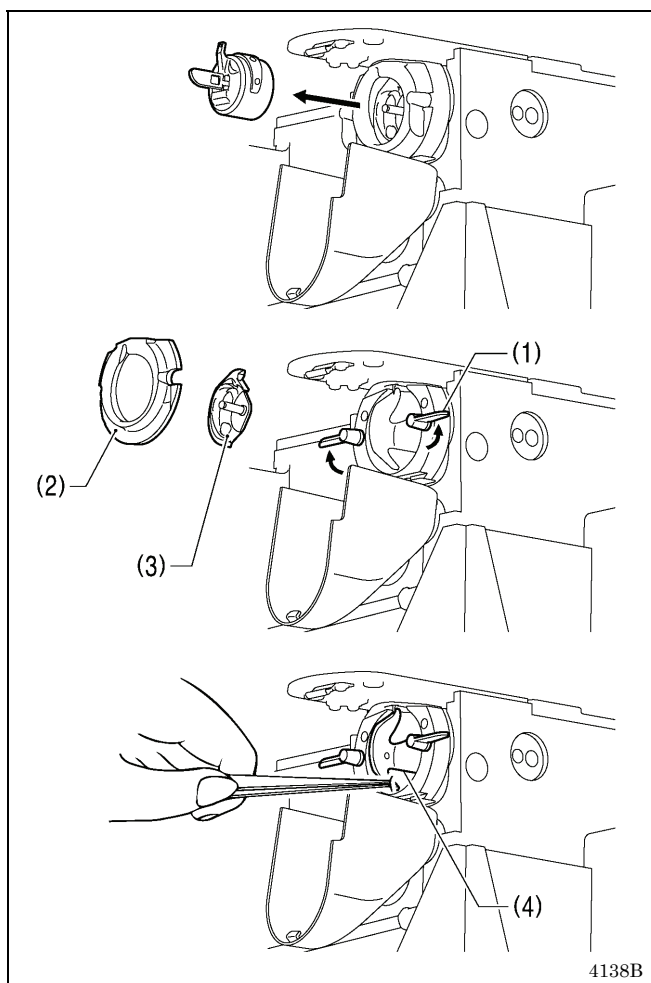


Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin. If the oil and grease get into your eyes or onto your skin, inflammation can result.

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

Keep the oil out of the reach of children.

6-1. Cleaning the rotary hook



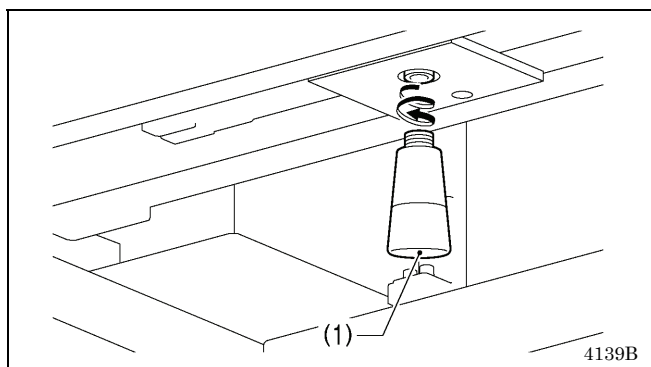
1. Pull the shuttle race cover downward to open it, and then remove the bobbin case.

* It may be easier to clean the rotary hook if it is done in maintenance mode. Refer to "7-1. Preparing the rotary hook for maintenance".

2. Open the setting claw (1) in the direction indicated by the arrow, and then remove the shuttle race base (2) and the shuttle hook (3).

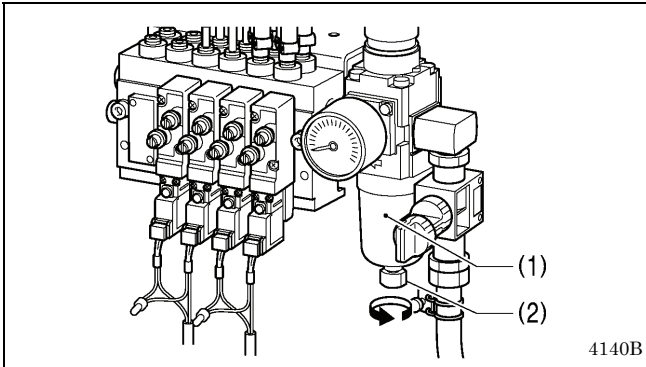
3. Clean all the dust and lint from around the driver (4), the top of the rotary hook thread guide and the shuttle race.

6-2. Draining the oil



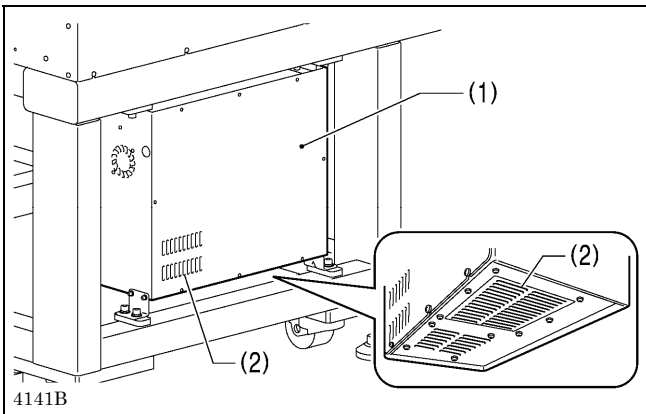
1. Remove and empty the oiler (1) whenever it is full.
2. After emptying oiler (1), screw it back into its original position.

6-3. Checking the regulator



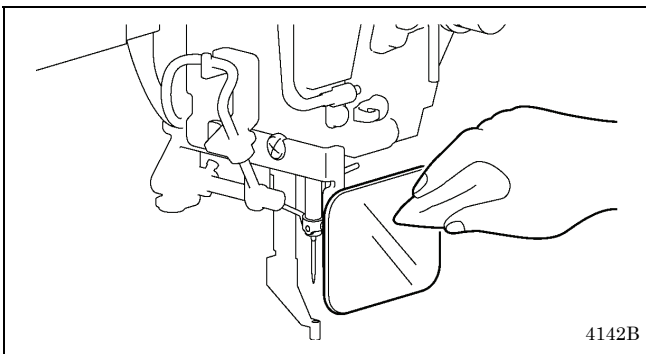
1. If water collects in the bottle of the regulator (1), turn the drain cock (2) in the direction of the arrow to drain the water.
2. After draining the water, tighten the drain cock (2).

6-4. Cleaning the control box air inlet ports



Use a vacuum cleaner to clean the filter in the air inlet ports (2) of the control box (1) at least once a month.

6-5. Cleaning the eye guard

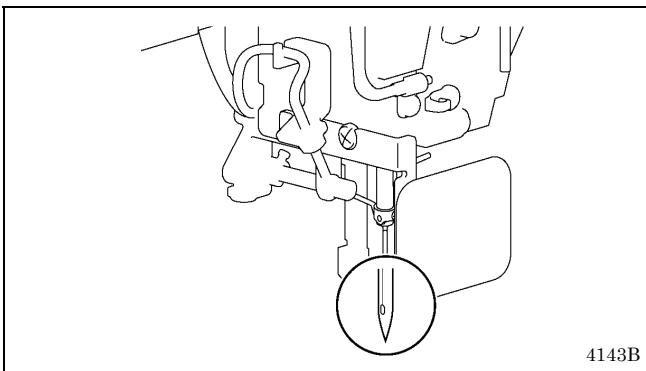


Wipe the eye guard clean with a soft cloth.

NOTE:

Do not use solvents such as kerosene or thinner to clean the eye guard.

6-6. Checking the needle










Always check that the tip of the needle is not broken and also that the needle is not bent before starting sewing.

6-7. Lubrication

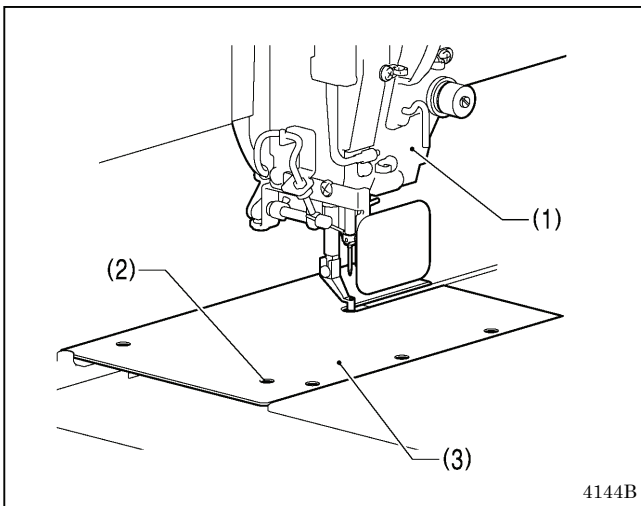
Lubricate the sewing machine while referring to "3-7. Lubrication".

7. STANDARD ADJUSTMENTS

CAUTION

-  Maintenance and inspection of the sewing machine should only be carried out by a qualified technician.
-  Ask your Brother dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.
-  Turn off the power switch and disconnect the power cord before carrying out the following operations. If this is not done, the sewing machine may operate if a switch is pressed by mistake, which could result in serious injury.
 - Inspection, adjustment and maintenance
 - Replacing consumable parts such as the rotary hook
-  Disconnect the air hoses from the air supply and wait for the needle on the pressure gauge to drop to "0" before carrying out inspection, adjustment and repair of any parts which use the pneumatic equipment.
-  If the power switch and air need to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.
-  Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin. If the oil and grease get into your eyes or onto your skin, inflammation can result. Furthermore, do not drink or eat the lubricating oil or grease. They may cause diarrhea or vomiting. Keep the oil out of the reach of children.
-  If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check that they operate correctly before using the machine.

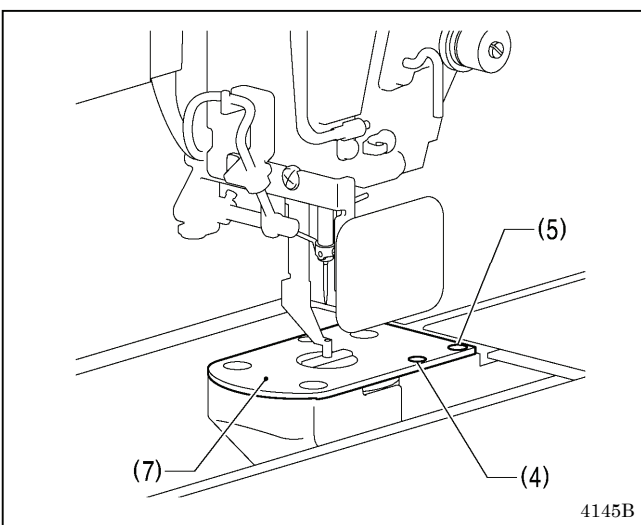
7-1. Preparing the rotary hook for maintenance



When carrying out adjustments in the area around the rotary hook, first switch the sewing machine to maintenance mode, and then move the machine head (1) to the left edge.

(For details on the method of operation, refer to the LCD panel instruction manual.)

Next, remove the five screws (2), and then remove the maintenance cover (3).

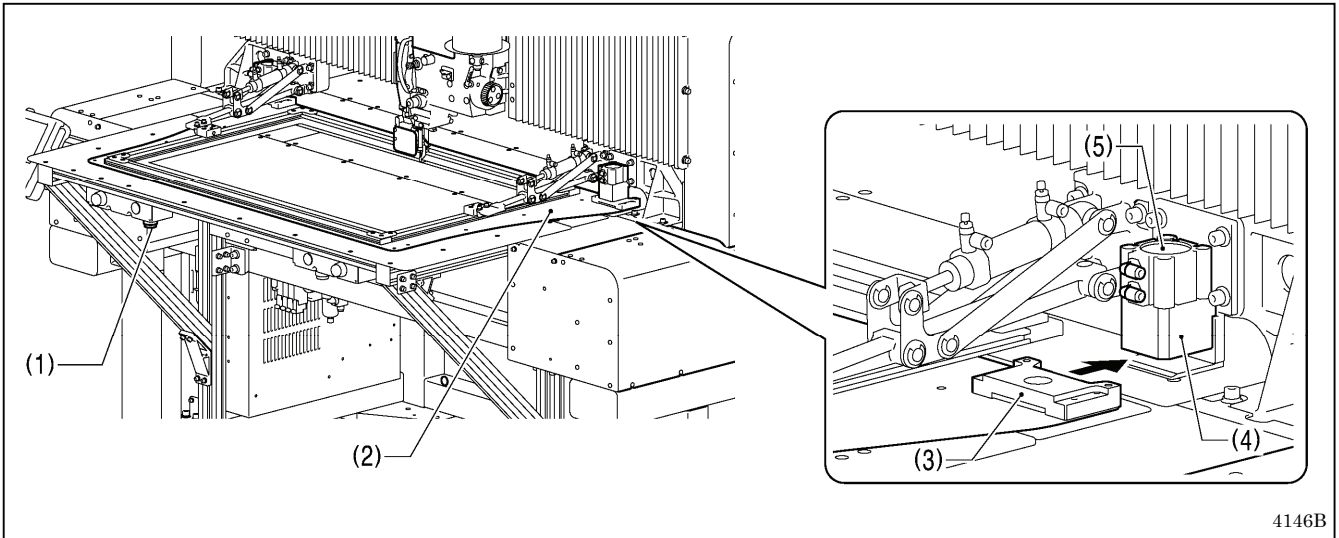


Next, remove the two screws (4) and the two flat screws (5), and then remove the needle plate (7).

Applicable tasks:

- Adjusting the needle and rotary hook timing
- Adjusting the driver (needle guard) position
- Adjusting the clearance between the needle and rotary hook tip
- Adjusting the shuttle race thread guide
- Replacing the movable knife and fixed knife

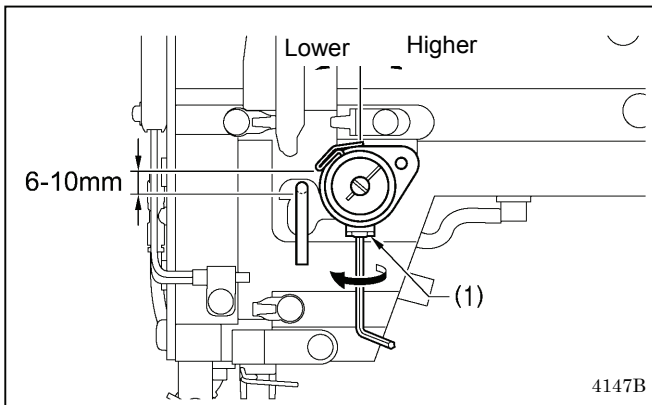
7-2. Removing and installing the feed plate



4146B

1. When the left switch (1) is pressed, the feed plate (2) will unlock so that it can then be removed.
Pull the feed plate (2) directly forward to remove it.
2. When installing the feed plate (2), if the two feed plate lock plates (3) are fitted into the gaps in the two cylinder mounting blocks (4), the two lock cylinders (5) will automatically operate and the feed plate (2) will be locked.

7-3. Thread take-up spring

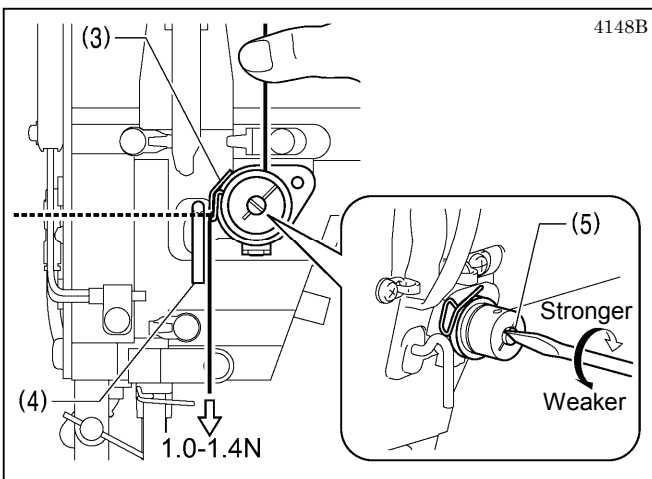


4147B

Thread take-up spring height (mm)	6 - 10
Thread take-up spring tension (N)	1.0 - 1.4

<Thread take-up spring height>

Loosen the set screw (1) and turn the adjuster to adjust.



4148B

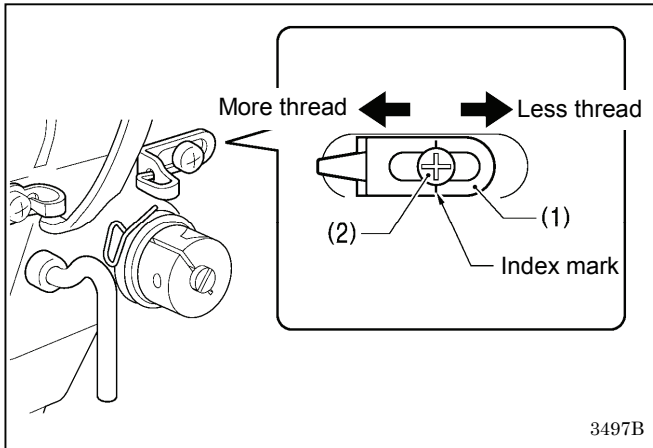
<Thread take-up spring tension>

1. Press the upper thread slightly above the tension bracket with a finger to stop the thread spooling out.
2. Pull the upper thread downward so that the thread take-up spring (3) is extended to the same height as the base of the thread guide arm (4), and then measure the tension of the thread take-up spring (3).
3. Use a screwdriver to turn the tension stud (5) in order to adjust the tension of the thread take-up spring (3).

NOTE:

If the thread tension spring (3) is not adjusted correctly, the upper thread trailing length will be uneven after thread trimming.

7-4. Arm thread guide R

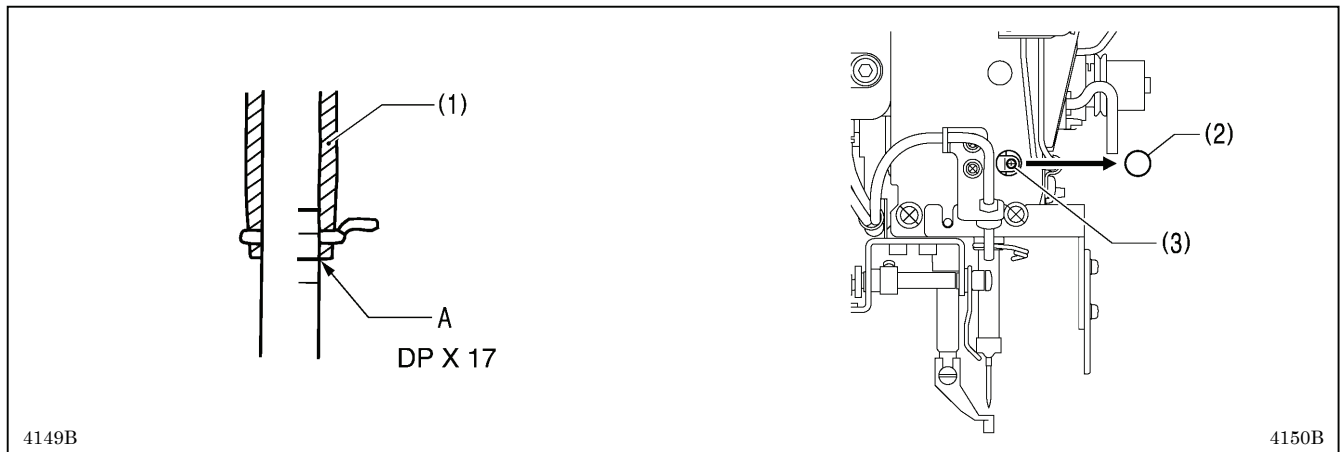


The standard position of arm thread guide R (1) is when the screw (2) is aligned with the index mark.

Loosen the screw (2) and move the arm thread guide R (1) to adjust.

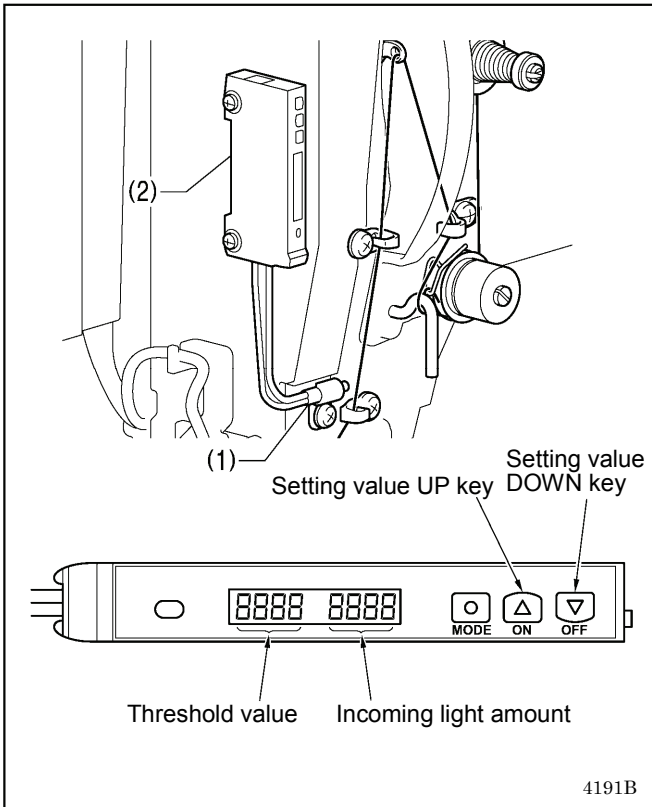
- When sewing heavy-weight material, move the arm thread guide R (1) to the left. (The thread take-up amount will become greater.)
- When sewing light-weight material, move the arm thread guide R (1) to the right. (The thread take-up amount will become smaller.)

7-5. Adjusting the needle bar height





Turn the pulley in the direction of the arrow to move the needle bar to the lowest position. Then remove the rubber plug (2), loosen the screw (3) and then move the needle bar up or down to adjust so that the second reference line from the bottom of the needle bar (reference line A) is aligned with the lower edge of the needle bar bush (1).

7-6. Adjusting the sensitivity of the thread breakage sensor



1. Thread the upper thread and pull the upper thread straight.
2. When the red light from the fiber strikes the thread, check that the incoming light amount is smaller than the threshold value for the fiber amplifier (2).

If the incoming light amount is greater than the threshold value, increase the threshold value.

Press the  (setting increase) or  (setting decrease) key to change the threshold value.

(Keep pressing the key to accelerate the change speed.)

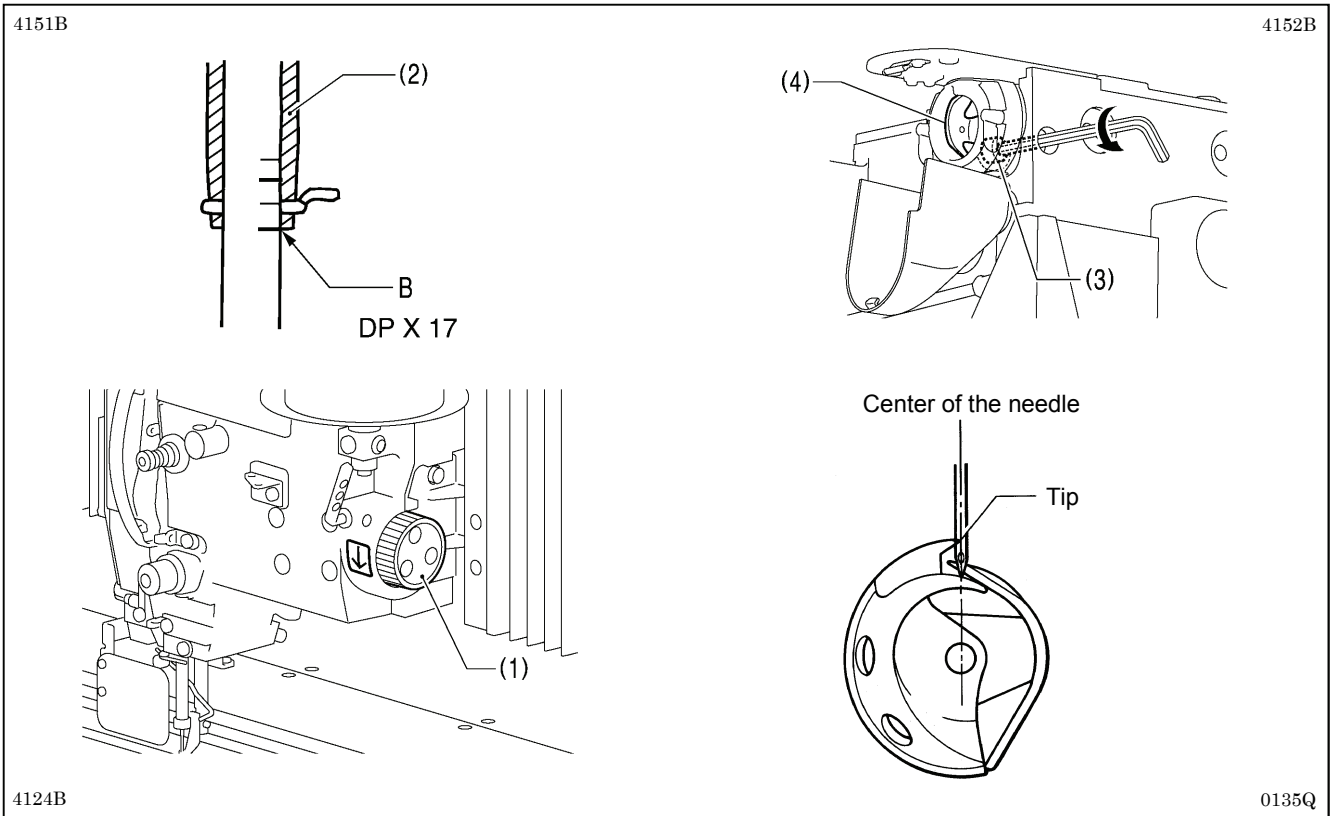
3. Pull the thread straight once more, and if the incoming light amount is smaller than the threshold value, adjustment of the sensor sensitivity is complete.

NOTE:

Thread breakages may be difficult to detect depending on the thickness of the thread and the type of material being sewn. In such cases, adjust the threshold value, or change the number of stitches for judgment of an upper thread breakage.

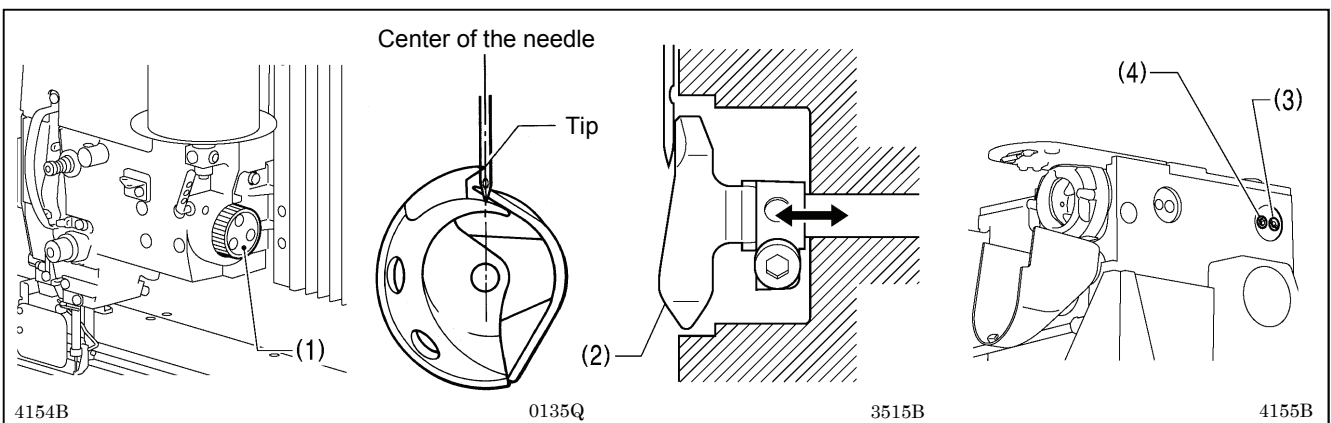
* Contact the place of purchase for information on the method of changing the number of stitches for judgment of an upper thread breakage.

7-7. Adjusting the needle and rotary hook timing



1. Turn the pulley (1) in the direction of the arrow to raise the needle bar from the lowest position until the lowest reference line on the needle bar (reference line B) is aligned with the lower edge of the needle bar bush (2).
2. Loosen the bolt (3).
3. Move the driver (4) sideways so that the tip of the rotary hook is aligned with the middle of the needle, and then tighten the bolt (3).

7-8. Adjusting the driver (needle guard) position

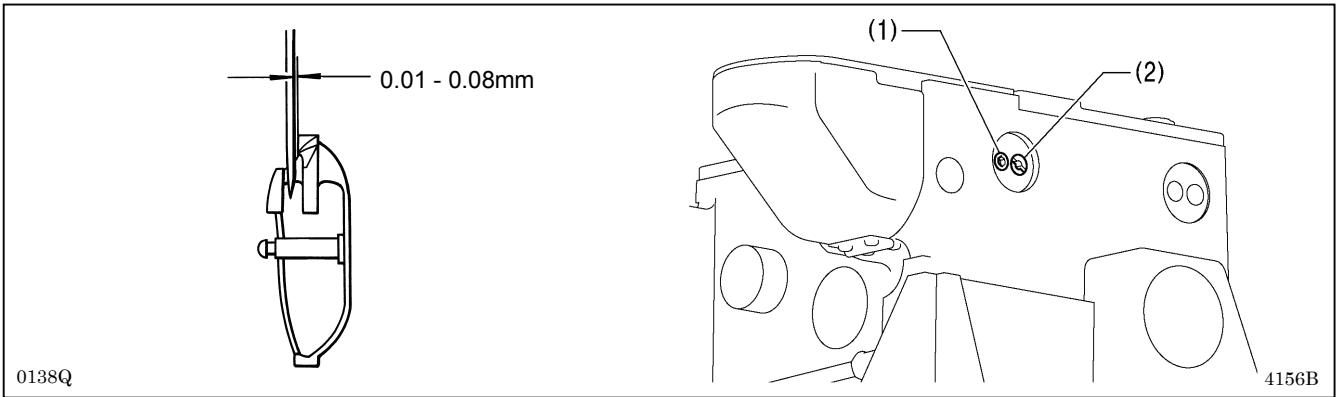


Turn the pulley (1) in the direction of the arrow to align the tip of the rotary hook with the center of the needle, and then loosen the screw (3) and turn the adjusting stud (4) to adjust so that the driver (2) is touching the needle.

NOTE:

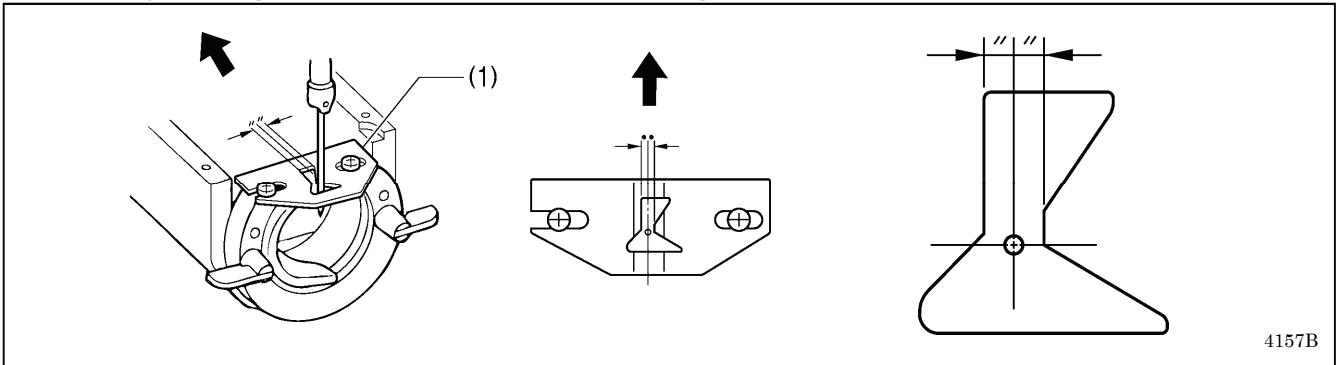
If the driver (2) crosses the needle more than necessary, it will cause problems with the thread tension. Furthermore, if it does not cross the needle at all, the tip of the rotary hook will interfere with the needle and skipped stitches may occur.

7-9. Adjusting the clearance between the needle and rotary hook tip



Turn the pulley in the direction of the arrow to align the tip of the rotary hook with the center of the needle, and then loosen the set screw (1) and turn the adjusting stud (2) to adjust so that the clearance between the needle and the tip of the rotary hook is 0.03 to 0.08 mm.

7-10. Adjusting the shuttle race thread guide



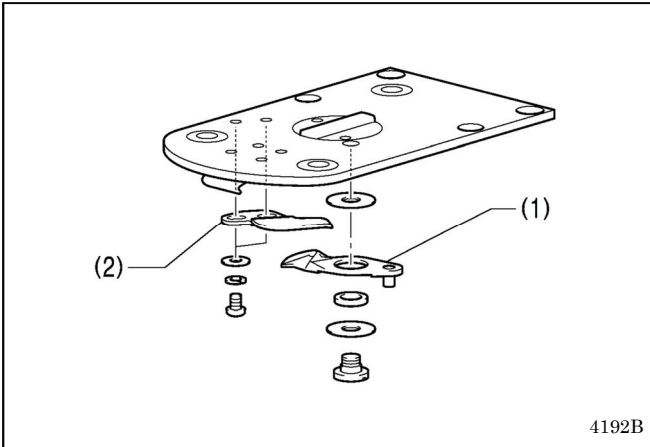
Install the shuttle race thread guide (1) by pushing it in the direction of the arrow so that the needle groove is aligned with the center of the needle plate hole.

NOTE:

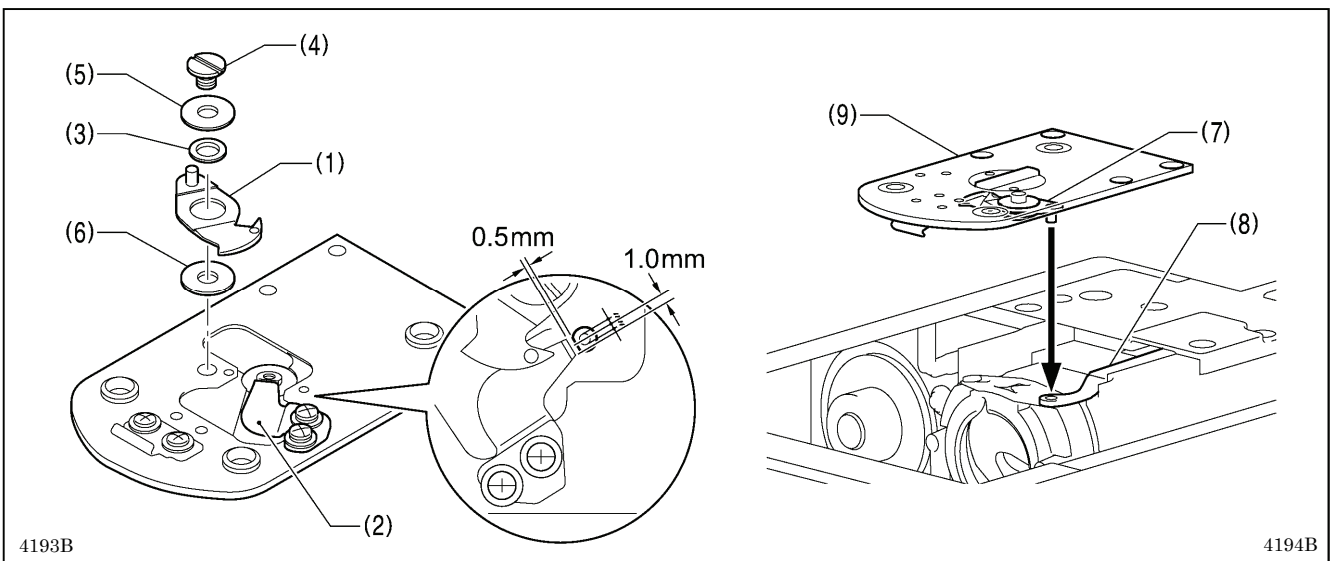
If the shuttle race thread guide (1) is in the wrong position, thread breakages, soiled thread or tangling of the thread may occur.

The position of the shuttle race thread guide (1) is adjusted at the time of shipment from the factory. It should not be changed if possible.

7-11. Replacing the movable and fixed knives

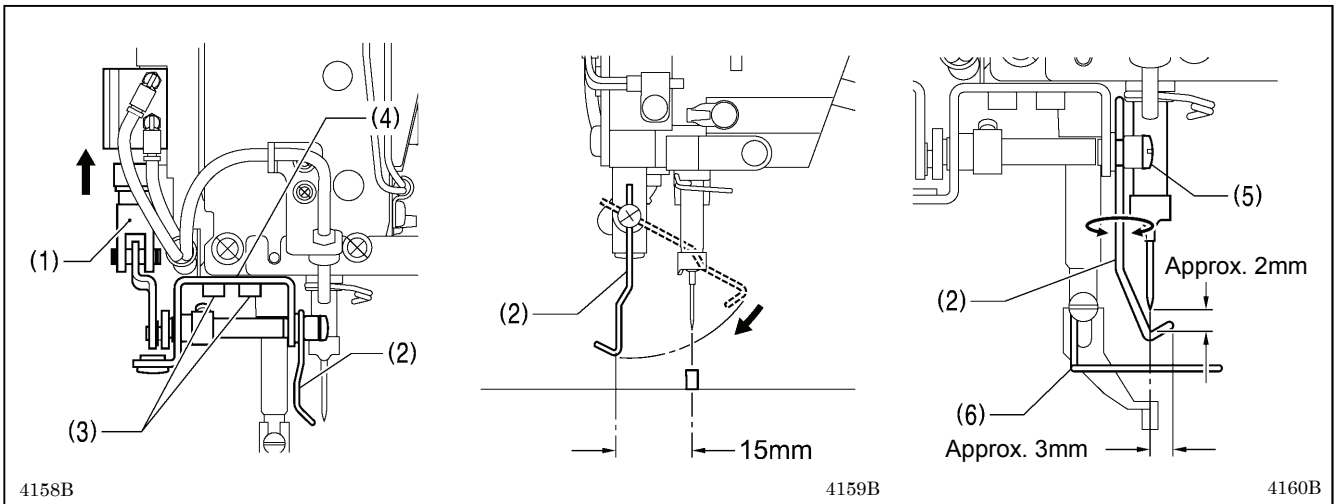


1. Remove the movable knife (1) and the fixed knife (2).



2. Install the new fixed knife (2) in the positions shown in the illustration.
3. Apply grease to the outside of the collar (3) and to the shoulder screw (4), and then install the new movable knife (1) together with the thrust washer (5) and movable knife spacer (6).
4. Check that the movable knife (1) and fixed knife (2) cut the thread cleanly. Replace the movable knife spacer with accessory spacers (10) ($t=0.2, 0.3, 0.4$) so that the knives trim the thread accurately.
 - * If the knife pressure is too weak and the thread is not completely cut, use a thinner movable knife spacer.
 - * If the knife pressure is too strong and the movable knife (1) turns stiffly, use a thicker movable knife spacer.
5. Apply grease to the pin (7) of the movable knife, insert it into the hole in the movable knife connecting plate (8), and then install the needle plate (9).
6. Check that the needle is aligned with the center of the needle hole.

7-12. Adjusting the thread wiper

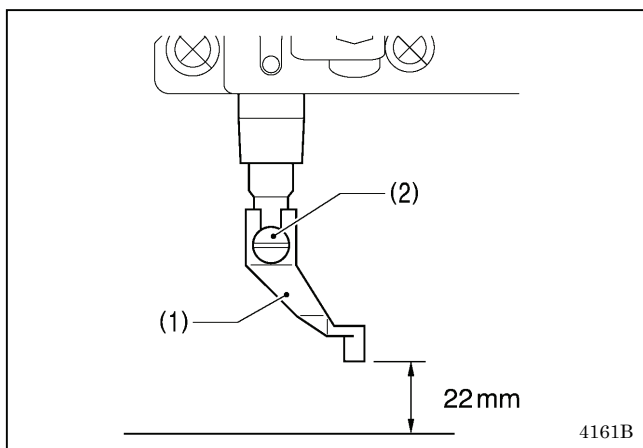


1. Loosen the two screws (3) and move the thread wiper shaft bracket (4) to the left or right to adjust so that the thread wiper (2) is 15 mm to the left of the needle center when the cylinder (1) operates until it is pulled out to its full stroke.
2. Loosen the screw (5) and adjust the position of the thread wiper (2) so that the distance from the thread wiper to the tip of the needle is approximately 2 mm and the tip of the thread wiper (2) is approximately 3 mm from the center of the needle when the thread wiper (2) passes below the needle during operation.

NOTE:

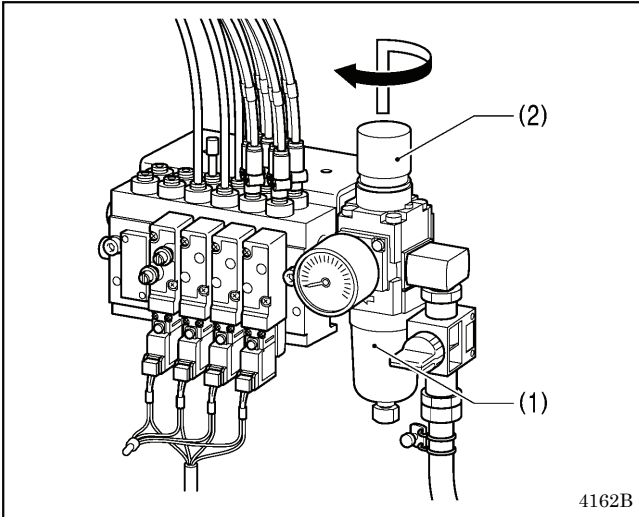
Check that the thread wiper (2) does not touch the finger guard (6).

7-13. Intermittent presser foot installation position



Install the intermittent presser foot (1) with the screw (2) so that the distance from the bottom of the intermittent presser foot (1) to the top of the needle plate is 22 mm when the sewing machine is stopped and the intermittent presser foot (1) is raised

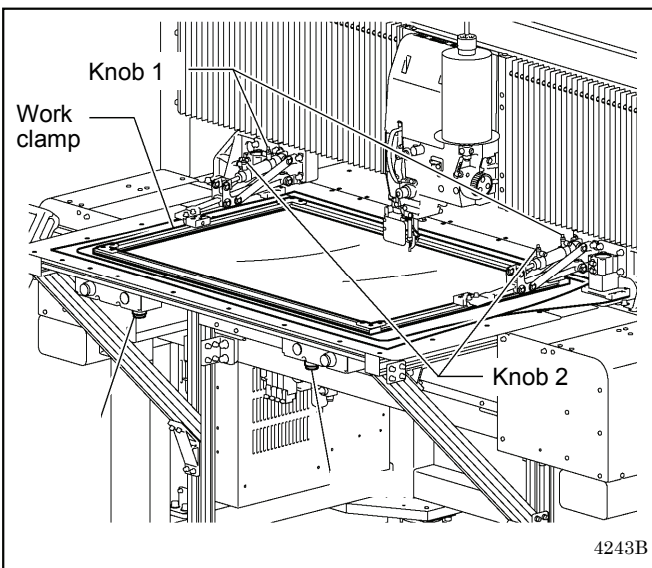
7-14. Adjusting the air pressure



Lift up the handle (2) of the regulator (1) and then turn it to adjust the air pressure to 0.5 MPa.

After adjustment is complete, push the handle (2) downward to lock it.

7-15. Adjusting the speed controller



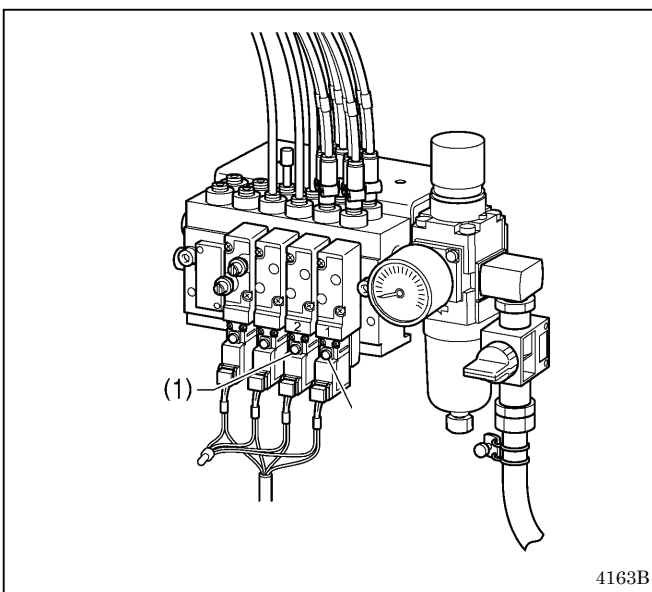
You can adjust the lifting and lowering speeds for the work clamp using the knobs on the valves.

- When the knob 1 is tightened, the lifting speed becomes slower. When it is loosened, the lifting speed becomes faster.
- When the knob 2 is tightened, the lowering speed becomes slower. When it is loosened, the lowering speed becomes faster.

Reference adjustments

Knob 1	Fully tighten
Knob 2	Fully tighten and then loosen by 8 turns

You can operate the work clamp when the power is turned off by pressing the manual button (1).

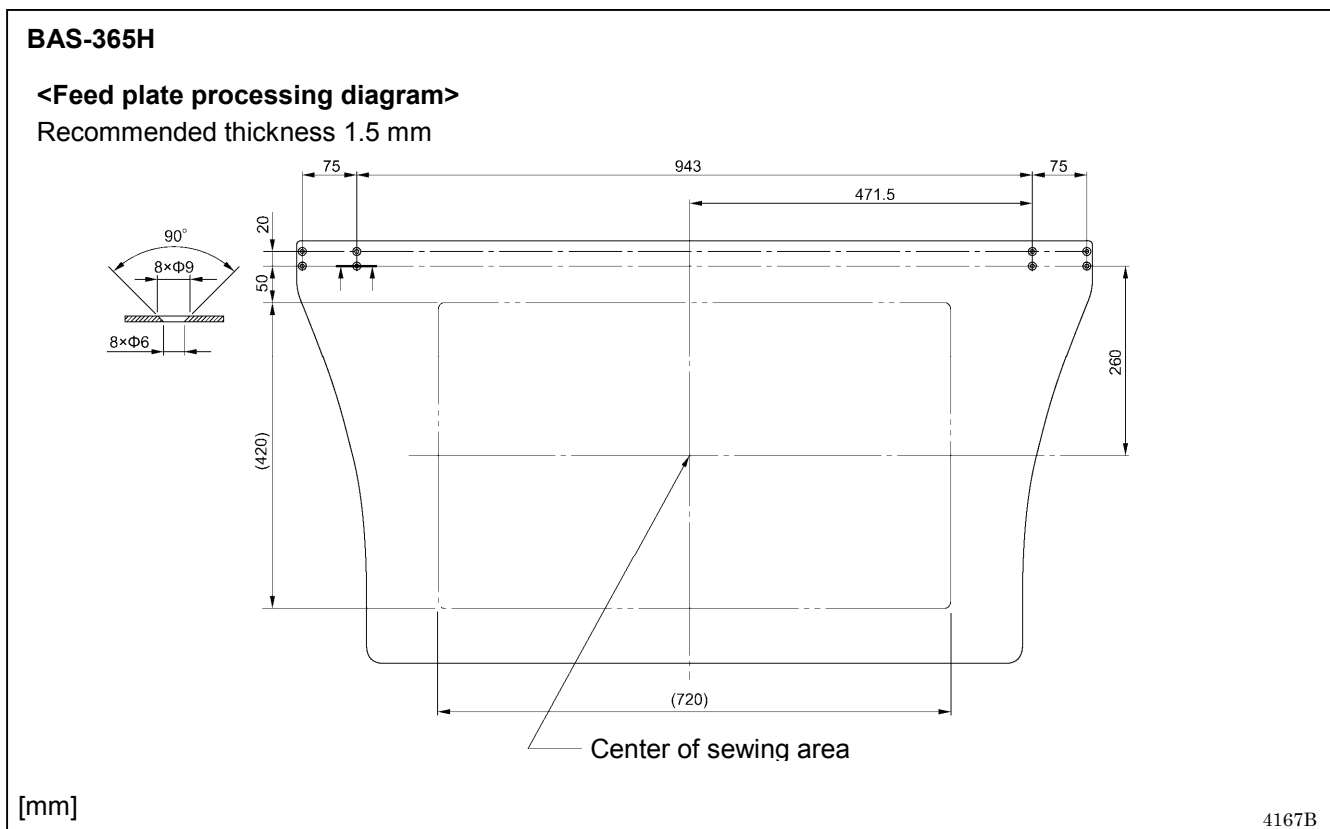
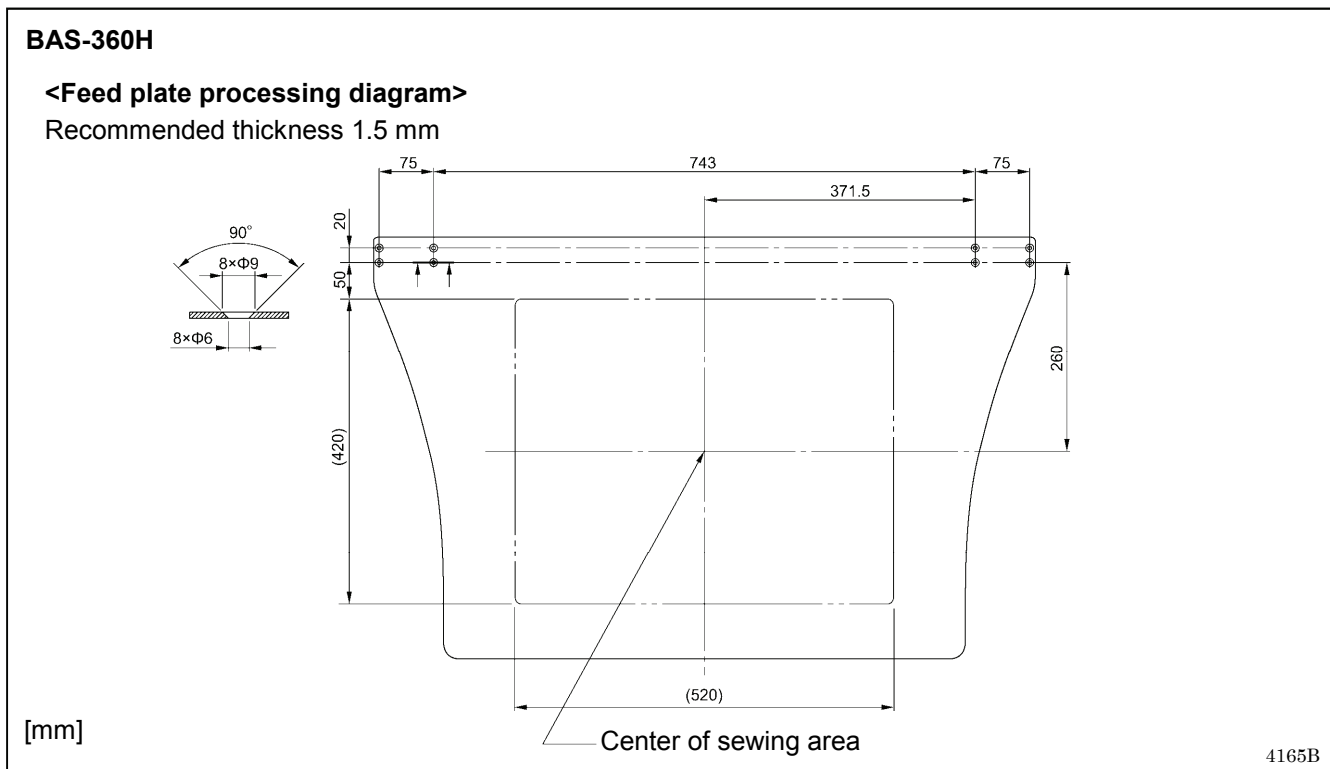


7. STANDARD ADJUSTMENTS

7-16. If processing the feed plate to a shape that matches the sewing pattern

Process the work clamp and feed plate which match the sewing pattern, while referring to the processing diagram below.

* Values in () are the recommended sizes when sewing using the maximum area (BAS-360H: 500x400 mm, BAS-365H: 700x400 mm)



8. LIST OF ERROR CODES





DANGER



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

If a malfunction occurs with the sewing machine, a buzzer will sound and an error code will appear on the screen. Follow the remedy procedure to eliminate the cause of the problem.

Switch-related errors

Code	Cause of error and remedy
E010	The STOP switch was pressed. Press the Reset key to clear the error.
E011	The STOP switch was pressed. Press the Reset key to clear the error. You can press the     keys on the LCD panel to move the feed in order to continue sewing.
E012	The STOP switch was pressed. Press the Reset key to clear the error, and then the start switch or both the left and right switches to move the feed mechanism to the home position.
E015	The STOP switch was still being pressed when the power was turned on, or there is a problem with the stop switch connection. Turn off the power, and then check that the connector P40, P41, P42, P43 on the main board is properly inserted.
E016	Problem with the STOP switch connection. Turn off the power, and then check that the connector P40, P41, P42, P43 on the main board is properly inserted.
E020	The start switch was pressed or the left and right switches were pressed at the same time without the work clamp being lowered. First lower the work clamp.
E021	The feed plate is not loaded properly. Make sure the position of the feed plate and try again.
E025	The right switch was being depressed (For 2, 3 pedal, start switch was being depressed) when power was turned on. Release the pedal or switch.
E035	Work clamp switch or left switch was being depressed when power was turned on. Release the pedal or switch.
E054	The front cover was open when power was turned on. Close the front cover.
E064	Touch panel was being touched when power was turned on. Release the touch panel.
E065	A key on the LCD panel was still being pressed when the power was turned on, or key is faulty. Release the key.
E070	Front cover was opened. After front cover closed, press the Reset key to clear the error.
E071	Front cover was opened. After front cover closed, press the Reset key to clear the error. You can press the keys on the LCD panel to move the feed in order to continue sewing.
E072	Front cover was opened. After front cover closed, press the Reset key to clear the error, then press both left and right switch at the same time, and conduct the home position detection.

8. LIST OF ERROR CODES

Motor-related errors

Code	Cause of error and remedy
E100	Replace the lubricating oil and apply grease after turning off the power of the sewing machine. After that, operate the prescribed reset procedure.
E101	Replace the lubricating oil and apply grease. After that, press the Reset key.
E110	The needle bar is not stopped in the needle up stop position. Turn the pulley until the point where the error display disappears.
E111	Upper shaft did not stop at the needle up stop position when the sewing machine stopped. Turn off the power, and then check that connectors P11 and P1 on the motor board and connector P6 on the main board are properly inserted.
E121	Thread trimming was not completed. Turn off the power, and then check if the cutting edges of the fixed knife and movable knife are damaged or worn.
E130	Upper shaft motor stopped due to a problem, or synchronizer is faulty. Turn off the power, and then turn the pulley and check if the sewing machine has locked up. Check that connectors P11 and P1 on the motor board, connector P6 on the main board and the 4-pin connector of the upper shaft motor on the motor board
E131	Synchronizer is not connected correctly. Turn off the power, and then check that connector P11 on the motor board is properly connected.
E132	Problem detected with upper shaft motor operation. Turn off the power, and then check that connectors P11 and P1 on the motor board, connector P6 on the main board and the 4-pin connector of the upper shaft motor on the motor board are properly inserted.
E133	Upper shaft motor stopping position is incorrect. Turn off the power, and then check that connectors P11 and P1 on the motor board, connector P6 on the main board and the 4-pin connector of the upper shaft motor on the motor board are properly inserted.
E150	Upper shaft motor is overheating, or temperature sensor is faulty. Turn off the power, and then check the upper shaft motor. (When sewing data with a small number of stitches (15 stitches or less) is sewn repeatedly (short cycle operation), the upper shaft motor may overheat and the "E150" error code may be generated.)

Feed mechanism-related errors

Code	Cause of error and remedy
E200	X-feed motor home position cannot be detected. Problem with X-feed motor or poor X home position sensor connection. Turn off the power, and then check that connectors P17, P21 and P8 on the main board are properly connected.
E201	X-feed motor stopped due to a problem. Turn off the power, and then check if there are any problems in the X-feed direction. Turn off the power, and then check that connectors P17 and P21 on the main board are properly connected.
E204	X-feed motor stopped due to a problem during sewing. Turn off the power, and then check if there are any problems in the X-feed direction. Turn off the power, and then check that connectors P17 and P21 on the main board are properly connected.
E205	X-feed motor stopped due to a problem while moving to the sewing start position. Turn off the power, and then check if there are any problems in the X-feed direction. Turn off the power, and then check that connectors P17 and P21 on the main board are properly connected.
E206	X-feed motor stopped due to a problem during test feeding. Turn off the power, and then check if there are any problems in the X-feed direction. Turn off the power, and then check that connectors P17 and P21 on the main board are properly connected.
E210	Y-feed motor home position cannot be detected. Problem with Y-feed motor or poor Y home position sensor connection. Turn off the power, and then check that connectors P18, P22 and P8 on the main board are properly connected.
E211	Y-feed motor stopped due to a problem. Turn off the power, and then check if there are any problems in the Y-feed direction. Turn off the power, and then check that connectors P18 and P22 on the main board are properly connected.
E214	Y-feed motor stopped due to a problem during sewing. Turn off the power, and then check if there are any problems in the Y-feed direction. Turn off the power, and then check that connectors P18 and P22 on the main board are properly connected.
E215	Y-feed motor stopped due to a problem while moving to the sewing start position. Turn off the power, and then check if there are any problems in the Y-feed direction. Turn off the power, and then check that connectors P18 and P22 on the main board are properly connected.
E216	Y-feed motor stopped due to a problem during test feeding. Turn off the power, and then check if there are any problems in the Y-feed direction. Turn off the power, and then check that connectors P18 and P22 on the main board are properly connected.
E230	Feed motor stopped due to a problem. Reduce the sewing speed or change the operation settings to the settings for heavy-weight materials. Ask the place of purchase for details on the setting method.

Work clamp-related errors

Code	Cause of error and remedy
E300	Work clamp home position cannot be detected. Problem with work clamp motor or poor work clamp home position sensor connection. Turn off the power, and then check that connectors P19, P23 and P8 on the main board are properly connected.
E301	Work clamp raised or lowered position cannot be detected. Turn off the power, and then check if there are any problems in the work clamp vertical direction. Turn off the power, and then check that connectors P19 and P23 on the main board are properly connected.

8. LIST OF ERROR CODES

Communication and memory-related errors

Code	Cause of error and remedy
E401	Communication error detected between the main board and the motor board when the power was turned on. Turn off the power, and then check that connector P10 on the programmer main board inside the LCD panel and the connector on the right side of the control box and connectors P2 and P3 on the motor board are properly connected.
E410	Communication error detected between the main board and the panel board. Turn off the power, and then turn it back on again. Turn off the power, and then check that connector P10 on the programmer main board inside the LCD panel and the connector on the right side of the control box and connectors P2 and P3 on the motor board are properly connected.
E411	Communication error detected between the main board and the motor board. Turn off the power, and then turn it back on again. Turn off the power, and then check that connector P10 on the programmer main board inside the LCD panel and the connector on the right side of the control box and connectors P2 and P3 on the motor board are properly connected.
E420	No storage media is inserted. Press the Reset key to clear the error. Insert the storage media and then try again.
E421	The program number is invalid or it has no corresponding data. Press the Reset key to clear the error. Check that data for this program number is present on the storage media.
E422	Error occurred while reading. Press the Reset key to clear the error. Check the data.
E425	Error occurred while writing to storage media. Check the storage media. It may be write-protected. There is a possibility of a failure of the storage media or free space shortage in the storage media. Press the Reset key to clear the error. Use the specified storage media.
E427	The program containing the specified cycle program has been cleared. Press the Reset key to clear the error. Redo the cycle program.
E430	Cannot be access to the main board (flash memory). Turn off the power, and then turn it back on again.
E435	Cannot be access to the programmer main board (flash memory). Turn off the power, and then turn it back on again.
E440	Cannot be access to the main board (EEPROM). Turn off the power, and then turn it back on again.
E445	Cannot be access to the programmer main board (EEPROM). Turn off the power, and then turn it back on again.
E450	Model selection cannot be read from the machine head memory. Turn off the power, and then check that connector P16 on the main board is properly connected.
E452	Machine head memory is not connected. Turn off the power, and then check that connector P16 on the main board is properly connected. * If you press the Reset key to clear the error, you can restart the machine using the backup data in the machine head memory.
E453	Problem with data in machine head memory. Turn off the power, and then turn it back on again.
E454	Problem with data in machine head memory. Press the Reset key to clear the error and then the data will be recovered.
E471	The program number is invalid or it has no corresponding data. Check that data for this program number is present in the internal memory.
E474	Internal memory is full and copying is not possible. Press the Reset key to clear the error. Clear the sewing data.

Data editing-related errors

Code	Cause of error and remedy
E500	The enlargement ratio setting caused the sewing data to extend outside the sewing area. Set the enlargement ratio again. Press the Reset key to clear the error.
E502	The enlargement ratio caused the data pitch to exceed the maximum pitch of 20.0 mm. Press the Reset key to clear the error. Set the enlargement ratio again.
E510	Error in sewing data. Press the Reset key to clear the error. If an error occurs while reading or revising the sewing data, revise the data.
E511	No end code has been input into pattern data. Press the Reset key to clear the error.
E512	Number of stitches exceeds allowed maximum. Press the Reset key to clear the error.
E520	Extended option output number already exists. Change the extended option output number. If not using the extended option output, initialize the data to clear the extended option output data.
E581	Memory switch file cannot be read correctly. The model for the data which was read does not match the model being written to. Press the Reset key to clear the error. Read data for the same sewing machine model.
E582	Memory switch versions do not match. Press the Reset key to clear the error. Read data for the same version.
E583	User program versions do not match. Press the Reset key to clear the error. Read data for the same version.

Device-related errors

Code	Cause of error and remedy
E600	Upper thread breakage occurred. Thread the upper thread. Press the Reset key to clear the error. Re-sewing is possible.
E601	Lift lock sensor was not detected. Problem with either the needle bar base or lift lock sensor connection. Turn off the power, and then check that connectors P10 and P13 on the main board are properly inserted.
E602	Detection problem with lift lock sensor. Problem with either the needle bar base or lift lock sensor connection. Turn off the power, and then check that connectors P10 and P13 on the main board are properly inserted.
E603	Lift down sensor was not detected. Problem with either the needle bar base or lift lock sensor connection. Turn off the power, and then check that connectors P10 and P13 on the main board are properly inserted.
E604	Detection problem with lift down sensor. Problem with either the needle bar base or lift lock sensor connection. Turn off the power, and then check that connectors P10 and P13 on the main board are properly inserted.
E670	Problem with the lower thread detector. Turn off the power, and then check the lower thread detector.
E690	Home position of thread trimmer motor was not detected. Problem with either the thread trimmer motor or the connection. Turn off the power, and then check if the back side of needle plate is blocked with scraps of thread. Check that the connector P4 and P20 on the main board is properly inserted.
E692	Thread trimmer motor stopped due to a problem. Problem with either the thread trimmer motor or the connection. Turn off the power, and then check if the back side of needle plate is blocked with scraps of thread. Check that the connector P4 and P20 on the main board is properly inserted.

8. LIST OF ERROR CODES

P.C. board-related errors

Code	Cause of error and remedy
E700	Abnormal rise in power supply voltage. Turn off the power, and then check the input voltage.
E701	Abnormal rise in upper shaft motor drive voltage. Turn off the power, and then check the voltage.
E702	The installed motor board is not supported by this sewing machine. Please ask the place of purchase for details.
E705	Abnormal drop in power supply voltage. Turn off the power, and then check the input voltage.
E710	Abnormal current detected in upper shaft motor. Turn off the power, and then check if there are any problems with the sewing machine. Turn off the power, and then check that connectors P11 and P1 on the motor board, connector P6 on the main board and the 4-pin connector of the upper shaft motor on the motor board are properly inserted.
E711	Abnormal current detected in pulse motor. Turn off the power, and then check if there are any problems with the work clamp operation.
E730	External error input (AIRSW) detected. Turn off the power, and then check the air pressure.
E740	Control box cooling fan does not operate. Turn off the power, and then check if the cooling fan is blocked with scraps of thread. Check that connector P38 on the main board is properly connected.
E743	Upper shaft motor cooling fan does not operate. Turn off the power, and then check if the cooling fan is blocked with scraps of thread. Check that the connector P7 on the main board is properly inserted.
E744	Presser foot motor cooling fan does not operate. Turn off the power, and then check if the cooling fan is blocked with scraps of thread. Check that connector P7 on the main board is properly inserted

Version updating-related errors

Code	Cause of error and remedy
E860	No main control program is present. Install the main control program.
E861	The installed main software is not supported by this panel software. Please update the main software or the panel software.
E865	No motor control software is present. Install the motor control software.
E880	Software update request is not accepted. Turn off the power, and then turn it back on again.
E881	Software updating did not complete normally. Turn off the power, and then repeat the software update procedure.
E883	No control program is present in the storage media. Check that the control program has been saved into the correct folder.
E884	There is a problem with the control program. Write the correct file into the storage media.
E887	Software updating could not be carried out. Turn off the power, and then turn it back on again.
E888	Failed to send and receive software update file. Please try again.
E889	Written data to flash memory is incorrect. Please try again.
E890	Software updating could not be carried out. Please try again.

If an error code that is not listed above appears or if carrying out the specified remedy does not solve the problem, contact the place of purchase.

9. TROUBLESHOOTING

- Please check the following points before calling for repairs or service.
- If the following remedies do not fix the problem, turn off the power and consult a qualified technician or the place of purchase.

CAUTION



Turn off the power switch and disconnect the power cord before carrying out these operations. If this is not done, the sewing machine may operate if a switch is pressed by mistake, which could result in serious injury.

Items with a “*” in the “Reference” column should only be checked by a qualified technician.

Problem	Cause	Remedy	Reference
Sewing machine does not start when the power is turned on and the left and right switches on the sewing screen are pressed together.	The front cover open sensor is not working.	Check if the front cover open sensor cord is disconnected	
		Adjust the position of the front cover open sensor.	
		If the front cover open sensor is malfunctioning, replace it with a new one.	
Work clamp does not move.	Air cock is closed.	Open the air cock.	P. 5
	Air pressure is too weak.	Adjust the regulator so that the air pressure is about 0.5 MPa.	P. 34
	Speed controller has been tightened too far.	Adjust the speed controller by loosening it 4 turns from the fully-tightened position.	P. 34
Thread wiper does not work.	Thread wiper setting is OFF.	Set the thread wiper setting to ON.	(*1)
Work clamp pressure is too weak.	Air pressure is too weak.	Adjust the regulator so that the air pressure is about 0.5 MPa.	P. 34
Thread wiper does not operate correctly.	The thread wiper is obstructing the needle.	Adjust the height of the thread wiper.	P. 33
		Adjust the operating stroke of the thread wiper.	P. 33
	Thread wiper position is incorrect.	Adjust the operating stroke of the thread wiper.	P. 33

(Continued on next page)

(*1) Refer to the “LCD Panel/Operation Panel” Instruction Manual.

9. TROUBLESHOOTING



Problem	Cause	Remedy	Reference
Lower thread winds to one side.	Height of bobbin winder tension assembly is incorrect.	Adjust the height of the bobbin winder tension assembly.	P. 17
Lower thread winding amount is incorrect.	Bobbin presser position is incorrect.	Adjust the position of the bobbin presser.	P. 17
Thread unraveling at sewing start.	Needle is too thick.	Select a needle that is suitable for the sewing conditions.	P. 18
	Upper thread trailing length is too short.	When threading the thread through the needle, allow a distance of approximately 42 mm between the needle hole and the end of the thread.	P. 13
		Adjust the sub-tension so that the upper thread trailing length after thread trimming is approximately 42 mm.	P. 19
	Amount of lower thread being fed out from bobbin is too small.	Set the feeding amount to approximately 30 mm.	P. 17
	Sewing start speed is too fast.	Adjust the sewing start speed.	(*1)
Skipped stitches occur.	Rotary hook tip is missing.	Replace the part.	
	Needle is too thin.	Select a needle that is suitable for the sewing conditions.	P. 18
	Needle is too thick.		
	Needle is bent.	Replace the needle.	P. 12
	Needle is not installed correctly.	Install the needle so that it faces correctly.	P. 12
	Needle and rotary hook tip are touching.	Adjust the driver needle guard.	P.30
	Clearance between needle and rotary hook tip is too large.	Adjust the needle clearance.	P. 31
	Needle and rotary hook timing is incorrect.	Adjust the timing.	P. 30
	Material is flapping.	Replace the needle hole plate with one with a smaller needle diameter.	
		Use a thinner feed plate. * Recommended thickness: 1.5 mm	
Process the work clamps and the feed plate into shapes that can hold the material near the seam.		P. 35	
Adjust the intermittent height of the intermittent presser foot.		(*1)	

(Continued on next page)

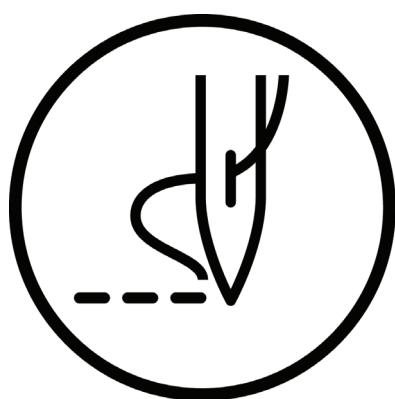
Problem	Cause	Remedy	Reference
Upper thread is breaking.	Thread is too thick for the needle.	Select a thread which is suitable for the needle.	P. 18
	Needle is not installed correctly.	Install the needle so that it faces correctly.	P. 12
	Thread is not threaded correctly.	Thread the thread correctly.	P. 13
	Damage or burring in parts such as the rotary hook, needle hole plate, needle or thread path.	Repair the respective part by buffing it. Alternatively, replace the part.	
	Needle and rotary hook timing is incorrect.	Adjust the timing.	P. 30
	Upper thread tension is too strong.	Reduce the upper thread tension.	P. 19
	Thread take-up spring tension is too strong.	Reduce the tension of the thread take-up spring.	P. 27
	Thread breaks due to heat.	Use a needle cooler unit (optional). Reduce the sewing speed.	P.13
Lower thread is breaking.	Damage to the needle hole plate or bobbin case.	Repair the respective part by buffing it. Alternatively, replace the part.	
	Lower thread tension is too strong.	Reduce the lower thread tension.	P. 18
Needle breaks.	Needle is bent.	Replace the needle.	P. 12
	Needle is too thin.	Select a needle that is suitable for the sewing conditions.	P. 18
	Needle and rotary hook tip are touching.	Adjust the driver needle guard.	P. 30
		Adjust the needle clearance.	P. 31
	Needle and rotary hook timing is incorrect.	Adjust the timing.	P. 30
Feed timing is too slow.	Advance the feed timing.	*	
Upper thread is not cut.	Movable knife is blunt.	Replace the movable knife with a new one.	P. 32
	Fixed knife is blunt.	Sharpen the fixed knife or replace it with a new one.	P. 32
	Movable knife is not picking up the upper thread.	Adjust the timing.	P. 30
		Adjust the standby position of the movable knife.	P. 32
	Movable knife is not picking up the needle thread because the last stitch is being skipped.	Refer to "Skipped stitches occur".	P. 43
Lower thread is not cut.	Lower thread tension is too weak.	Increase the lower thread tension.	P. 18

(Continued on next page)

9. TROUBLESHOOTING

Problem	Cause	Remedy	Reference
Upper thread is not tight.  0573M	Needle is too thin.	Select a needle that is suitable for the sewing conditions.	P. 18
	Hole diameter in needle hole plate is too small.	Replace the needle hole plate with one with a larger hole diameter.	
	Feed plate is too thin.	Use a thicker feed plate. *Recommended thickness: 1.5 mm	
	Hole diameter of intermittent presser foot is too small.	Replace the intermittent presser foot with one with a larger hole diameter.	
	Sliding parts of outer rotary hook and inner hook have little or no sewing machine oil.	Lubricate the felts for the sliding parts of the outer rotary hook and inner hook.	P. 11
	Damage or burring in parts such as the rotary hook, needle hole plate, needle or thread path.	Repair the respective part by buffing it. Alternatively, replace the part.	
	Lower thread tension is too strong.	Reduce the lower thread tension.	P. 18
	Upper thread tension is too weak.	Increase the upper thread tension. *Adjust the upper thread tension after adjusting the lower thread tension.	P. 19
	Thread take-up spring tension is too weak.	Increase the tension of the thread take-up spring.	P. 27
	Feed timing is too fast.	Retard the feed timing.	*
	Intermittent height of intermittent presser foot is too low.	Adjust the intermittent height of the intermittent presser foot.	(*1)
	Needle and rotary hook tip are touching. 0574M	Adjust the driver needle guard.	P. 30
Adjust the needle clearance.		P. 31	
Lower thread is not tight.  0574M	Lower thread tension is too weak.	Increase the lower thread tension.	P. 18
	Upper thread tension is too strong.	Reduce the upper thread tension. *Adjust the upper thread tension after adjusting the lower thread tension.	P. 19
Poor seam finish on underside of material at the sewing start.	Upper thread trailing length is too long.	Adjust the sub-tension so that the upper thread trailing length after thread trimming is approximately 42 mm.	P. 19
Upper thread trailing length is irregular.	Movable knife is blunt.	Replace the movable knife with a new one.	P. 32
	Fixed knife is blunt.	Sharpen the fixed knife or replace it with a new one.	P. 32
	Sub-tension is too weak.	Adjust the sub-tension.	P. 19
	Thread take-up spring tension is too weak.	Increase the tension of the thread take-up spring.	P. 27

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INSTRUCTION MANUAL

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

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This is the original instructions.

BAS-360H, BAS-365H
I8041253B E
2018.04. B (1)