KE-430D

ELECTRONIC DIRECT DRIVE LOCKSTITCH
BAR TACKER

BE-438D

ELECTRONIC DIRECT DRIVE LOCKSTITCH
BUTTON SEWER

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.
⚠ CAUTION	The instructions which follow this term indicate situations where failure to follow the instructions could cause injury when using the machine or physical damage to equipment and surroundings.

Symbols

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

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

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

2. Notes on safety

DANGER

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

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

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

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

Installation

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

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

The sewing machine weighs approximately 56 kg. The installation should be carried out by two or more people.

Do not connect the power cord until installation is complete, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.

Hold the machine head with both hands when tilting it back or returning it to its original position.
Furthermore, after tilting back the machine head, do not push the face plate side or the pulley side from above, as this could cause the machine head to topple over, which may result in personal injury or damage to the machine.

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

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

Install the safety covers to the machine head and motor.

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

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

CAUTION

Sewing

This sewing machine should only be used by operators who have received the necessary training in safe use beforehand.

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

Be sure to wear protective goggles when using the machine.
If goggles are not worn, there is the danger that if a needle breaks, parts of the broken needle may enter your eyes and injury may result.

Turn off the power switch at the following times, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.

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

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

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

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

If an error occurs in machine operation, or if abnormal noises or smells are noticed, immediately turn off the power switch. Then contact your nearest Brother dealer or a qualified technician.

If the machine develops a problem, contact your nearest Brother dealer or a qualified technician.

Cleaning

Turn off the power switch before carrying out cleaning, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in 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, otherwise inflammation can result.
Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea.
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 from the wall outlet at the following times, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.

- When carrying out inspection, adjustment and maintenance
- When replacing consumable parts such as the rotary hook

If the power switch needs to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.

Hold the machine head with both hands when tilting it back or returning it to its original position.
Furthermore, after tilting back the machine head, do not push the face plate side or the pulley side from above, as this could cause the machine head to topple over, which may result in personal injury or damage to the machine.

Use only the proper replacement parts as specified by Brother.

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.

Any problems in machine operation which result from unauthorized modifications to the machine will not be covered by the warranty.

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 险

触摸高压电部分，会导致受伤。在切断电源5分钟后，再开启盖罩。

⚠DANGER	⚠GEFAHR	⚠DANGER	⚠PELIGRO
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.	Un voltaje inadecuado puede provocar las heridas.Apagar el interruptor principal y esperar 5 minutos antes de abrir esta cubierta.

2

⚠注 意

触摸运动部分,易造成受伤。所以在装上安全保护装置后,再进行缝纫操作。在切断电源后,进行穿线,更换梭芯,机针和做清扫,调整工作。

⚠CAUTION

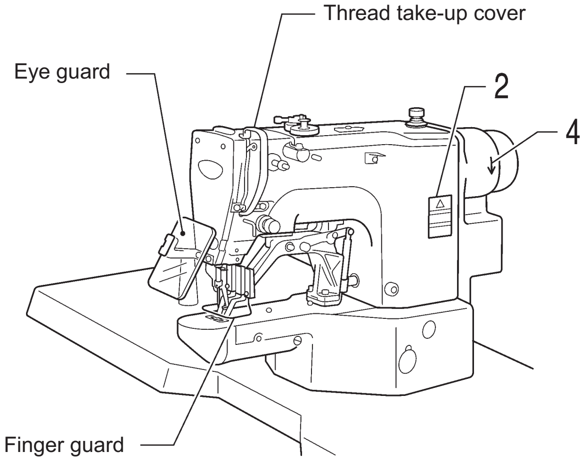
Moving parts may cause injury. Operate with safety devices. Turn off main switch before threading, changing bobbin and needle, cleaning etc.

Safety devices

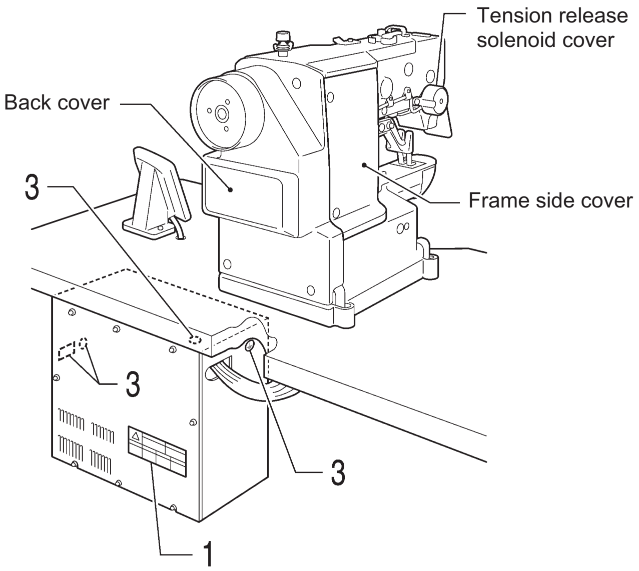
- Eye guard
- Finger guard
- Tension release solenoid cover
- Thread take-up cover
- Frame side cover
- Back cover, etc.

3 PE ⏚ 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.

4 ⇩ Direction of operation



4399Q



4467Q

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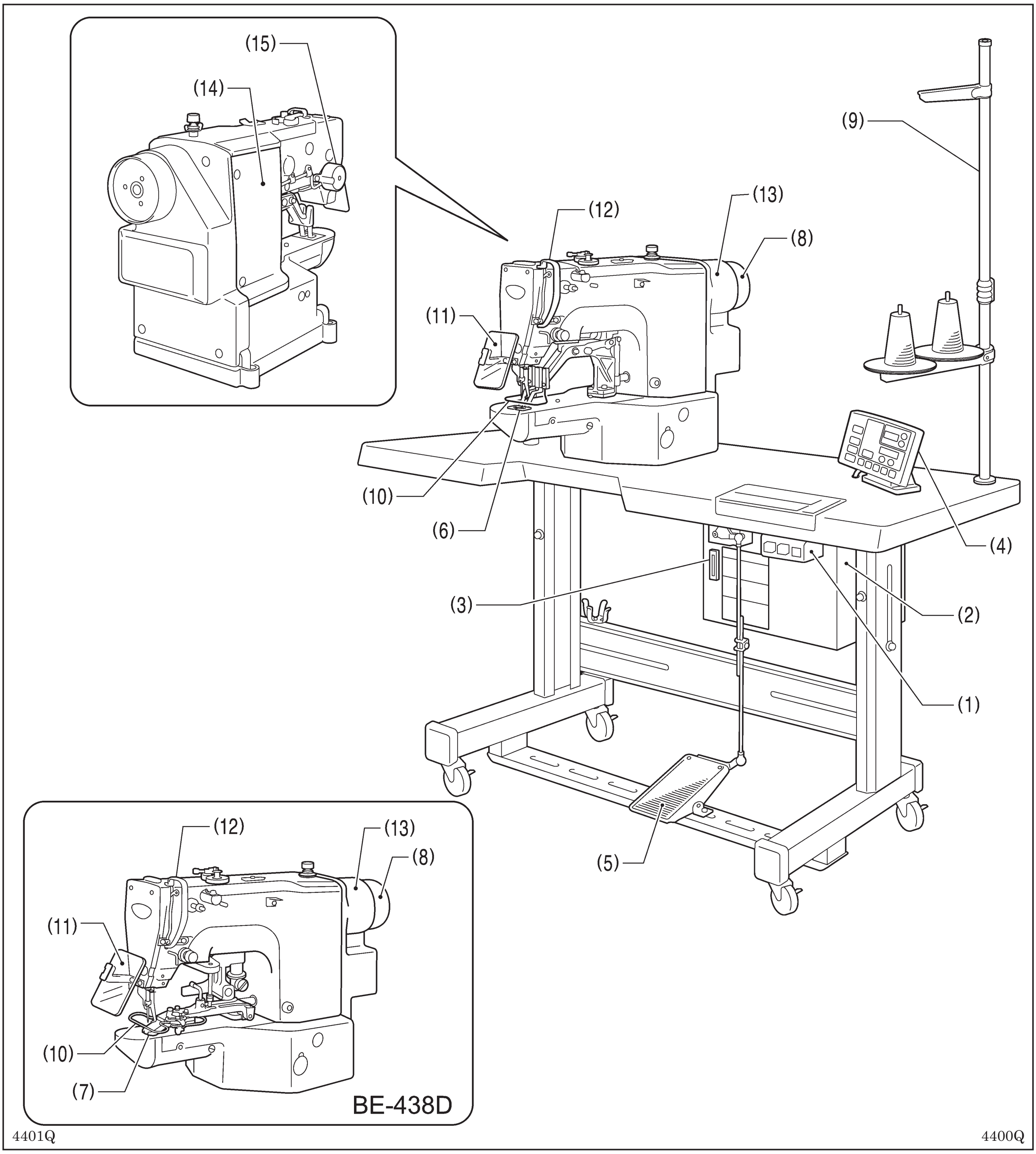
1. NAMES OF MAJOR PARTS


(15)
(14)
(9)
(13)
(12)
(8)
(11)
(10)
(6)
(4)
(3)
(2)
(1)
(5)
(12)
(13)
(8)
(11)
(10)
(7)
BE-438D
4401Q
4400Q

(1) Power switch
(2) Control box
(3) CF slot
(4) Operation panel
(5) Foot switch
(6) Work clamp (KE-430D)
(7) Button clamp (BE-438D)
(8) Pulley
(9) Cotton stand

Safety devices
(10) Finger guard
(11) Eye guard
(12) Thread take-up cover
(13) Back cover
(14) Frame side cover
(15) Tension release solenoid cover

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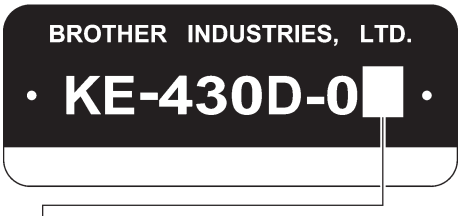
2. SPECIFICATIONS

2-1. Machine specifications



BROTHER INDUSTRIES, LTD.
BE-438D

1	Ordinary materials
2	Denim
7	Knitted materials
F	Foundation garments

	KE-430D Electronic direct drive lockstitch bar tacker	BE-438D Electronic direct drive lockstitch button sewer
Stitch formation	Single needle lock stitch	
Maximum sewing speed	3,200 rpm	2,700 rpm
Pattern size (X x Y)	40 x 30 mm max.	6.4 x 6.4 mm max.
Dimensions of buttons that can be sewn		Outer diameter of button 8 - 30 mm (*1)
Feed mechanism	Y-θ intermittent feed mechanism (pulse-motor driven mechanism)	
Stitch length	0.05 - 12.7 mm	
Number of stitches	Variable (Refer to "Program List" for details on the number of stitches for sewing patterns that are already preset.)	
Maximum stitch number	210,000 stitches (including 200,000 stitches which can be added)	
Work clamp lifter	Pulse-motor driven mechanism	
Work clamp height Button clamp height	17 mm max.	13 mm max.
Rotary hook	Shuttle hook (shuttle hook 2, optional)	Shuttle hook
Wiper device	Standard equipment	
Thread trimmer device	Standard equipment	
Thread nipper device	Standard equipment	
Data storage method	Flash memory (Any sewing pattern can be added using CF card) (*2)	
Number of user programs	50	
Number of cycle programs	9	
Number of stored data	89 sewing patterns are set already	53 sewing patterns are set already
	(Up to 200 patterns can be added. Total number of stitches of stored data which can be added is within 200,000.)	
Motor	AC servo motor 550 W	
Weights	Machine head: approx. 56 kg, Operation panel: approx. 0.6 kg Control box: 14.2 – 16.2 kg (depending on destination)	
Power source	Single-phase 100V / 220V, 3-phase 200V / 220V / 380V / 400V 400VA	

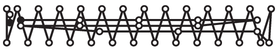
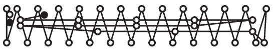
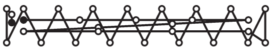
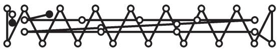
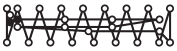
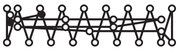
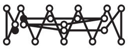
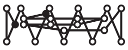
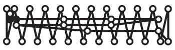
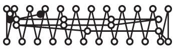
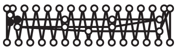
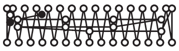
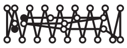
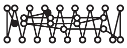
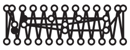
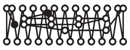
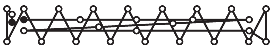
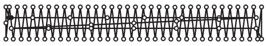
*1 Use the optional button clamp B (S03634-101) for diameters of 20 mm or greater.

*2 The recommended CF cards are commercially-available ones from SanDisk or HAGIWARA SYS-COM.

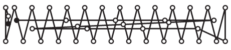
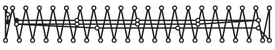
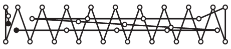
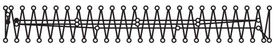
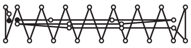
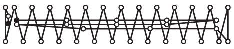
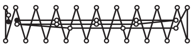
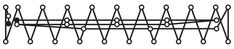
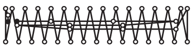
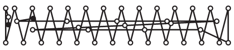
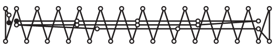
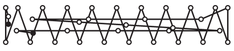
2-2. Program list (KE-430D)

The programs shown below have been preset into the sewing machine and can be selected according to specifications. (Any program is available as long as the sewing pattern is within the work clamp and feed plate in size.)
Use the work clamp and feed plate that match the respective sewing pattern selected.
The sewing size is the length when the enlargement/reduction ratio is 100%.

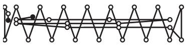
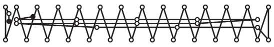
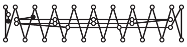
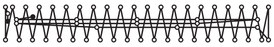
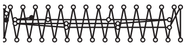
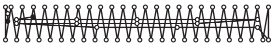
For ordinary materials (-01)

No.	Sewing pattern	No. of stitches	Tacking size (mm)		No.	Sewing pattern	No. of stitches	Tacking size (mm)	
			Length	Width				Length	Width
1		42	16	2	65		43	16	2
4		31	16	2	66		32	16	2
5		29	10	2	67		30	10	2
8		21	7	2	68		22	7	2
13		35	10	2	69		36	10	2
15		42	10	2	70		43	10	2
20		28	7	2	71		29	7	2
21		35	7	2	72		36	7	2
64		30	16	2	89		90	24	3

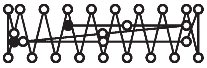
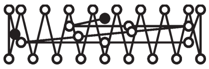
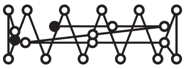
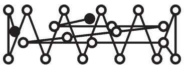
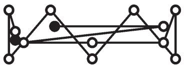
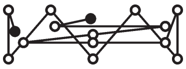
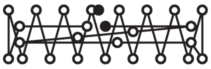
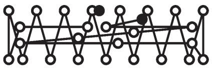
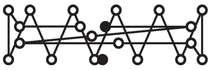
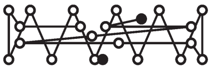
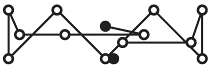
For denim (-02)

No.	Sewing pattern	No. of stitches	Tacking size (mm)		No.	Sewing pattern	No. of stitches	Tacking size (mm)	
			Length	Width				Length	Width
2		42	20	3	18		56	24	3
3		35	20	3	19		64	24	3
6		30	16	3	62		42	20	3
14		35	16	3	63		35	20	3
16		43	16	3	78		43	20	3
17		42	24	3	79		36	20	3

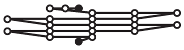
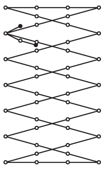
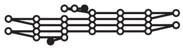
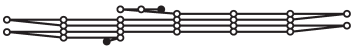
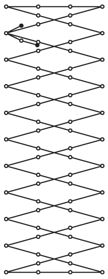
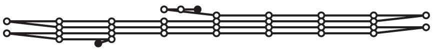
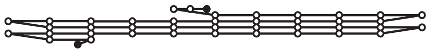
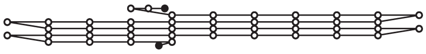
For denim (-02)

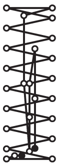
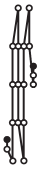
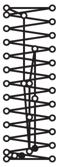
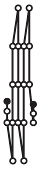
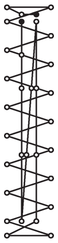
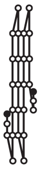
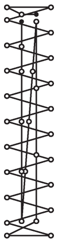
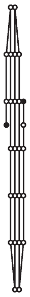
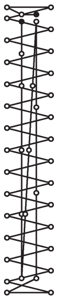
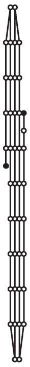
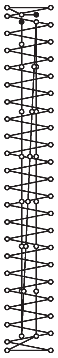
No.	Sewing pattern	No. of stitches	Tacking size (mm)		No.	Sewing pattern	No. of stitches	Tacking size (mm)	
			Length	Width				Length	Width
80		31	16	3	83		43	24	3
81		36	16	3	84		57	24	3
82		44	16	3	85		65	24	3

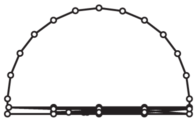
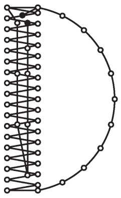
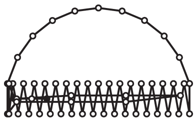
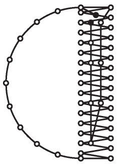
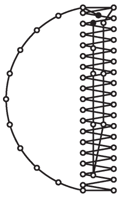
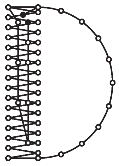
For Knitted materials (-07) and foundation garments (-0F)

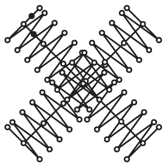
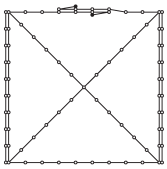
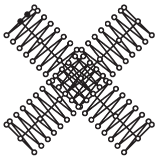
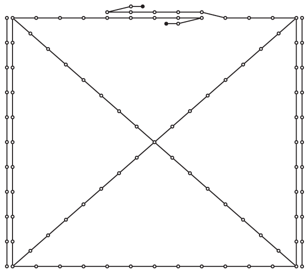
No.	Sewing pattern	No. of stitches	Tacking size (mm)		No.	Sewing pattern	No. of stitches	Tacking size (mm)	
			Length	Width				Length	Width
7		28	8	2	73		29	8	2
9		21	7	2	74		22	7	2
22		14	7	2	75		15	7	2
31*		28	8	2	76*		29	8	2
32*		22	8	2	77*		23	8	2
33*		15	8	2					

* The sewing start and sewing end are in the middle of the pattern.

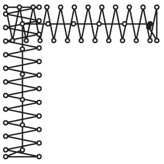
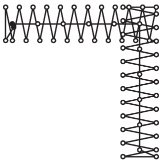
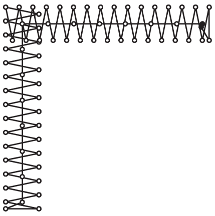
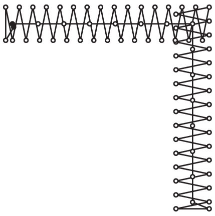
Straight bar tacking					Vertical zigzag stitching				
No.	Sewing pattern	No. of stitches	Tacking size (mm)		No.	Sewing pattern	No. of stitches	Tacking size (mm)	
			Length	Width				Length	Width
10		21	10	0.3	44		46	9	15
11		28	10	0.3					
12		28	20	0.3	45		70	9	25
23		35	25	0.3					
24		42	25	0.3					
25		45	25	0.3					

Vertical bar tacking					Vertical straight bar tacking				
No.	Sewing pattern	No. of stitches	Tacking size (mm)		No.	Sewing pattern	No. of stitches	Tacking size (mm)	
			Length	Width				Length	Width
26		28	3	10	28		19	0.3	10
27		35	3	10	29		21	0.3	10
40		32	3	16	30		28	0.3	10
41		36	3	16	46		27	0.3	20
42		44	3	20	47		44	0.3	25
43		68	3	24					

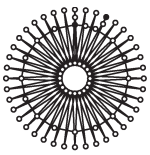
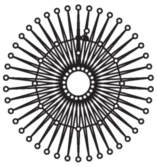
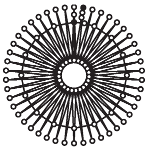
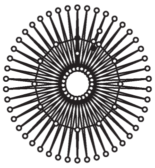
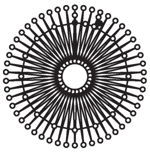
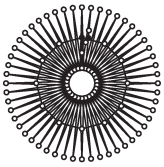
Crescent bar tacking									
No.	Sewing pattern	No. of stitches	Tacking size (mm)		No.	Sewing pattern	No. of stitches	Tacking size (mm)	
			Length	Width				Length	Width
34		35	12	7	37		57	7	12
35		58	12	7	38		53	7	10
36		57	7	12	39		53	7	10

Crossed stitching					Crossed tacking				
No.	Sewing pattern	No. of stitches	Tacking size (mm)		No.	Sewing pattern	No. of stitches	Tacking size (mm)	
			Length	Width				Length	Width
48		70	10	10	50		84	16	16
49		93	9.6	9.6	51		105	30	26

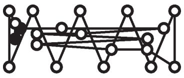
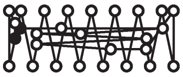
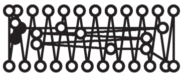
L-pattern tacking

No.	Sewing pattern	No. of stitches	Tacking size (mm)		No.	Sewing pattern	No. of stitches	Tacking size (mm)	
			Length	Width				Length	Width
52		60	11.3	11.2	53		60	11.3	11.2
54		78	15.3	15.2	55		78	15.3	15.2

Circular stitching

No.	Sewing pattern	No. of stitches	Tacking size (mm)		No.	Sewing pattern	No. of stitches	Tacking size (mm)	
			Length	Width				Length	Width
56		106	9	9	59		104	10	10
57		116	9	9	60		114	10	10
58		127	9	9	61		124	10	10

For eyelet buttonhole

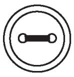
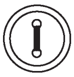
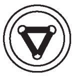
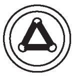
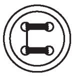
No.	Sewing pattern	No. of stitches	Tacking size (mm)	
			Length	Width
86		21	6	2
87		28	6	2
88		35	6	2

If you want to sew a pattern other than standard patterns, you can create your original pattern using the PS-3000. Consult with your local Brother sales Office for details.

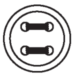
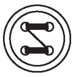
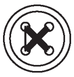
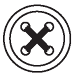
Note when creating additional data (program nos. 200 - 999)
When sewing data with a small number of stitches (15 stitches or less) is sewn repeatedly (short cycle operation), the upper shaft motor may overheat and the “E150” error code may be generated.

2-3. Program list (BE-438D)

The programs shown below have been preset into the sewing machine. Any program is available as long as the needle drops down in the hole of the button.
When sewing programs that do not have crossover stitches, the thread is trimmed after sewing of one side is completed, and then the other side is sewn.

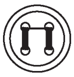
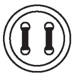
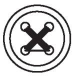
No.	No. of button holes	Sewing pattern	No. of threads	No. of crossover stitches	No. of stitches	Sewing size (mm)	
						X	Y
1	2		6	—	12	3.4	0
2			8	—	14		
3			10	—	16		
4			12	—	18		
5 *1			16	—	22		
6 *1			20	—	26		
7 *2			6	—	12	0	3.4
23 *2			10	—	16		
8 *2			12	—	18		
9 *2	3		5-5-5	—	21	2.6	2.4
24 *2			7-7-7	—	27		
25 *2			5-5-5	—	21		
26 *2			7-7-7	—	27		
10	4		6-6	1	19	3.4	3.4
11			8-8	1	23		
12			8-8	3	25		
13			10-10	1	27		
27			12-12	1	31		

*1 Check that the button hole diameter is 2 mm or greater before using the programs.
*2 Do not use the button lifter spring.

No.	No. of button holes	Sewing pattern	No. of threads	No. of crossover stitches	No. of stitches	Sewing size (mm)	
						X	Y
14 *3	4		6-6	0	24	3.4	3.4
36 *4			6-6	0	24		
28 *3			8-8	0	28		
37 *4			8-8	0	28		
15 *3			10-10	0	32		
38 *4			10-10	0	32		
29 *3			12-12	0	36		
39 *4			12-12	0	36		
16			6-5	1	18		
17			8-7	1	22		
30			10-9	1	26		
18			6-6	1	19		
19			8-8	1	23		
31			10-10	1	27		
45			12-12	1	31		
20 *3			6-6	0	24		
40 *4			6-6	0	24		
32 *3			8-8	0	28		
41 *4			8-8	0	28		
33 *3			10-10	0	32		
42 *4			10-10	0	32		

*3 When sewing of one side is completed, the button clamp rises and the thread is trimmed. To finish sewing, press the foot switch until sewing of the other side starts, or press the foot switch again after sewing of the other side is completed.

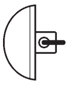
*4 When sewing of one side is completed, the thread will be trimmed without the button clamp rising, and then the other side will be sewn.

No.	No. of button holes	Sewing pattern	No. of threads	No. of crossover stitches	No. of stitches	Sewing size (mm)	
						X	Y
21 *2	4		6-6	1	19	2.4	3.4
34 *2			10-10	1	27		
22 *2 *3			6-6	0	24		
43 *2 *4			6-6	0	24		
35 *2 *3			10-10	0	32		
44 *2 *4			10-10	0	32		
46			6-6	1	19	3.4	3.4
47			8-8	1	23		
48			10-10	1	27		
49			12-12	1	31		

*2 Do not use the button lifter spring.

*3 When sewing of one side is completed, the button clamp rises and the thread is trimmed. To finish sewing, press the foot switch until sewing of the other side starts, or press the foot switch again after sewing of the other side is completed.

*4 When sewing of one side is completed, the thread will be trimmed without the button clamp rising, and then the other side will be sewn.

For shank button					
No.	Sewing pattern	No. of threads	No. of stitches	Sewing size (mm)	
				X	Y
50		6	12	3.4	0
51		8	14		
52		10	16		
53		12	18		

Note when creating additional data (program nos. 200 - 999)
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.

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.

The sewing machine head weighs approximately 56 kg. The installation should be carried out by two or more people.

Do not connect the power cord until installation is complete, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.

Hold the machine head with both hands when tilting it back or returning it to its original position. Furthermore, after tilting back the machine head, do not push the face plate side or the pulley side from above, as this could cause the machine head to topple over, which may result in personal injury or damage to the machine.

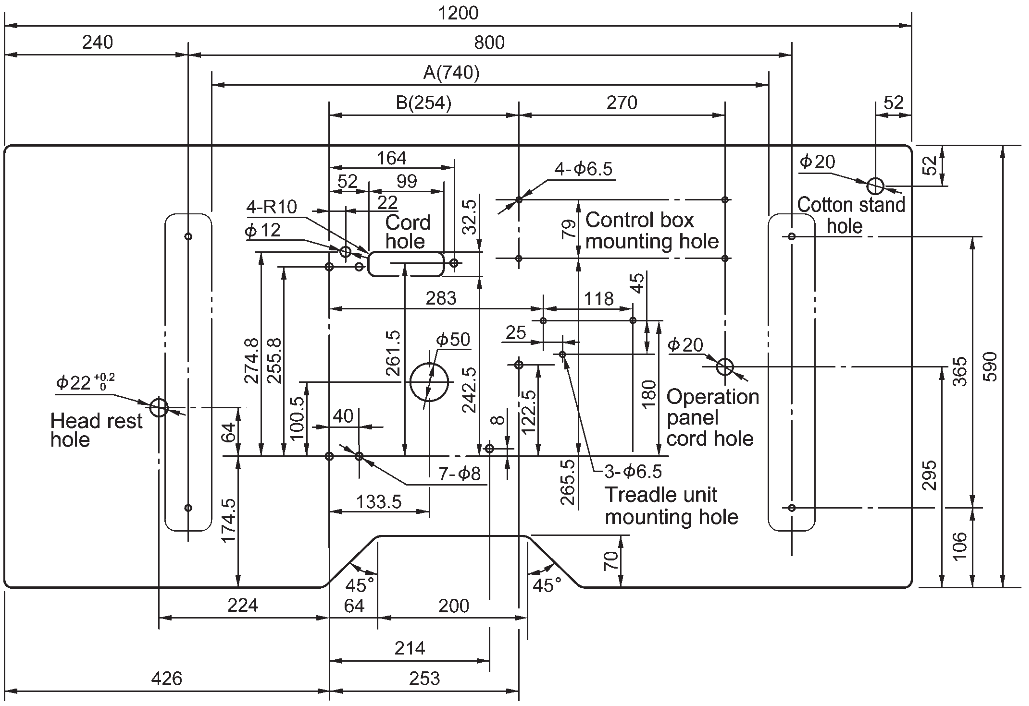
All cords should be secured at least 25 mm away from any moving parts. Furthermore, do not excessively bend the cable or secure it too firmly staples, otherwise there is the danger that fire or electric shocks could occur.

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

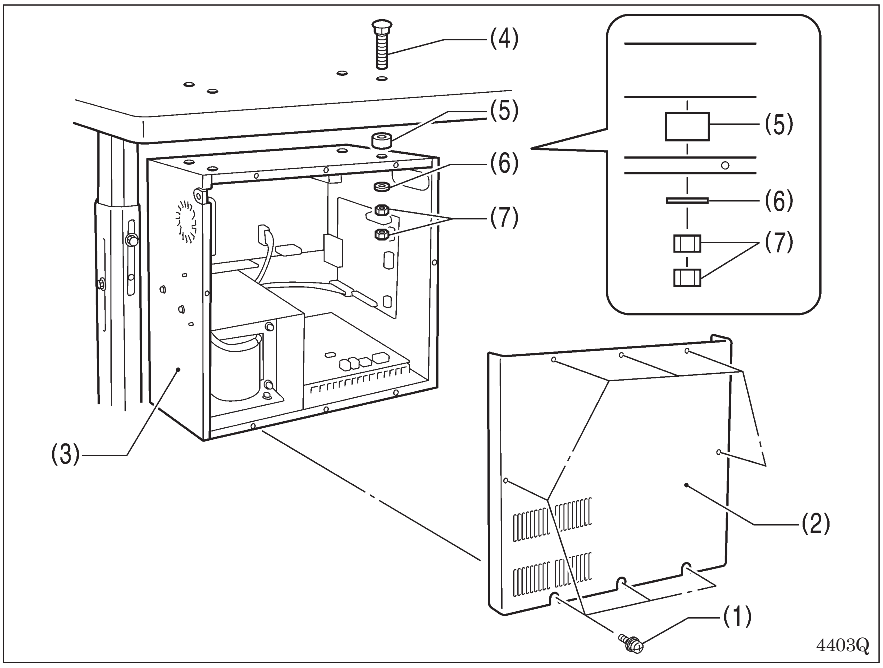
Install the safety covers to the machine head and motor.

3-1. Table processing diagram

- The thickness of the table should be at least 40 mm, and it should be strong enough to bear the weight and vibration of the sewing machine.
- If the distance A between the insides of the legs is less than 740 mm, move the control box installation position to the left (B = 254 mm).
- Check that the control box is at least 10 mm away from the leg. If the control box and the leg are too close together, it may result in incorrect sewing machine operation.


1200
240
800
A(740)
B(254)
270
52
164
52
99
22
4-R10
ϕ12
Cord hole
32.5
4-ϕ6.5
79
Control box mounting hole
ϕ20
Cotton stand hole
52
283
118
45
25
ϕ50
ϕ20
Operation panel cord hole
180
274.8
255.8
261.5
242.5
100.5
122.5
8
40
64
ϕ22 +0.2 0
Head rest hole
7-ϕ8
3-ϕ6.5
Treadle unit mounting hole
265.5
133.5
174.5
365
590
295
106
70
45°
45°
224
64
200
214
426
253
3625M

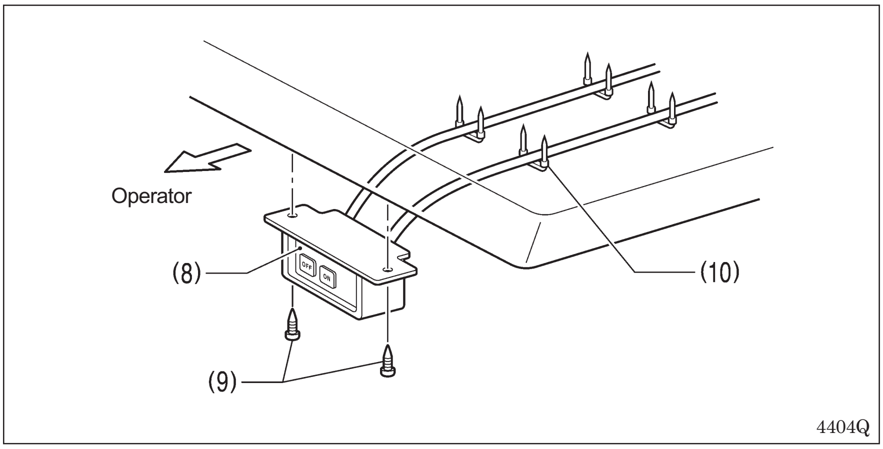
3-2. Installing the control box


(1)
(2)
(3)
(4)
(5)
(6)
(7)
4403Q

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

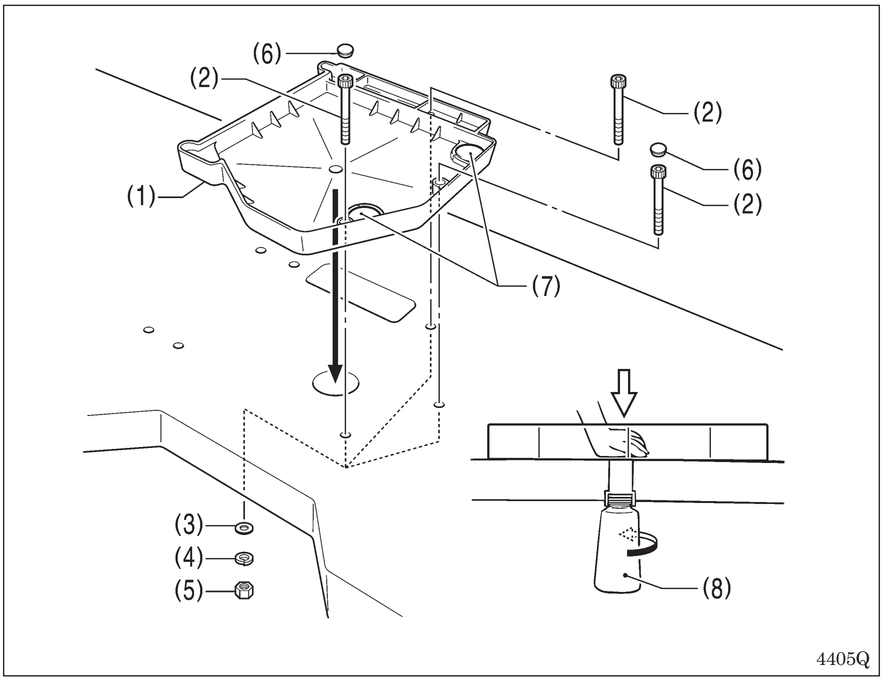
(3) Control box
(4) Bolts [4 pcs]
(5) Spacers [4 pcs]
(6) Plain washers [4 pcs]
(7) Nuts [8 pcs]

* The recommended tightening torque for the nuts (7) is 4.0±0.1N・m.


Operator
(8)
(9)
(10)
4404Q

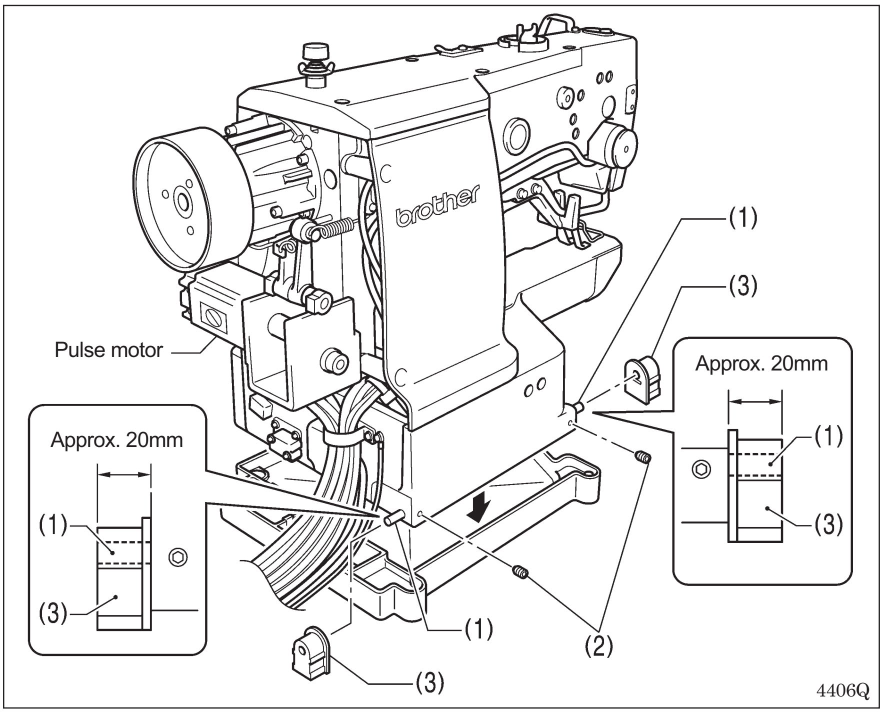
(8) Power switch
(9) Wood screws [2 pcs]
(10) Staples [4 pcs]

3-3. Installing the oil pan


(1)
(2)
(3)
(4)
(5)
(6)
(7)
(8)
4405Q

(1) Oil pan
(2) Bolts [3 pcs]
(3) Plain washers [3 pcs]
(4) Spring washers [3 pcs]
(5) Nuts [3 pcs]
(6) Rubber caps [2 pcs]
(7) Rubber cushion [2 pcs]
(8) Oiler

3-4. Installing the machine head

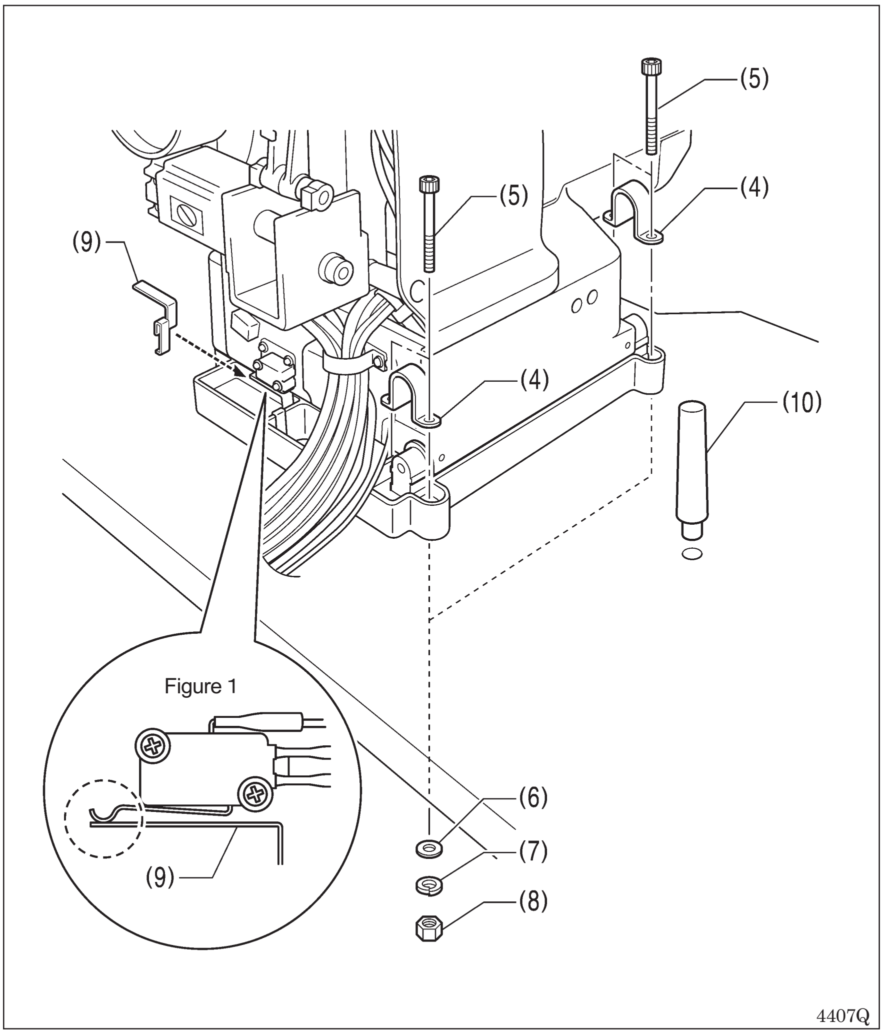

Pulse motor
Approx. 20mm
(1)
(3)
Approx. 20mm
(1)
(3)
(1)
(2)
(3)
4406Q

(1) Pins [2 pcs]
(2) Set screws [2 pcs]
(3) Rubber cushion assembly [2 pcs]

Place the machine head gently on top of the oil pan and the rubber cushions.

Note:

- Be careful not to clamp any cords between the machine head and the oil pan.
- When holding the machine head, do not hold it by the pulse motor, otherwise it may damage the pulse motor.

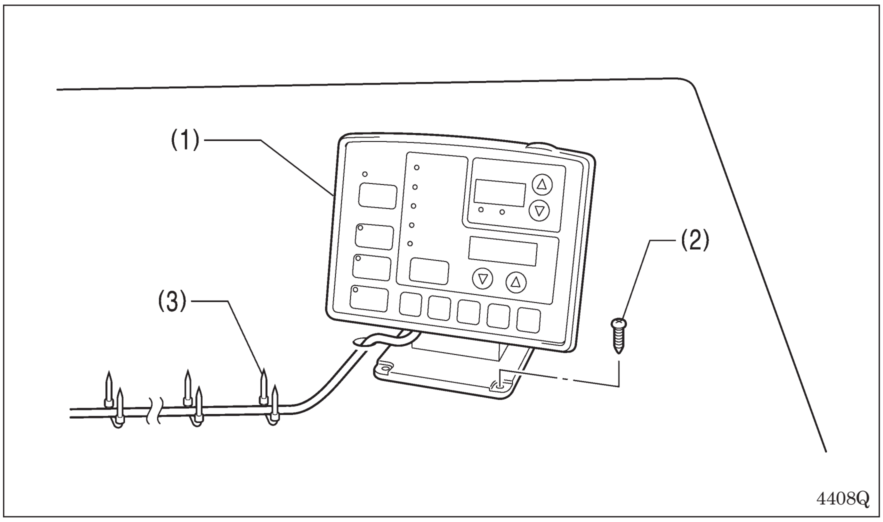

(5)
(5)
(4)
(9)
(4)
(10)
Figure 1
(9)
(6)
(7)
(8)
4407Q

(4) Hinge holders [2 pcs]
(5) Bolts [4 pcs]
(6) Plain washers [4 pcs]
(7) Spring washers [4 pcs]
(8) Nuts [4 pcs]
(9) Head spring
(10) Head rest

Note:

- Check that the machine head switch is turned on as shown in Figure 1.
- Tap the head rest (10) securely into the table hole.

3-5. Installing the operation panel

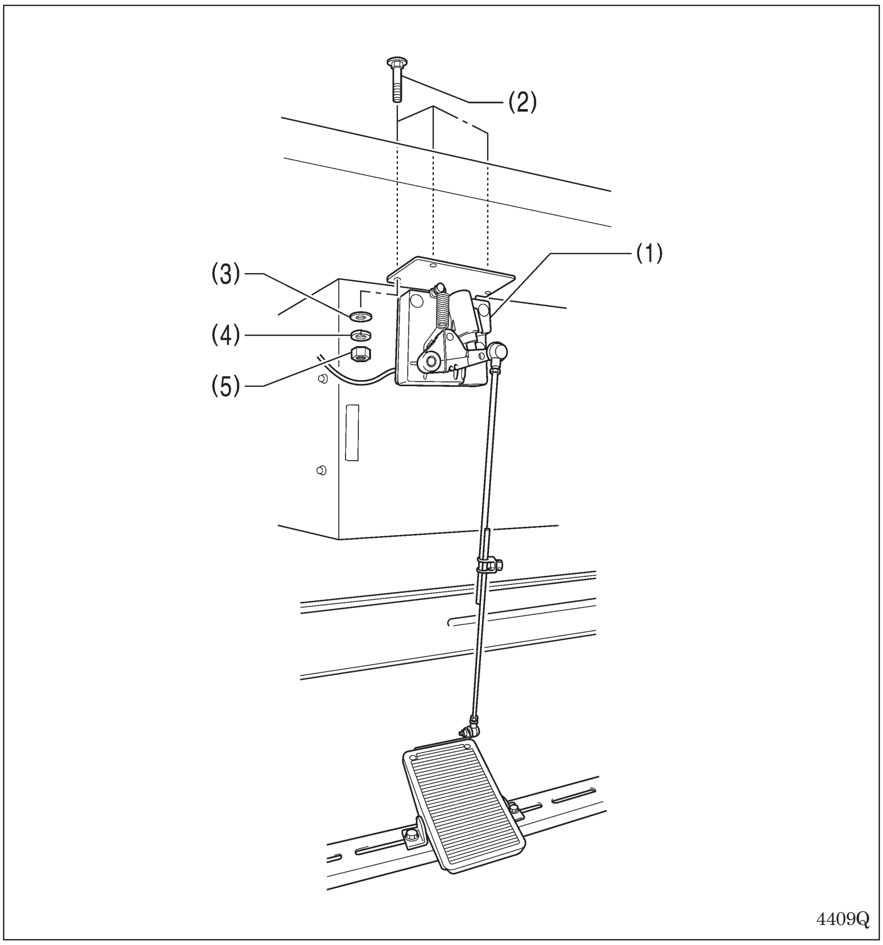


(1) Operation panel
(2) Wood screws [4 pcs]

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

(3) Staples [3 pcs]

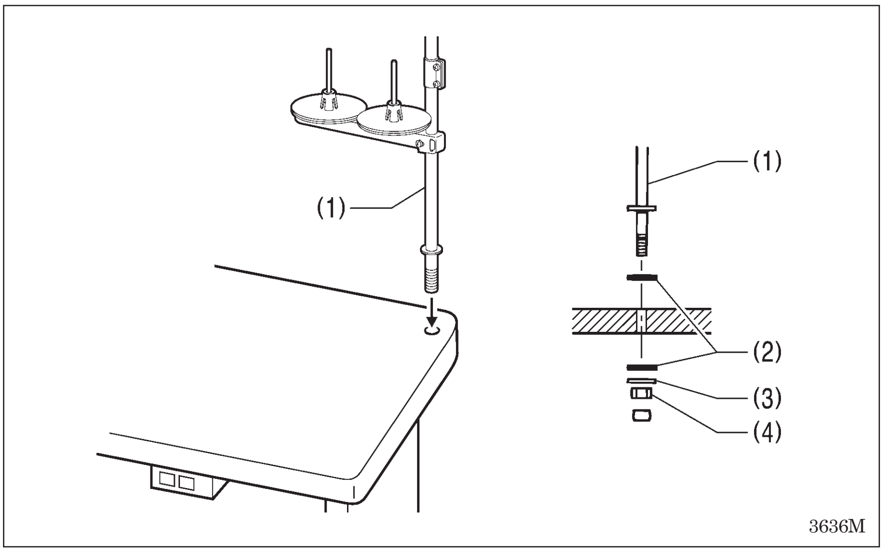
3-6. Installing the treadle unit



(1) Treadle unit
(2) Bolts [3 pcs]
(3) Plain washers [3 pcs]
(4) Spring washers [3 pcs]
(5) Nuts [3 pcs]

* Use a commercially-available foot switch and connecting rod.

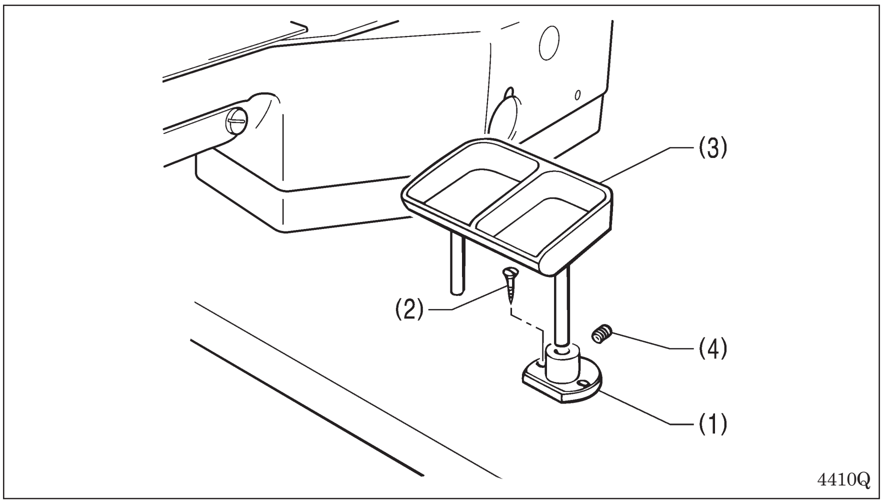
3-7. Installing the cotton stand



(1) Cotton stand

Note:
Securely tighten the nut (4) so that the two rubber cushions (2) and the washer (3) are securely clamped and so that the cotton stand (1) does not move.

3-8. Installing the button tray (BE-438D)



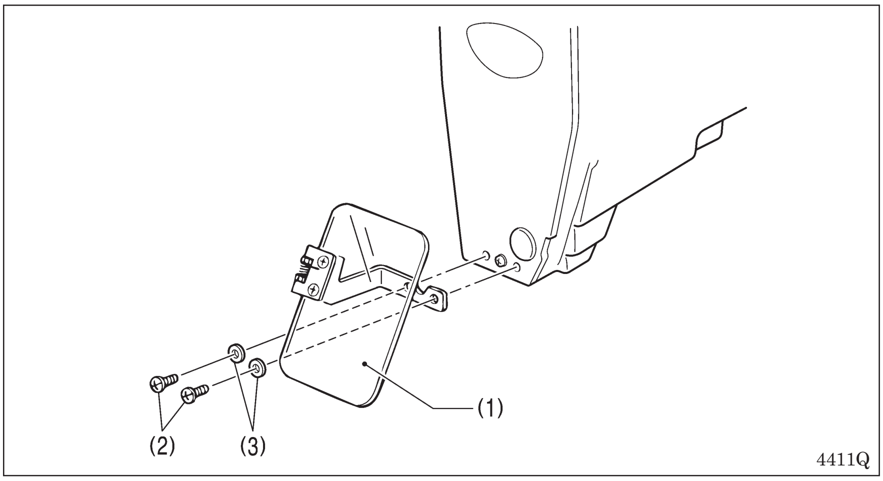
Install the button tray at a place convenient for operation.

(1) Button tray holder
(2) Wood screws [2 pcs]
(3) Button tray
(4) Set screw

3-9. Installing the eye guard

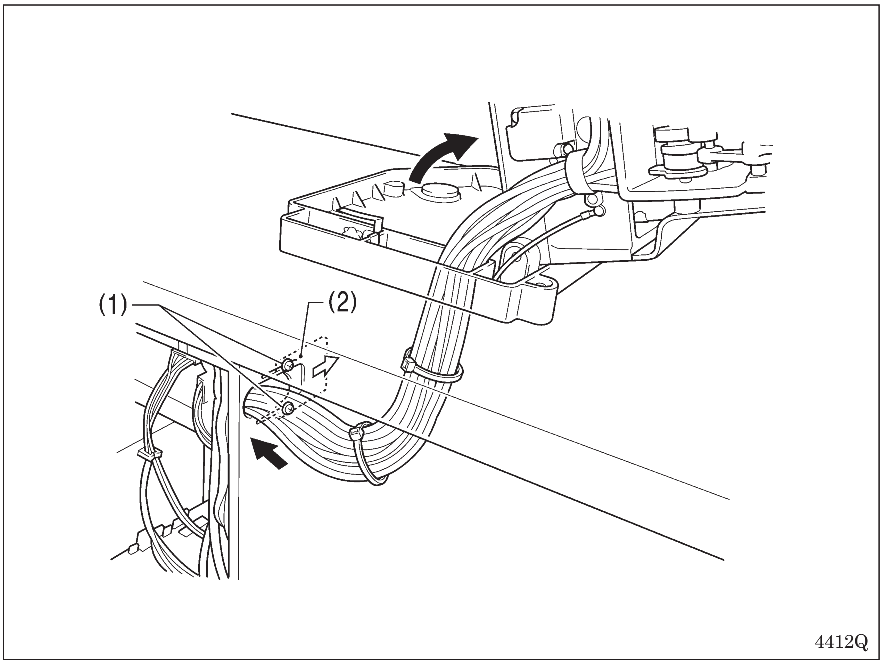
⚠ CAUTION

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



(1) Eye guard assembly
(2) Screws [2 pcs]
(3) Plain washers [2 pcs]

3-10. Connecting the cords

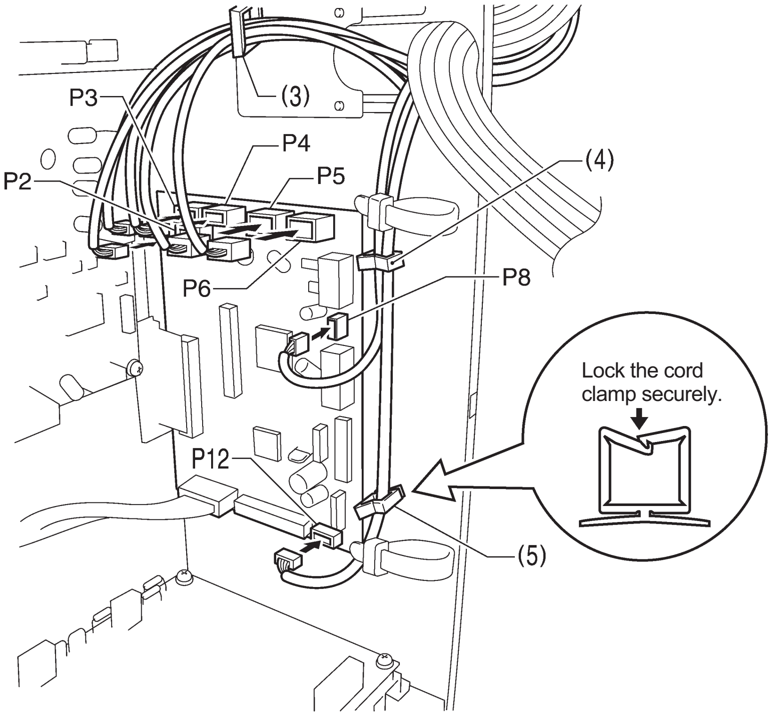


1. Gently tilt back the machine head.
2. Pass the cord bundle through the hole in the work table.
3. Loosen the two screws (1), and then open the cord presser plate (2) in the direction of the white arrow and pass the cord bundle through the opening.
4. Securely connect the connectors as indicated in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

Note:

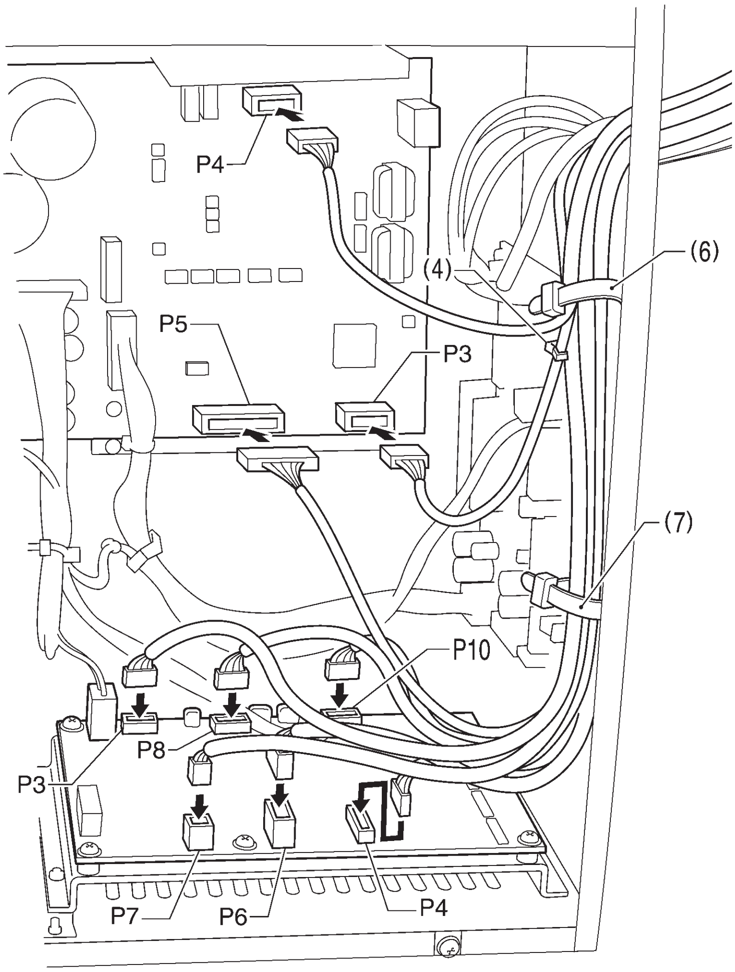
- Check that the connector is facing the correct way, and then insert it firmly until it locks into place.
- Secure the cables with cable ties and cord clamps, while being careful not to pull on the connector.

< Main P. C. board >

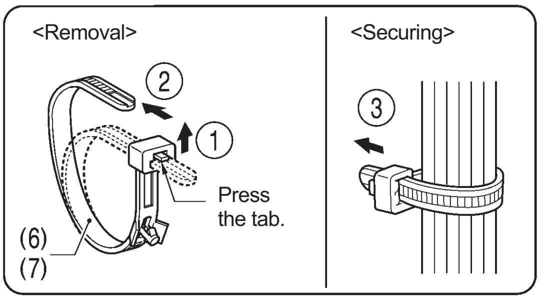


Connectors	Connection location on main P. C. board	Cord clamps
X pulse motor encoder [5-pin] White	P2 (X-ENC)	(3)
Y pulse motor encoder [5-pin] Blue	P3 (Y-ENC)	(3)
Work clamp encoder [5-pin] Black	P4 (P-ENC)	(3)
Foot switch [10-pin]	P5 (FOOT)	(3)
Operation panel [8-pin]	P6 (PANEL)	(3)
Machine head switch [3-pin]	P8 (HEAD-SW)	(4)
Thread clamp sensor [6-pin]	P12 (TPK-SEN)	(4), (5)

4413Q



< Power supply motor P. C. board >



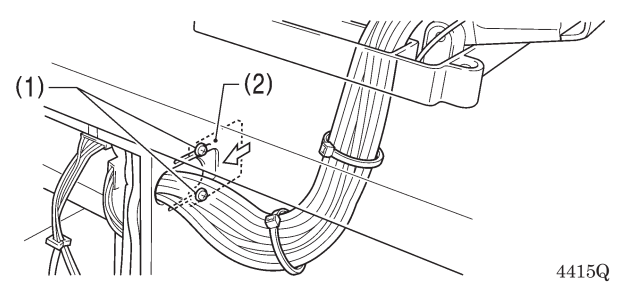
< PMD P. C. board >
The layout for the connector may differ from that shown in the illustration depending on the version of the PMD P. C. board.
Connect to connectors with the same color (e.g. black to black).

Connectors	Connection location on power supply motor P. C. board	Cord clamps / Cable ties
Machine head memory [7-pin]	P3 (HEAD-M)	(4)
Upper shaft motor [3-pin]	P4 (UVW)	(6)
Synchronizer [14-pin]	P5 (SYNC)	(6), (7)

Connectors	Connection location on PMD P. C. board	Cable ties
Work clamp pulse motor [4-pin] Black	P3 (PPM)	(6), (7)
Thread clamp pulse motor [6-pin]	P4 (BT-PICK)	(6), (7)
Thread trimmer solenoid [6-pin]	P6 (SOL1)	(6), (7)
Tension release solenoid [4-pin]	P7 (SOL2)	(6), (7)
Y pulse motor [4-pin] Blue	P8 (YPM)	(6), (7)
X pulse motor [4-pin] White	P10 (XPM)	(6), (7)

Note: Route the X, Y and work clamp pulse motor harnesses so that they do not touch the PMD P.C. board.

4113M



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

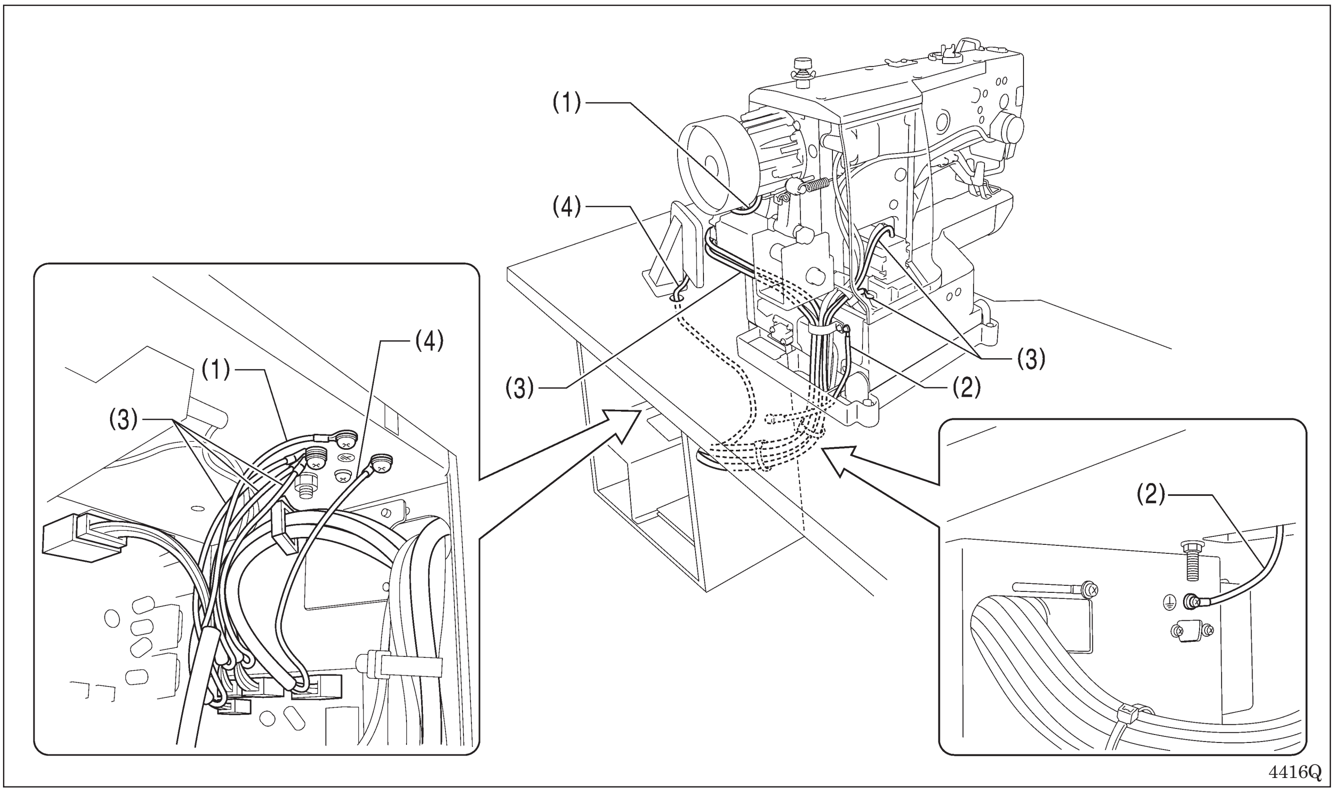
   Note: Close the cord presser plate (2) securely so that no foreign objects, insects or small animals can get inside the control box.

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

3-11. Connecting the ground wire

CAUTION

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



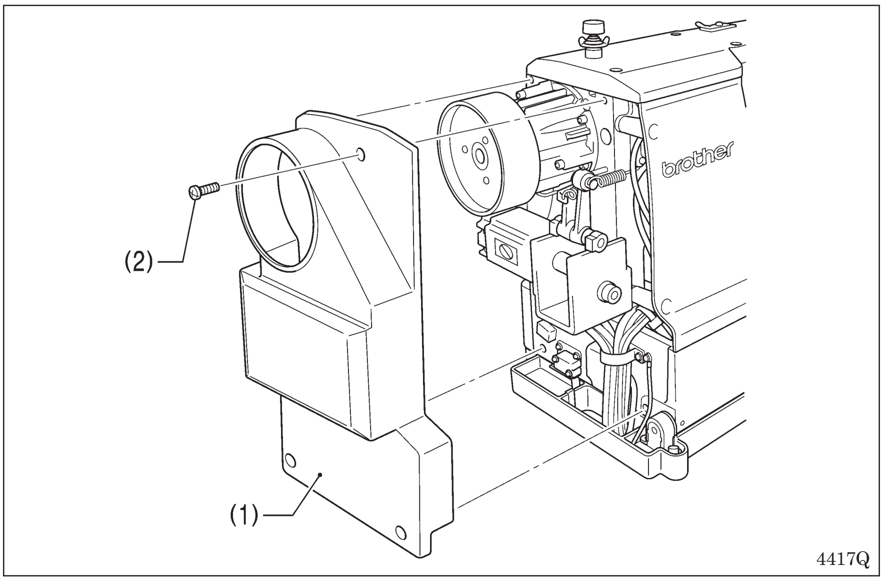
(1) Ground wire from upper shaft motor harness
(2) Ground wire from the machine head
(3) Ground wires from X, Y and work clamp encoder harnesses (3 wires)
(4) Ground wire from operation panel harness

* The recommended tightening torque for the ground screws is 1.0±0.1 N･m.

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

(5) Tighten the control box cover with the eight screws. Check that the cords are not clamped by the cover at this time.

3-12. Installing the back cover



(1) Back cover
(2) Screws [4 pcs]

Note:
Be careful not to clamp the cords when installing the back cover (1).

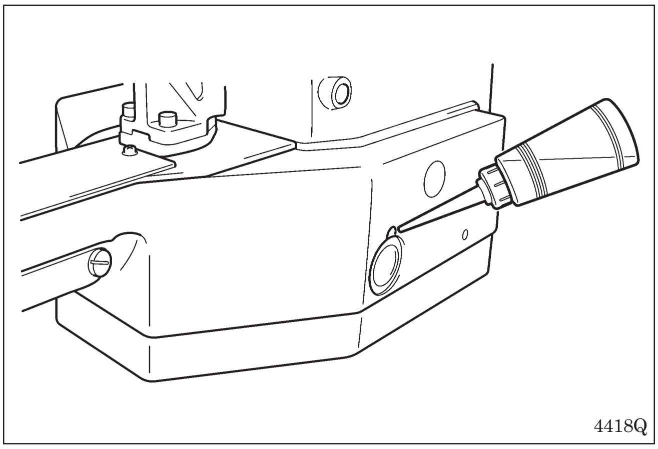
3-13. Lubrication

⚠ CAUTION

Do not connect the power cord until lubrication has been completed, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.

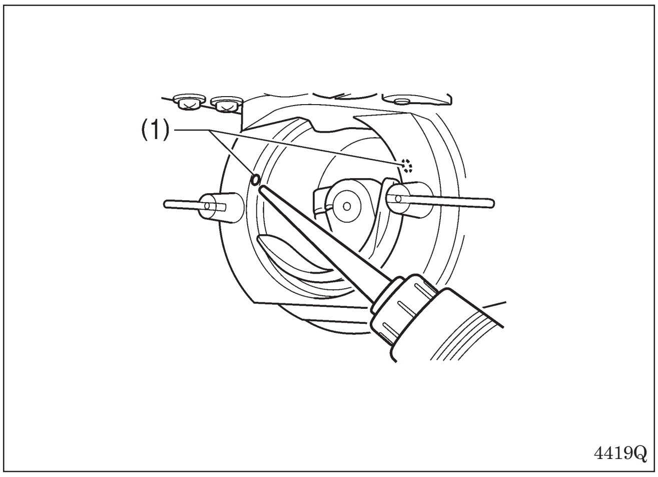
Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result.
Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea.
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 <NIPPON OIL CORPORATION Sewing Lube 10N; VG10> specified by Brother.
* If this type of lubricating oil is difficult to obtain, the recommended oil to use is <Exxon Mobil Essotex SM10; VG10>.



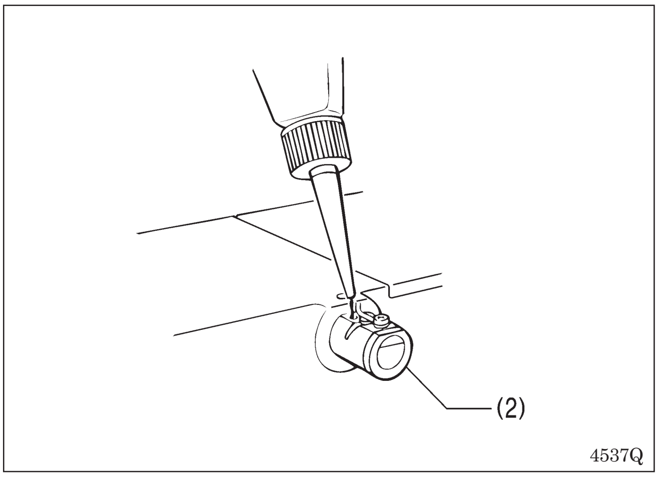
1. Fill the oil tank with oil.

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



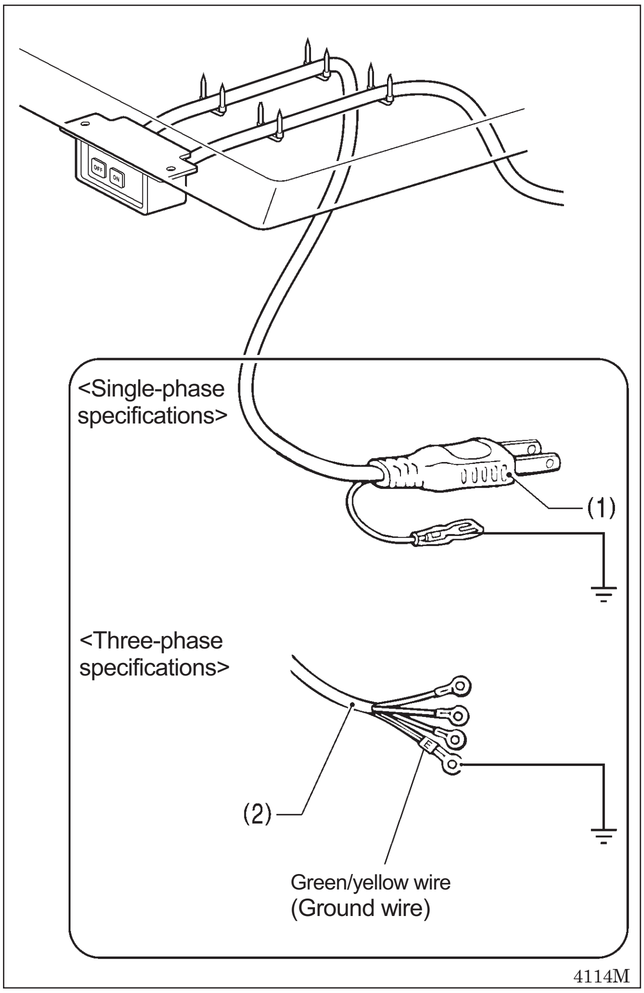
2. Pour oil in through the two holes (1) of the shuttle race base assembly so that the felt is lightly moistened.

Note:
If there is no more oil on the felt of the shuttle race base assembly, problems with sewing may result.



3. If using the liquid cooling tank (2), fill it with silicon oil (100 mm^2/s).

3-14. Connecting the power cord



<For single-phase specifications>
Insert the power cord plug (1) into a wall outlet.

<For three-phase specifications>

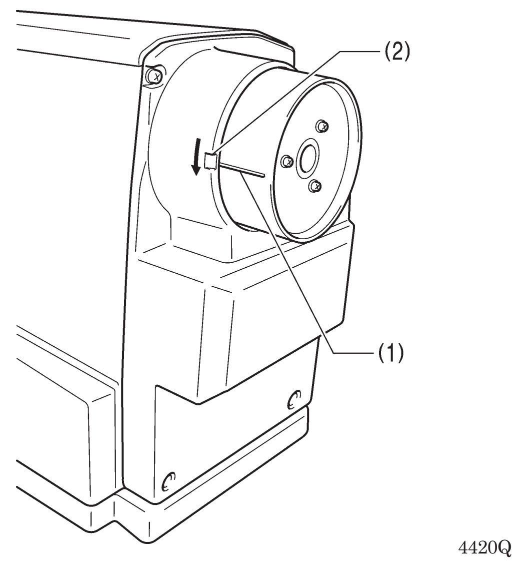
1. Attach an appropriate plug to the power cord (2). (The green and yellow wire is the ground wire.)
2. Insert the power plug into a properly-grounded AC power supply.

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

NOTE:

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

3-15. Starting up



4420Q

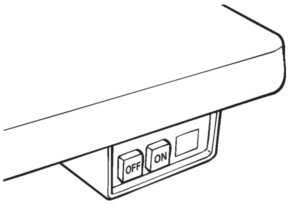
Before starting home position detection, check that the needle bar is at its highest position.

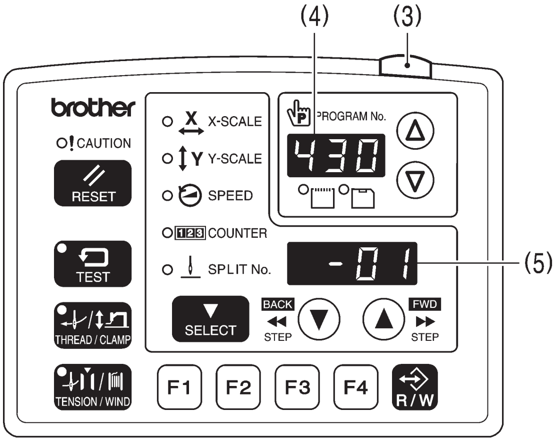
Turn the machine pulley so that the index mark (1) on the pulley is inside the mark (2) on the back cover.

Note:

If the machine is started while the index mark (1) is not inside the mark (2), error code "E110" will be displayed. (At this time, the error will be cleared if you turn the machine pulley to set the needle to the needle up stop position.)

4421Q



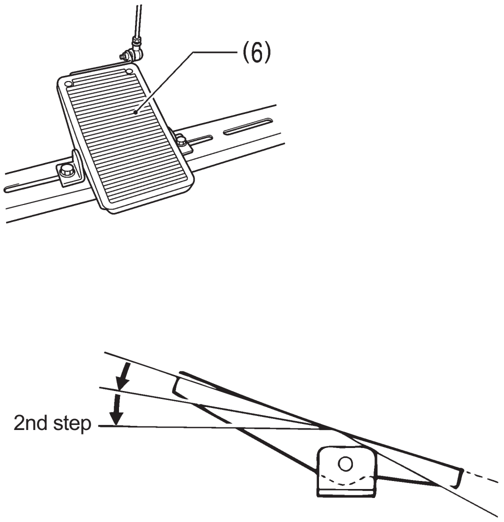

(4)
(3)
brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X X-SCALE
Y Y-SCALE
SPEED
123 COUNTER
SPLIT No.
PROGRAM No.
P
430
-01
(5)
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R / W

4422Q

1. Turn on the power switch.
   The POWER indicator (3) will illuminate, and the model name will appear in the program No. display (4) and the specifications will appear in the menu display (5).

Specifications	
Ordinary materials	[- 01]
Denim	[- 02]
Knitted materials	[- 07]
Foundation garments	[- 0F]

   After this, the program number will flash in the program No. display (4).



4423Q

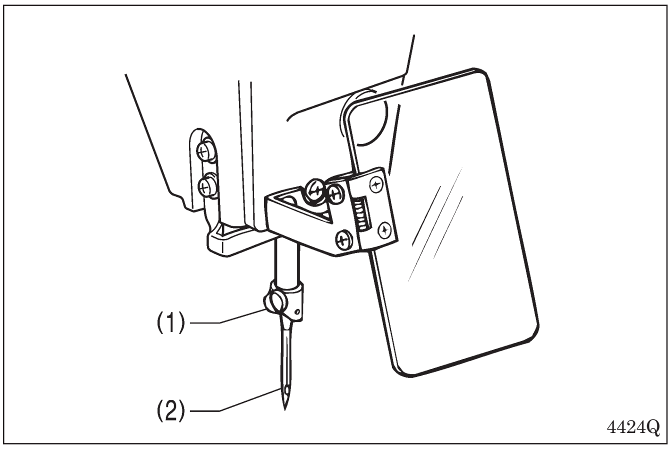
2. Depress the foot switch (6) to the 2nd step.
   The feed mechanism will move to the home position and the work clamp / button clamp will rise.

4. PREPARATION BEFORE SEWING

4-1. Installing the needle

CAUTION

Turn off the power switch before installing the needle, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.

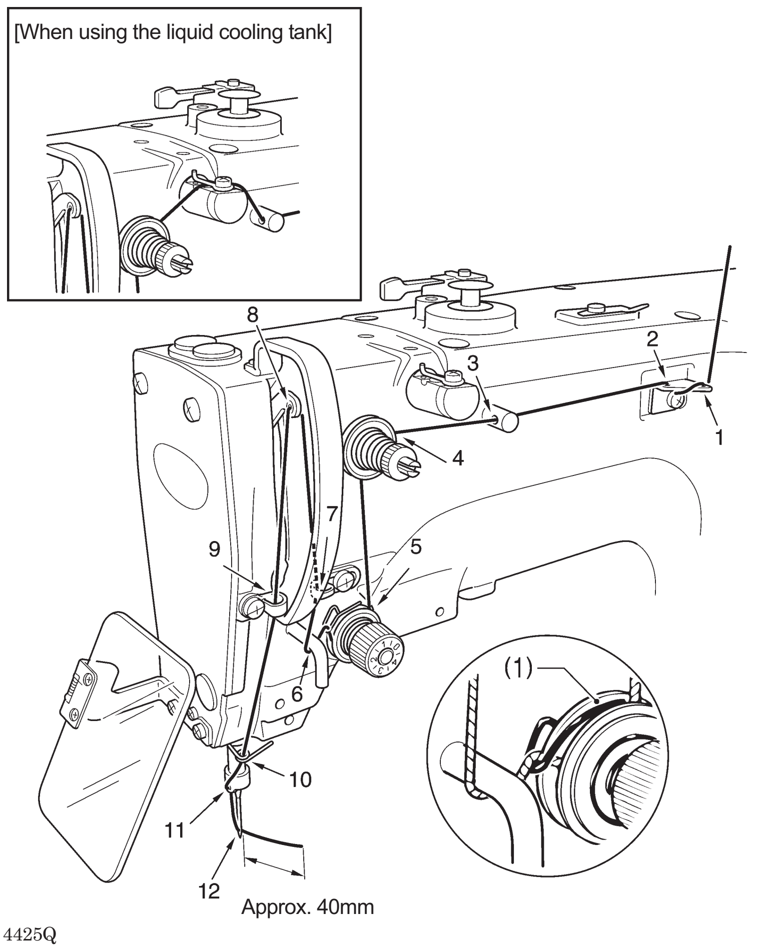


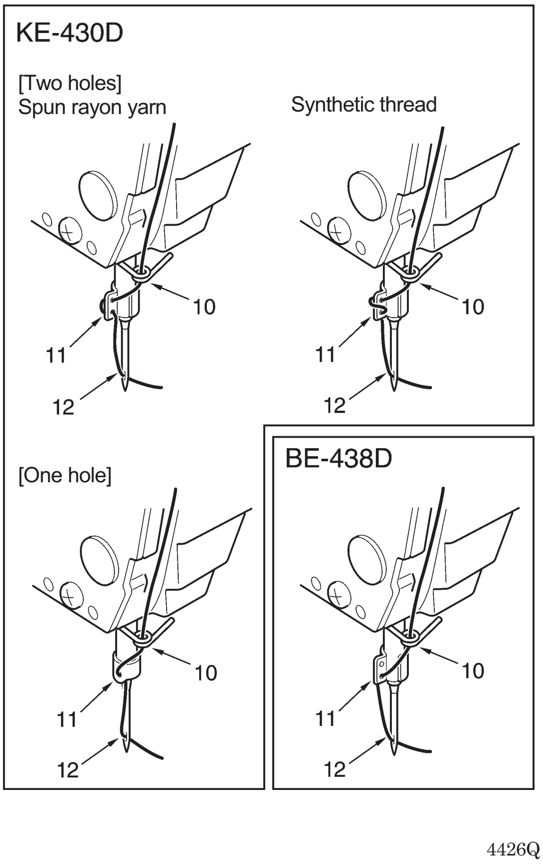
1. Loosen the set screw (1).
2. Insert the needle (2) in a straight line as far as it will go, making sure that the long groove on the needle is at the front, and then securely tighten the screw (1).

4-2. Threading the upper thread

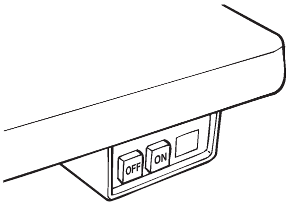
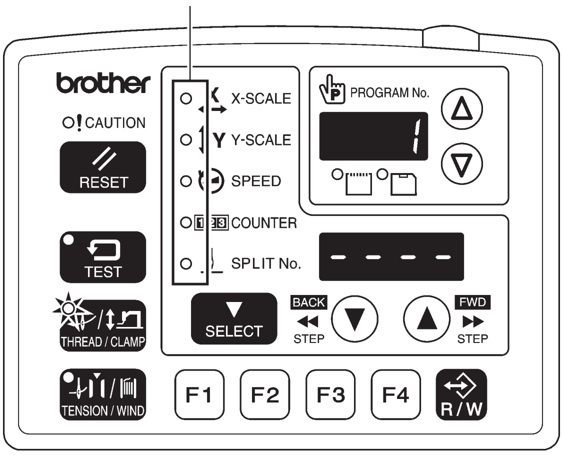
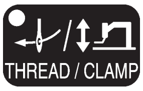
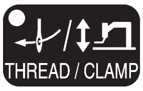
Thread the upper thread correctly as shown in the illustration below.

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


[When using the liquid cooling tank]
8
2
3
1
4
7
9
5
(1)
6
10
11
12
Approx. 40mm
4425Q


KE-430D
[Two holes]
Spun rayon yarn
Synthetic thread
10
11
12
10
11
12
[One hole]
10
11
12
BE-438D
10
11
12
4426Q

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

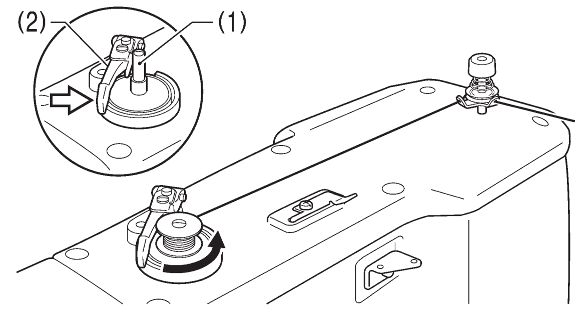
1	 4421Q	Turn on the power switch.
2	All indicators switch off  brother CAUTION RESET TEST THREAD / CLAMP TENSION / WIND X-SCALE Y-SCALE SPEED COUNTER SPLIT No. PROGRAM No. SELECT BACK STEP FWD STEP F1 F2 F3 F4 R / W THREAD/CLAMP indicator lights Menu indicators switch off 4427Q	Press the THREAD/CLAMP key.  THREAD / CLAMP • The work clamp /button clamp will lower. • The tension discs will open.
3	**Threading the thread.** • When 5 minutes have passed, the buzzer will sound and the tension discs will close.	
4	**Ending threading mode**  THREAD / CLAMP THREAD/CLAMP indicator switches off	Press the THREAD/CLAMP key. • The work clamp/button clamp will return to where it was before threading mode was started.

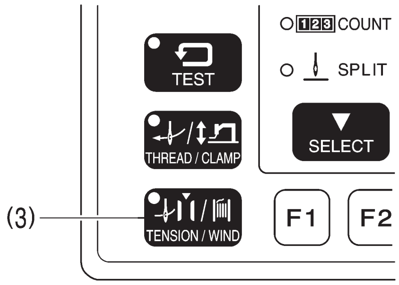
4-3. Winding the lower thread

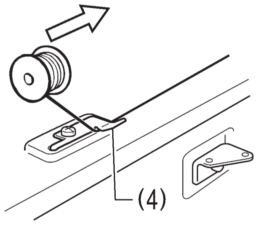
CAUTION

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

4429Q





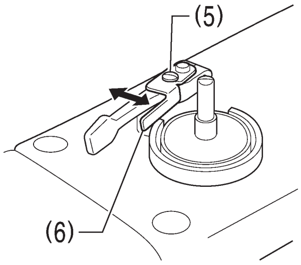


4431Q

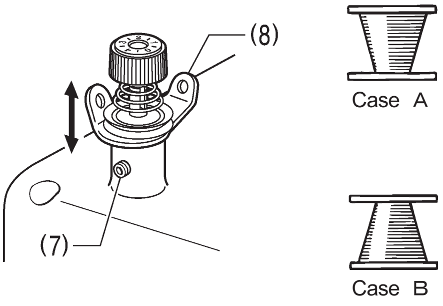
4430Q

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

4432Q



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



4471Q

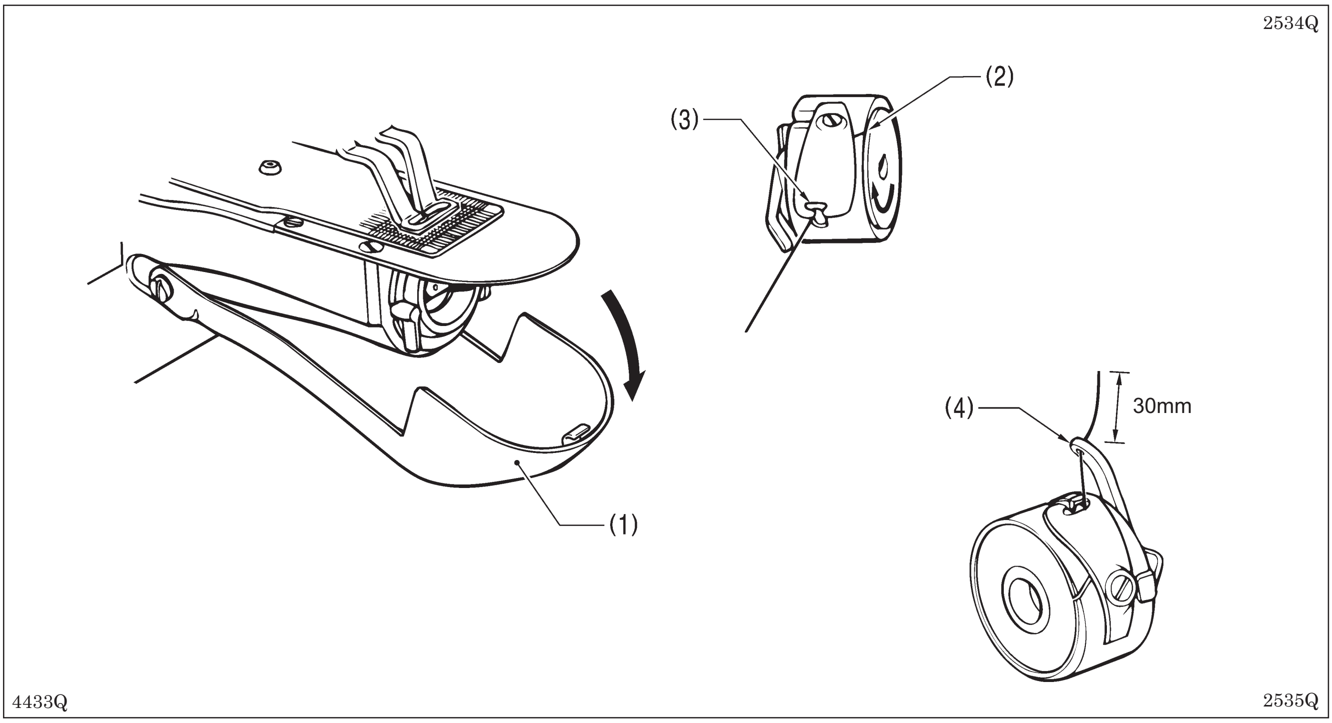
If the thread winds onto the bobbin unevenly
Loosen the set screw (7) and move the bobbin wider tension assembly (8) up and down to adjust.

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

4-4. Installing the bobbin case

CAUTION

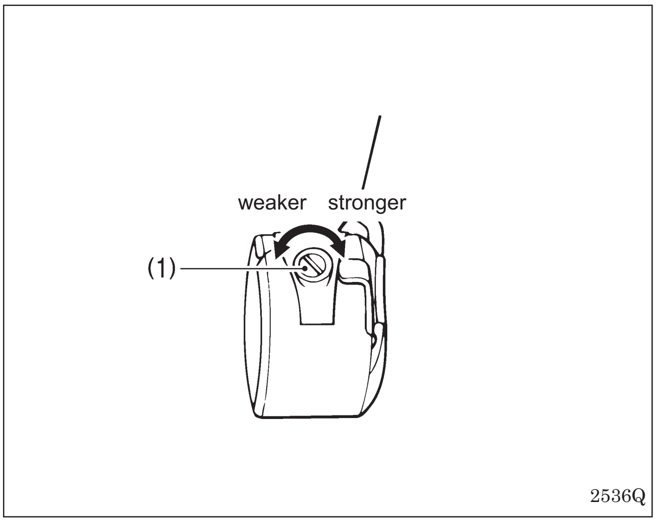
Turn off the power switch before installing the bobbin case, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.



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.

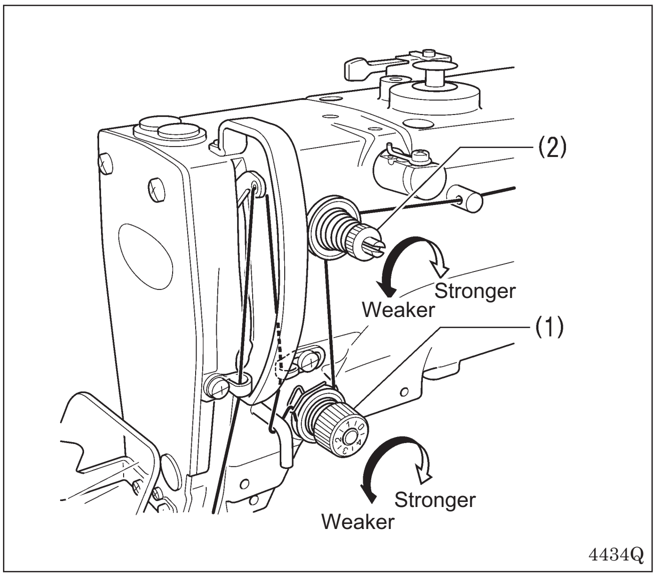
4-5. Thread tension

4-5-1. Lower thread tension



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

4-5-2. Upper thread tension



Turn the tension nut (1) (main tension) to adjust the tension as appropriate for the material being sewn.
Furthermore, turn the tension nut (2) (sub-tension) to adjust the remaining length of upper thread to 35 - 40 mm, when the thread take-up lever is not used.

[Reference thread tension]

Use	KE-430D				BE-438D
	Ordinary materials (-01)	Knitted materials (-07)	Foundation garments (-0F)	Denim (-02)	
Upper thread	#50 or equivalent	#60 or equivalent	#60 or equivalent	#30 or equivalent	#60 or equivalent
Lower thread	#60 or equivalent	#80 or equivalent	#60 or equivalent	#50 or equivalent	#60 or equivalent
Upper thread tension (N)	0.8 - 1.2			1.6 - 2.0	1.0 - 1.8
Lower thread tension (N)	0.2 - 0.3				0.2 - 0.4
Pre-tension (N)	0.05 - 0.3				0.1 - 0.4
Needle	DP x 5 #14	DP x 5 #9		DPx17NY#19	DPx17NY#12

[Guide to maximum sewing speed for KE-430D]

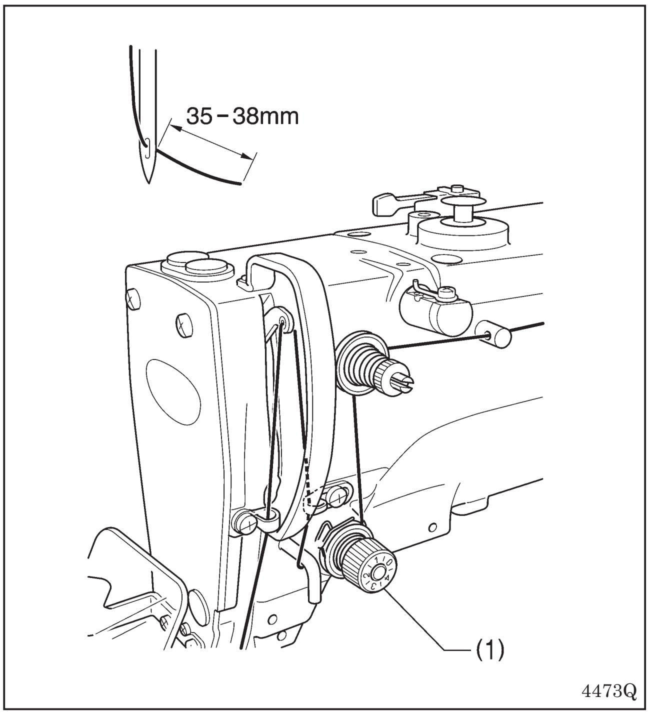
Use	Max. sewing speed (rpm)	
	Standard hook	Large hook
8 layers of denim	3,200	2,500
12 layers of denim	2,700	
Ordinary materials	2,700	2,500
Knitted materials Foundation garments	2,500	

Note:
The thread may break due to heat under some sewing conditions.
If this happens, reduce the sewing speed, or use the liquid cooling tank.

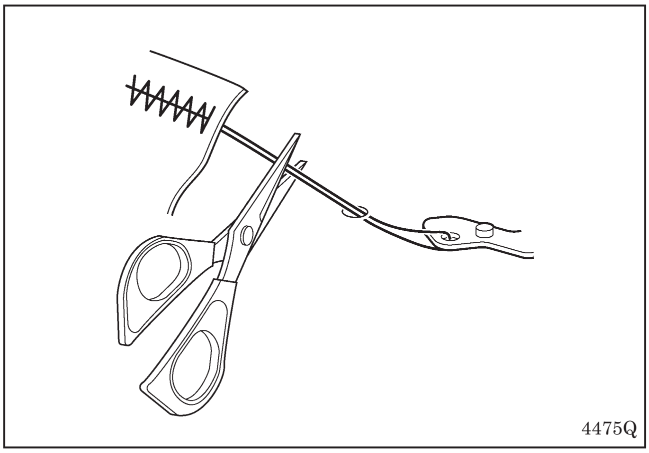
4-6. Thread nipper device

This is used to stop the thread from pulling out at the sewing start, and at times when skipped stitches might easily occur.
The thread nipper device operates when memory switch no. 500 is set to "ON". However, some limitations apply. Refer to "6-3. List of memory switches" for details.
* The default setting for this memory switch is "OFF".

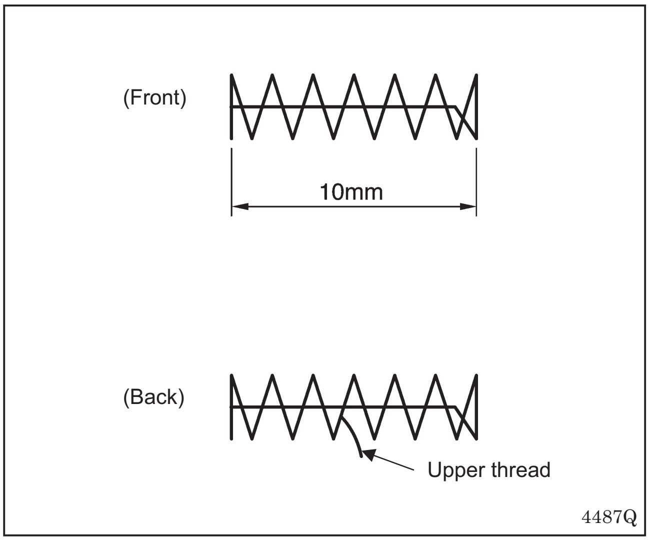
[Notes on use]



1. When using the thread nipper device, turn the tension nut (1) (sub-tension) to adjust the upper thread trailing length to 35 - 38 mm.
   * Adjust the upper thread trailing length to less than 40 mm after replacing the upper thread also.



2. If the upper thread trailing length is 40 mm or more, or if the upper thread tension is weak and the upper thread does not form a good seam at the first stitch, the end of the thread that is being held by the thread nipper may become wound around the seam.
   Furthermore, if using thick thread that is #30 or higher or if the thread trailing length is too long, an error [E691] may occur.
   In any of these cases, use scissors to cut the thread without pulling it up too hard.



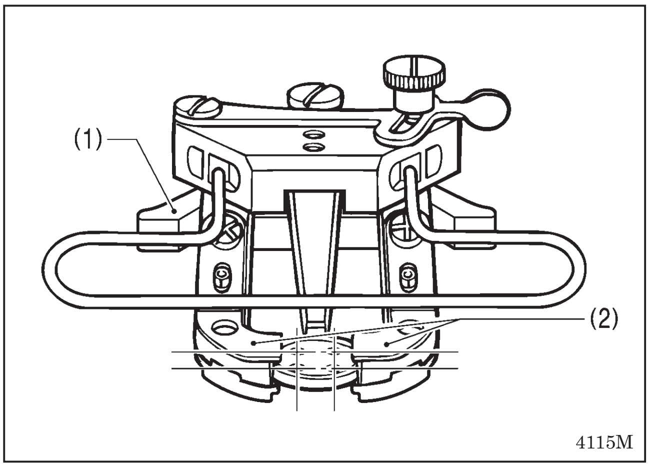
3. For sewing patterns with a short bar tack length (10 mm or less), the end of the thread that is being held by the thread nipper may poke out from the seam on the underside of the material. It is recommended that you change the thread nipper setting to "OFF" for patterns such as these.
4. If error [E690] or [E691] frequently occurs, remove the needle plate and remove any thread scraps from underneath the needle plate.

5. With the KE-430D, the lower thread may poke out from the underside of the material on the 2nd stitch for some types of material and thread. If this happens, it is recommended that you use sewing patterns that are designed for use with the thread nipper device.
   Refer to "2-2. Program list (KE-430D)" for details of the sewing patterns.

<Program No. Reference Table>

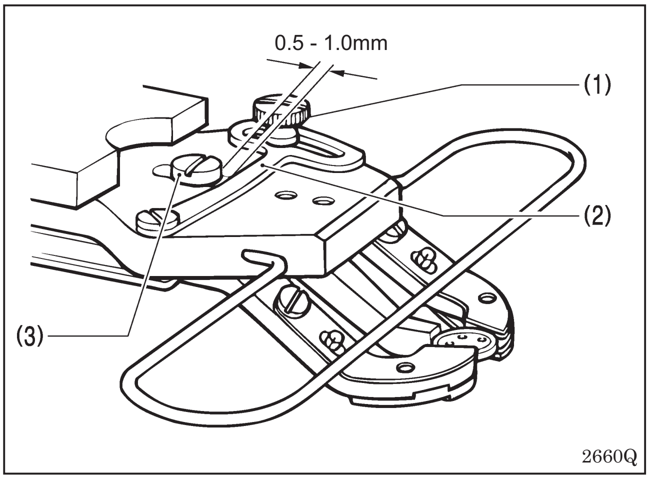
Specifications	Standard program No.	Program No. for thread nipper device
For ordinary materials (-01)	1	65
	4	66
	5	67
	8	68
	13	69
	15	70
	20	71
	21	72
For denim (-02)	2	78
	3	79
	6	80
	14	81
	16	82
	17	83
	18	84
	19	85
For knitted materials (-07) For foundation garments (-0F)	7	73
	9	74
	22	75
	31	76
	32	77

4-7. Inserting the button (BE-438D)



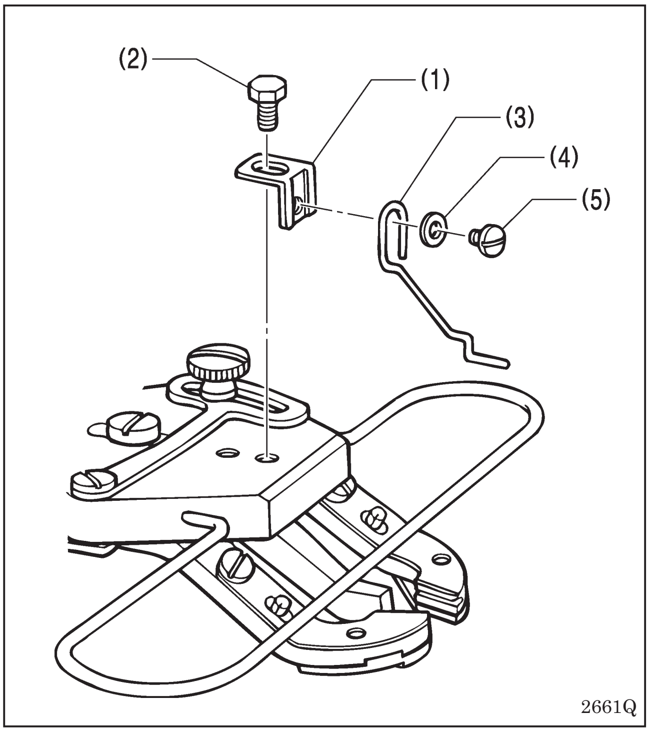
1. Press the button clamp plate cam (1) to open the button holder (2).
2. Insert the button, making sure that the button is facing the directing shown in the illustration, then release the button clamp plate cam (1).

4-8. Adjusting the button clamp (BE-438D)



1. Insert the button in the button clamp. Confirm that the button is securely held by the clamp.
2. Loosen the shoulder screw (1), while the button is held by the clamp. Move the adjusting plate (2) so that the space between the adjusting plate (2) and screw (3) is approximately 0.5 - 1.0 mm, then tighten the shoulder screw (1).

4-9. Installing the accessory spring (BE-438D)

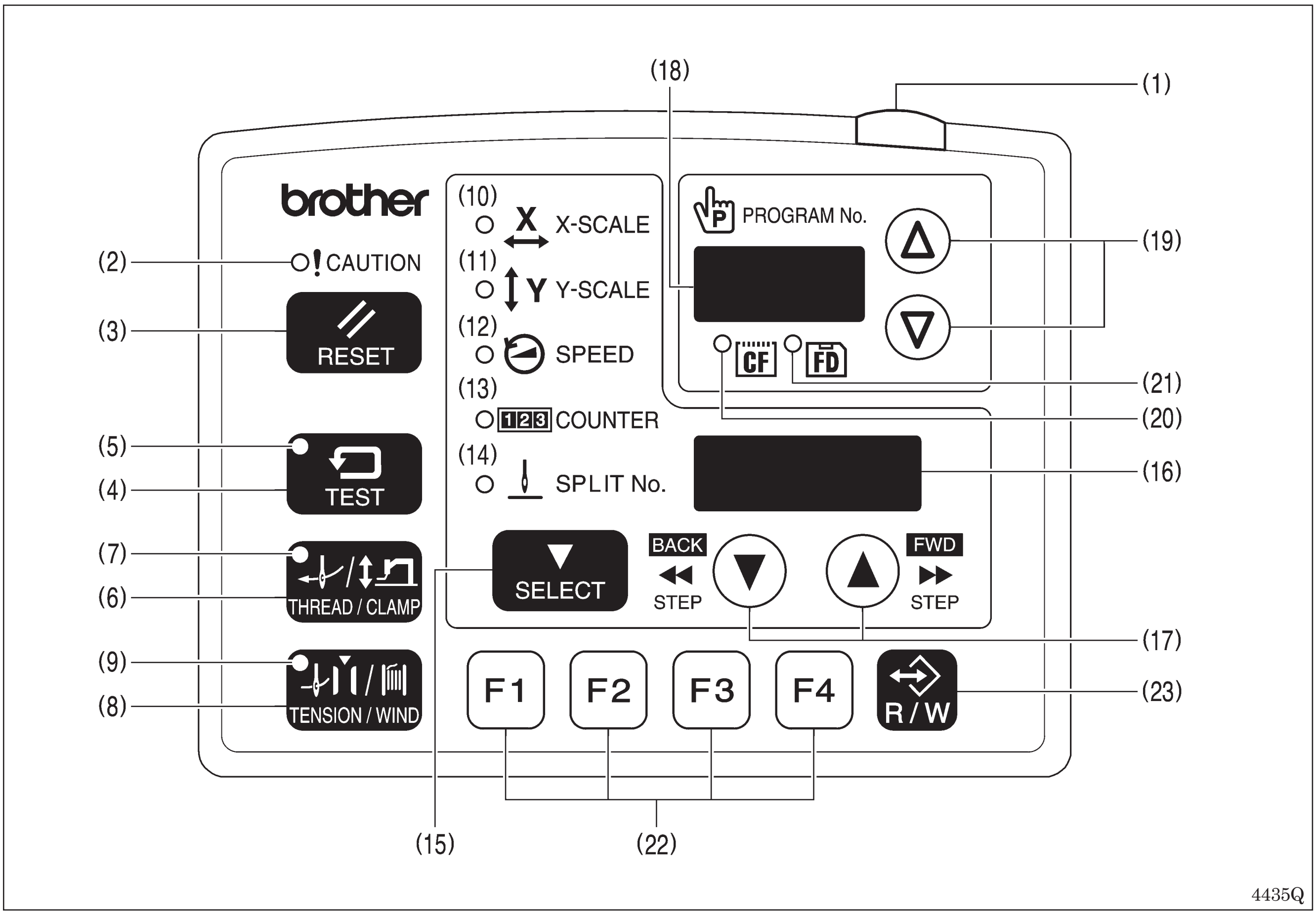


If you would like the button to be raised up more after it is sewn, install the accessory spring.

1. Install the spring support (1) with the bolt (2).
2. Install the spring (3) with the washer (4) and the screw (5).

5. USING THE OPERATION PANEL (BASIC OPERATIONS)

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


(18)
(1)
brother
(2)
CAUTION
(3)
RESET
(5)
(4)
TEST
(7)
(6)
THREAD / CLAMP
(9)
(8)
TENSION / WIND
(10)
X-SCALE
(11)
Y-SCALE
(12)
SPEED
(13)
123
COUNTER
(14)
SPLIT No.
PROGRAM No.
CF
FD
(19)
(21)
(20)
(16)
SELECT
BACK
STEP
FWD
STEP
(17)
F1
F2
F3
F4
R / W
(23)
(15)
(22)
4435Q

(1) Power indicator
Illuminates when the power is turned on.

(2) CAUTION indicator
Illuminates when an error occurs.

(3) RESET key
Used to reset errors.

(4) TEST key
Used to start test mode.

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

(6) THREAD/CLAMP key
Used to start threading mode or work clamp height setting mode.

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

(8) TENSION/WIND key
Used to wind the lower thread.

(9) TENSION/WIND indicator
Spare

(10) X-SCALE indicator
Illuminates when the SELECT key (15) is pressed to shown the X-scale setting.

(11) Y-SCALE indicator
Illuminates when the SELECT key (15) is pressed to shown the Y-scale setting.

(12) SPEED indicator
Illuminates when the SELECT key (15) is pressed to shown the sewing speed setting.

(13) COUNTER indicator
Illuminates when the SELECT key (15) is pressed to shown the lower thread or production counter setting.

(14) SPLIT No. indicator
Illuminates when the SELECT key (15) is pressed to show the split setting when split data (for specifying a pause while the program is running) exists.

(15) SELECT key
Used to select a menu (X-scale, Y-scale, sewing speed and counter).

(16) Menu display
Displays information such as menu setting values, memory switch settings and error codes.

(17) Setting keys ▼ ▲
Used to change the value which is displayed in the menu display (16).

(18) PROGRAM No. display
Displays information such as program numbers.

(19) Setting keys ∇ ∆
Used to change the value which is displayed in the PROGRAM No. display (18).

(20) CF media indicator
Illuminates when a CF card (external media) is inserted.

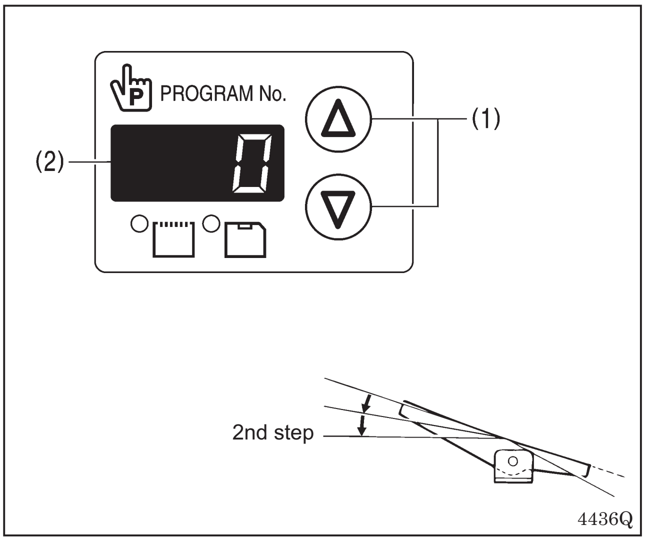
(21) FD media indicator
Spare

(22) Function keys [F1, F2, F3, F4]
Used to select user programs and to set and select cycle programs.

(23) R/W key
Used to read data from and write data to external media.

CF™ is a trademark of SanDisk Corporation.

5-2. Setting the program number


PROGRAM No.
(1)
(2)
0
2nd step
4436Q

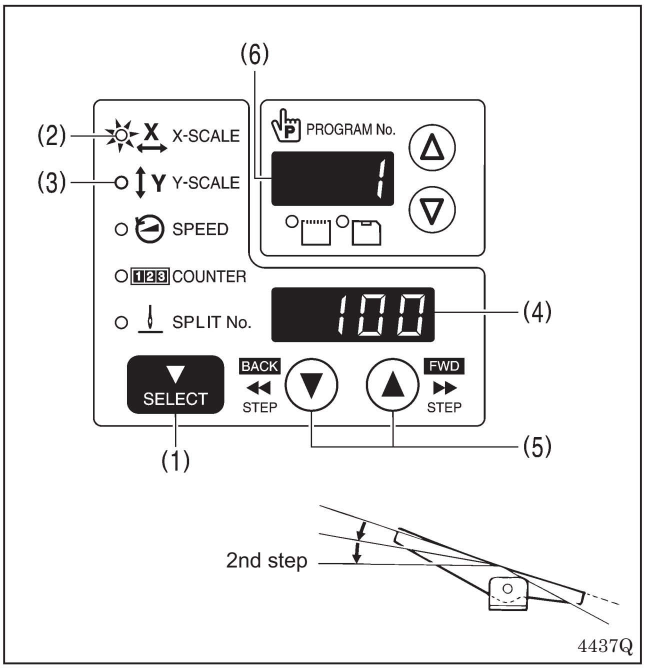
The program number is set to 0 (feed home position check) at the time of shipment from the factory.

1. Press the Δ or ∇ key (1) to select the program number.
   - The program number will flash in the PROGRAM No. display (2).
2. Depress the foot switch to the 2nd step.
   - The feed mechanism will move to the home position and the program number will be accepted.
   - The program number will stop flashing and illuminate steadily.

Note:

Once the setting is complete, be sure to carry out the steps in "5-5./5-6. Checking the sewing pattern" to check that the needle drop position is correct.

5-3. Setting the X-scale and Y-scale


(6)
(2)
(3)
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
1
100
(4)
SELECT
BACK
STEP
FWD
STEP
(1)
(5)
2nd step
4437Q

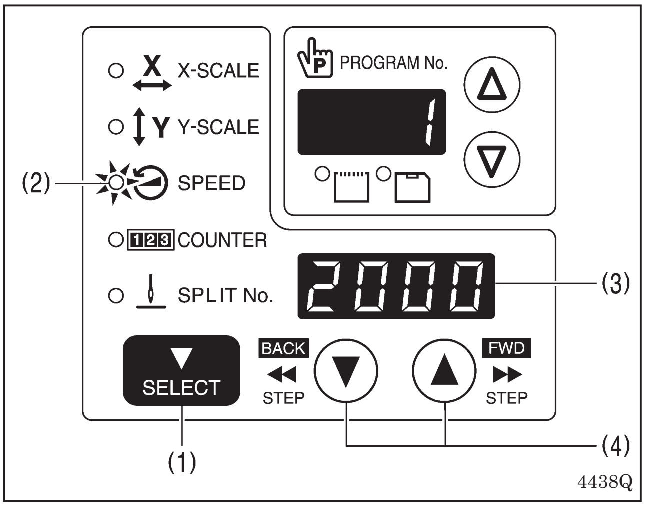
The scales are set to 100 (%) at the time of shipment from the factory.

1. Press the SELECT key (1) so that the X-SCALE indicator (2) (for X-scale setting) or the Y-SCALE indicator (3) (for Y-scale setting) is illuminated.
   - The setting value (%) will display in the menu display (4).
   - * When memory switch no. 402 is set to "ON", the settings will be displayed in units of mm.
2. Press the ▲ or ▼ key (5) to set the scale (20 - 200).
   - The program number will flash in the PROGRAM No. display (6).
3. Depress the foot switch to the 2nd step.
   - The feed mechanism will move to the home position and the scale will be accepted.
   - The program number will stop flashing and illuminate steadily.

Note:

Once the setting is complete, be sure to carry out the steps in "5-5./5-6. Checking the sewing pattern" to check that the needle drop position is correct.

5-4. Setting the sewing speed


X-SCALE
Y-SCALE
(2)
SPEED
COUNTER
SPLIT No.
PROGRAM No.
1
2000
(3)
SELECT
BACK
STEP
FWD
STEP
(1)
(4)
4438Q

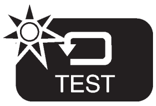
The sewing speed is set to 2000 (rpm) at the time of shipment from the factory.

1. Press the SELECT key (1) until the SPEED indicator (2) illuminates.
   - The setting value (rpm) will display in the menu display (3).
2. Press the ▲ or ▼ key (4) to set the sewing speed.
   (Sewing speed setting values KE-430D: 400 - 3200, BE-438D: 400 - 2700)

5-5. Checking the sewing pattern (KE-430D)

Use test feed mode to check the needle movement with only the feed mechanism operating.
Check that the needle hole does not come out from the frame of the work clamp.

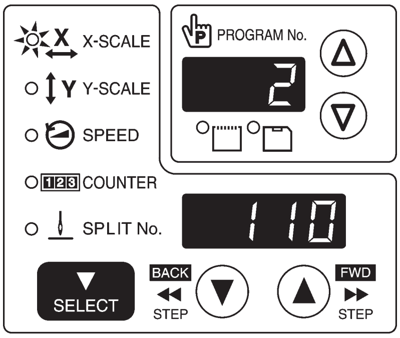
1



TEST indicator lights

Press the TEST key.

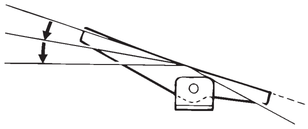
2



Program number flashing → lit

Select the program number to be checked, and then set the X-scale and the Y-scale.
- The program number will flash.

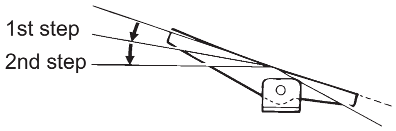
Depress the foot switch to the 2nd step.
- The feed mechanism will move to the home position and the program number will stop flashing and illuminate steadily.



4440Q 4441Q

3

Starting continuous test feed mode



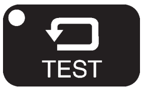
4441Q

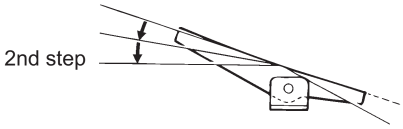
Depress the foot switch to the 2nd step and then release it.
- Feed mechanism starts moving continuously one stitch at a time.

[Fast-forward test mode]
If you depress the foot switch to the 1st step while the feed mechanism is moving, the feeding speed will become faster while the foot switch is being depressed.

[Sewing standby mode]

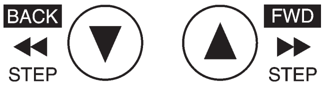
4441Q





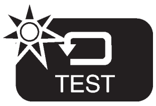
TEST indicator switches off

If you would like sewing to start while test feeding is in progress, press the TEST key to switch off the TEST indicator.
When you depress the foot switch to the 2nd step, sewing will start.



- If you press the ▲ key when in this mode, the feed will move forward one stitch, and if you press the ▼ key, the feed will move backward one stitch. (The feed will move quicker if you keep the key pressed down.)

4443Q

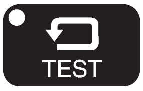


TEST indicator lights

- If you would like to start test feed once more, press the TEST key.

4

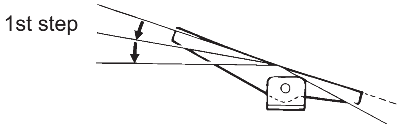
If test feeding continues to the final stitch, it will then stop.



TEST indicator switches off

Press the TEST key.

5



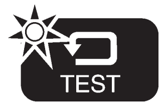
Depress the foot switch to the 1st step.
The work clamp will rise and the preparation for sewing will be completed.

4441Q

5-6. Checking the sewing pattern (BE-438D)

Use test feed mode to check the needle movement with only the feed mechanism operating.

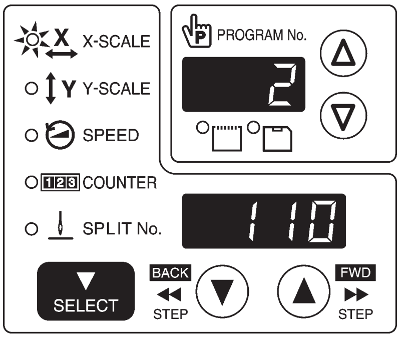
1



TEST indicator lights

Press the TEST key.

2



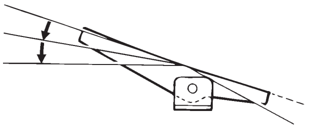
Program number flashing → lit

Select the program number to be checked, and then set the X-scale and the Y-scale.

- The program number will flash.

Depress the foot switch to the 2nd step.

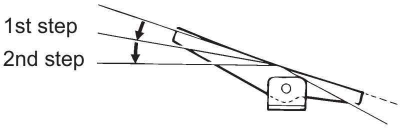
- The feed mechanism will move to the home position and the program number will stop flashing and illuminate steadily.



4440Q 4441Q

3 **Set the button. (Refer to “4-7. Inserting the button”.)**

4 **Starting single-stitch test feed mode**



Depress the foot switch to the 2nd step and then release it.

- The feed mechanism will move by one stitch only.

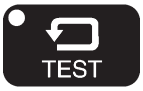
After this, the feed mechanism will move forward by one stitch each time you depress the foot switch to the 1st step. Turn the pulley by hand each time the mechanism moves by one stitch, and check whether the needle drops into the hole of the button without touching the button. (If you turn the machine pulley one full rotation in the direction of sewing machine operation at this time, the feed mechanism will move forward by one stitch when the needle bar is near the needle up position.)

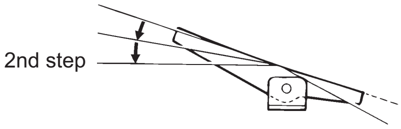
In addition, if you depress the foot switch to the 2nd step again, the feed mechanism will start moving continuously one stitch at a time.

4441Q

[Sewing standby mode]

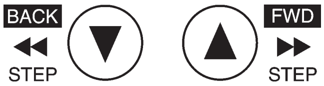
4441Q





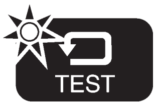
TEST indicator switches off

If you would like sewing to start while test feeding is in progress, press the TEST key to switch off the TEST indicator.
When you depress the foot switch to the 2nd step, sewing will start.



- If you press the ▲ key when in this mode, the feed will move forward one stitch, and if you press the ▼ key, the feed will move backward one stitch. (The feed will move quicker if you keep the key pressed down.)

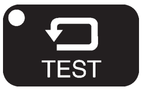
4443Q



TEST indicator lights

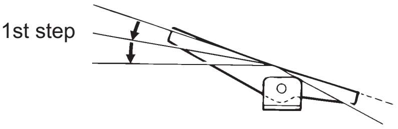
- If you would like to start single-stitch test feed once more, press the TEST key.

5 **Ending test feed mode** Press the TEST key.



TEST indicator switches off

6 Depress the foot switch to the 1st step.
The work clamp will rise and the preparation for sewing will be completed.

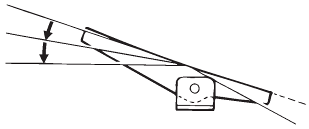


4441Q

5-7. Adjusting the work clamp / button clamp lift amount

The setting for the work clamp/button clamp lift amount can be changed using the operation panel.

1

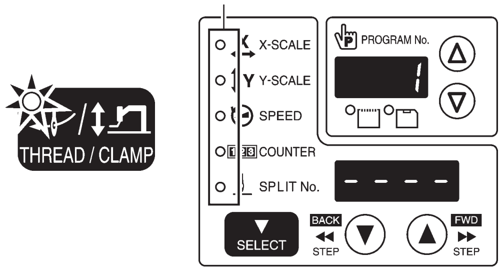


Carry out home position detection.

4441Q

2

All indicators switch off



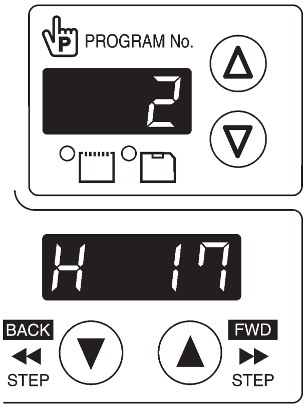
THREAD/CLAMP indicator lights
Menu indicators switch off

4445Q

Press the THREAD/CLAMP key.
The sewing machine will switch to threading mode.

- “ 1” will appear in the PROGRAM No. display, and the work clamp / button clamp will be lowered.

3



4446Q

Press the Δ key.
The sewing machine will switch to work clamp height setting mode.

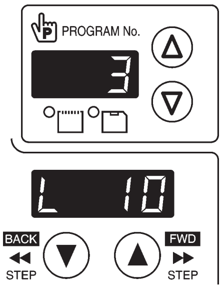
- " 2" will appear in the PROGRAM No. display and the work clamp/button clamp will rise to the setting value that appears in the menu display. (Work clamp height setting values KE-430D: 10 - 17, BE-438D: 6 - 13)

Note:
If you press the Δ key before home position detection has been carried out, the sewing machine will not switch to work clamp height setting mode. (The buzzer will sound.) Press the THREAD/CLAMP key to end setting mode and then repeat the procedure from step 1.

Press the ▲ or ▼ key to set the work clamp height.

- The work clamp/button clamp will rise or drop to the height of the new value that has been set.

When memory switch no.003 is "ON"



4447Q

Press the Δ key.
The sewing machine will switch to intermediate work clamp height setting mode.

- " 3" will appear in the PROGRAM No. display and the work clamp/button clamp will move to the setting value that appears in the menu display.
  (Intermediate work clamp height setting values KE-430D: 1 - 17, BE-438D: 1 - 13)

Press the ▲ or ▼ key to set the intermediate work clamp height.

- The work clamp/button clamp will rise or drop to the height of the new value that has been set.

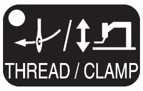
<Switching modes>

[2] Work clamp height setting mode
↓↑
([3] Intermediate work clamp height setting mode)
↓↑
[1] Threading mode

Δ
∇

4448Q

4 **Ending setting mode**



THREAD/CLAMP indicator switches off

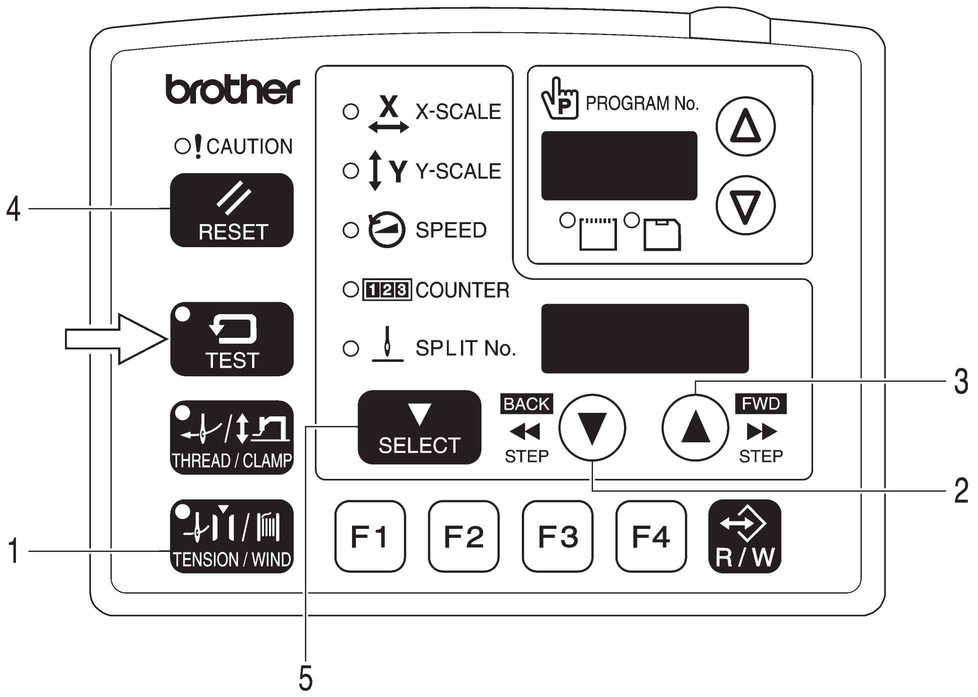
Press the THREAD/CLAMP key.

- The setting values will be memorized.
- The work clamp/button clamp will return to the status that it was at before the sewing machine was switched to setting mode.

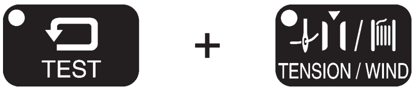
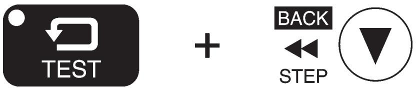
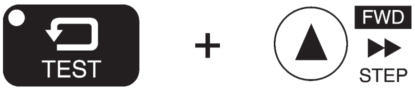
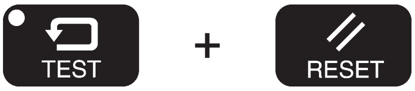
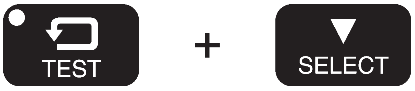
6. USING THE OPERATION PANEL (ADVANCED OPERATIONS)

6-1. List of advanced functions

While holding down the TEST key, press the corresponding combination key.


brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X X-SCALE
Y Y-SCALE
SPEED
123 COUNTER
SPLIT No.
P PROGRAM No.
SELECT
BACK STEP
FWD STEP
F1
F2
F3
F4
R / W
1
2
3
4
5

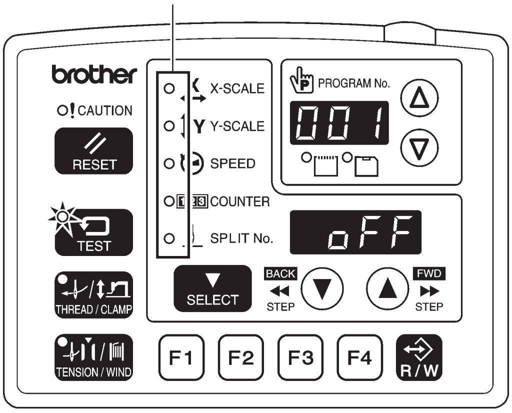
4488Q

1	 TEST + TENSION / WIND	Memory switch setting mode Refer to “6-2. Setting memory switches”. 4489Q
2	 TEST + BACK STEP	Lower thread counter setting mode Refer to “6-4. Using the lower thread counter”. 4490Q
3	 TEST + FWD STEP	Production counter setting mode Refer to “6-5. Using the production counter”. 4491Q
4	**When the SPEED indicator lights** 	Production counter temporary display function Refer to “6-5. Using the production counter”. 4492Q
5	 TEST + SELECT	User program setting mode Refer to “6-6. Using user programs”. 4493Q

6-2. Setting memory switches

1

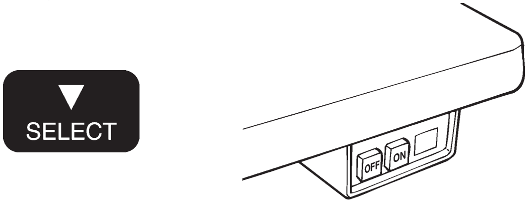
All indicators switch off


brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
001
oFF
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R / W

Menu indicators switch off
TEST indicator lights

While pressing the SELECT key, turn on the power switch.

* Keep pressing the SELECT key until the model name is displayed and the buzzer beeps once.


SELECT
OFF
ON

Or

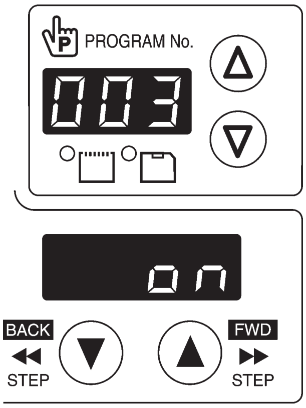
With the power turned on, press the TEST key and the TENSION/WIND key simultaneously.

TEST
TENSION / WIND

- The memory switch number will appear in the PROGRAM No. display, and its setting value will appear in the menu display.

4449Q 4421Q

2

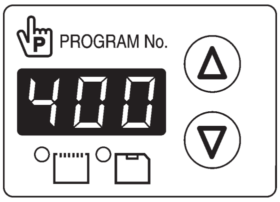

PROGRAM No.
003
on
BACK
STEP
FWD
STEP

Press the Δ or ∇ key to select the memory switch number.

Press the ▲ or ▼ key to change the setting value.

4451Q

If you would like to display only the numbers of memory switches that have been changed from default settings


PROGRAM No.
400

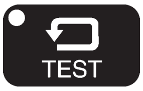
While pressing the SELECT key, press the Δ or ∇ key.

- The numbers of memory switches that have been changed from default settings will appear in order.
- If no memory switches have been changed from their default settings, the display will not change and the buzzer will beep twice.

4452Q

3

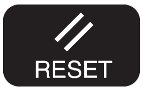
Ending setting mode



TEST indicator switches off

Press the TEST key.

- The changes will be memorized and the sewing machine will switch to home position detection standby.



- If you would like to return the setting for a single memory switch to the default setting, press the RESET key while the number for that memory switch is displayed.
- To return the settings for all memory switches to the default settings, keep pressing the RESET key for **two or more seconds** until the buzzer makes a long beep.

6-3. List of memory switches

No.	Setting range	Setting items	Default
001	Work clamp/button clamp lift timing when sewing is complete		OFF
	OFF	Lifts at the final stitch position.	
	ON	Lifts after moving to the home position.	
003	2-step work clamp		OFF
	OFF	Disable	
	ON	Stops at intermediate work clamp height setting mode when foot switch is depressed to 1st step, and then drops fully and sewing starts when foot switch is depressed to 2nd step.	
100	Sewing start speed		*1
	OFF	The sewing speed for the first 1 - 5 stitches is set by memory switch nos. 151 - 155. (Refer to the Service Manual for details of memory switch nos. 151 - 155.)	
	ON	Refer to (*1) below.	
200	Single-stitch test feed		*2
	OFF	Test feed starts when the foot switch is depressed, and it continues automatically until the final stitch.	
	ON	Test feeding is carried out stitch by stitch when the foot switch is depressed. In addition, when the test indicator is illuminated, test feeding will move forward one stitch at a time when the machine pulley is turned by hand.	
300	Production counter display		OFF
	OFF	Lower thread counter display	
	ON	Production counter display	
400	User programs		OFF
	OFF	Disable	
	ON	User program mode is enabled.	
401	Cycle programs		OFF
	OFF	Disable	
	ON	When sewing user programs, the set programs are sewn in numeric order.	
402	Units display for pattern zoom ratio (*3)		OFF
	OFF	Displayed as %.	
	ON	Displayed as mm.	
500	Thread clamp device		OFF
	OFF	Disable	
	ON	Thread clamp device can be used. (*4)	

*1 Sewing start speed when the memory switch no. 100 is set to ON.

Specifications	1st stitch	2nd stitch	3rd stitch	4th stitch	5th stitch	Default
KE-430D-02	400	800	3,200	3,200	3,200	OFF
KE-430D-01, -07	400	800	1,200	3,200	3,200	ON
KE-430D-0F	400	600	900	1,200	3,200	OFF
BE-438D	400	400	600	900	2,000	ON

*2 Off for KE-430D and ON for BE-438D.

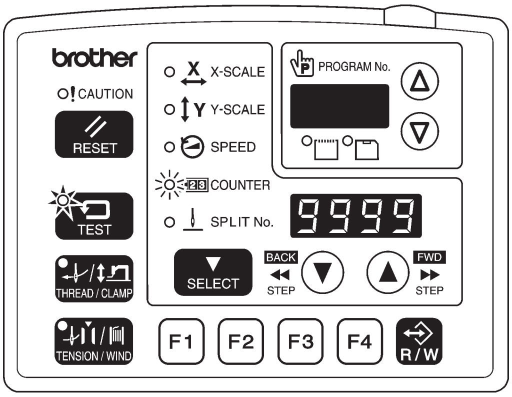
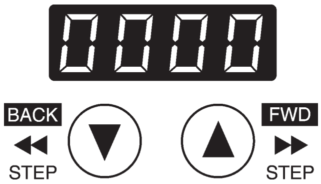
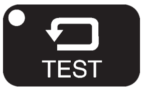
*3 The mm display may differ slightly from the actual sewing size.

*4 May not operate if the settings for the memory switch nos. 151 and 152 have been changed, or at some sewing speeds. (Refer to the Service Manual for details of memory switch nos. 151 and 152.)

6-4. Using the lower thread counter

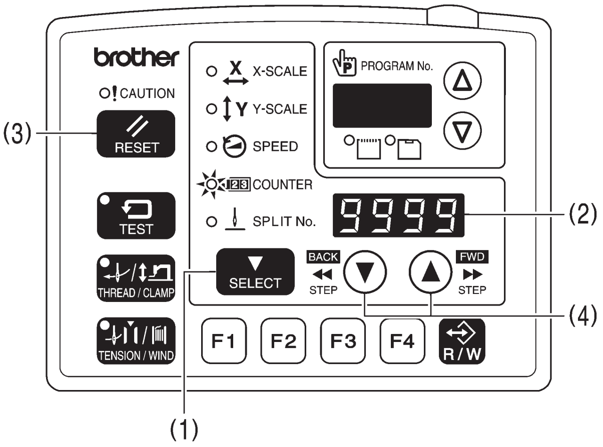
If you use the bobbin thread counter to set the number of articles which can be sewn with the amount of bobbin thread available, you can stop the bobbin thread running out in the middle of sewing a pattern.

<Initial value setting>

1	 brother CAUTION RESET TEST THREAD / CLAMP TENSION / WIND X-SCALE Y-SCALE SPEED COUNTER SPLIT No. PROGRAM No. 9999 SELECT BACK STEP FWD STEP F1 F2 F3 F4 R/W TEST indicator lights, COUNTER indicator flashes	While pressing the TEST key, press the ▼ key. TEST BACK STEP • The initial value which was set previously will appear in the menu display. 4454Q 4455Q
2	 0000 BACK STEP FWD STEP 4456Q	Press the ▲ or ▼ key to set the initial value. • The initial value can be set from 1 ("0001") to 9999 ("9999"). • If the initial value is set to "0000", the lower thread counter will not operate. • If you press the RESET key during setting mode, the value will become "0000".
3	**Ending setting mode**  TEST indicator switches off	Press the TEST key. • The initial value will be memorized.

<Lower thread counter operation>

If you press the SELECT key (1) to select the counter display menu when memory switch no. 300 is set to "OFF", the COUNTER indicator will illuminate and the lower thread counter will appear in the menu display (2).


(3)
(2)
(4)
(1)
brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
9999
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R/W

4463Q

1. Each time the sewing of a single article is completed, the value shown in the menu display (2) is reduced by 1.
2. When the lower thread counter reaches "0000", the buzzer will sound. The sewing machine will not operate during this time, even if the foot switch is depressed.
3. When you press the RESET key (3), the buzzer will stop, the initial value will appear in the menu display (2) and sewing will be possible.
   - If no initial value has been set, the display will be "0000".

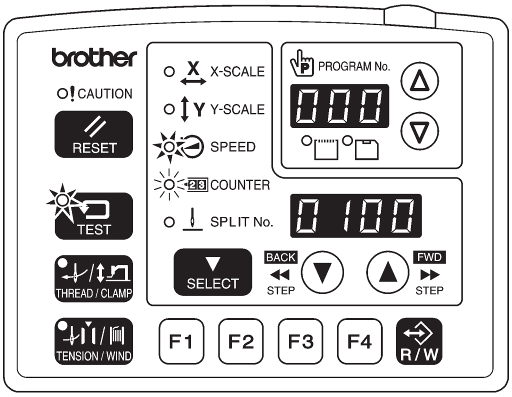
* You can press the ▲ or ▼ key (4) to set the lower thread counter to the desired value. However, this value will not be memorized as the initial value.

* If a lower thread counter value is set, the lower thread counter will operate even if the lower thread counter is not being displayed.

6-5. Using the production counter

<Setting the counter value>

1


brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
000
0100
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R/W

TEST indicator and SPEED indicator light
COUNTER indicator flashes

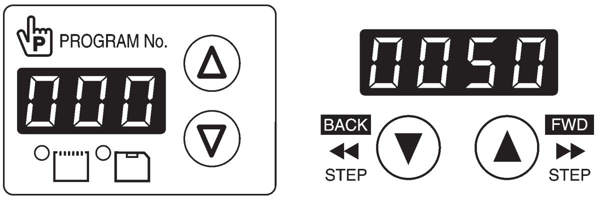
While pressing the TEST key, press the ▲ key.

TEST
FWD
STEP

- The counter value will appear in the PROGRAM No. display and the menu display as a 7-digit number.

4464Q 4465Q

2

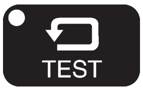

PROGRAM No.
000
0050
BACK
STEP
FWD
STEP

Press the ▲ or ▼ key to set the counter value.

- The counter value can be set from [000][0000] to [999][9999].
- If you press the RESET key during setting mode, the value will become [000][0000].

4466Q

3 **Ending setting mode**



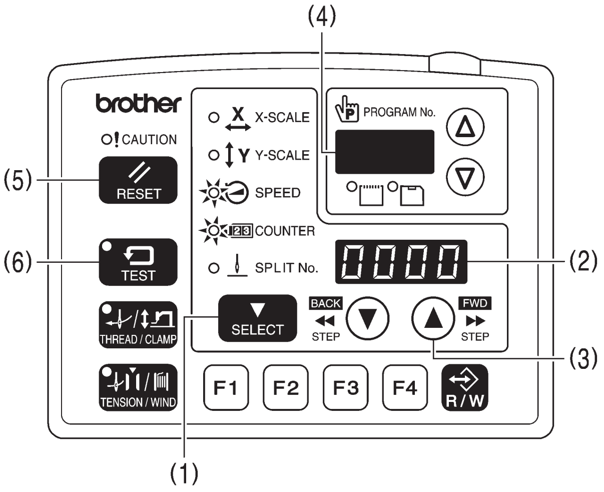
TEST indicator switches off

Press the TEST key.

- The counter value will be memorized.

<Production counter operation>

If you press the SELECT key (1) to select the counter display menu when memory switch no. 300 is set to "ON", the SPEED and COUNTER indicators will illuminate and the production counter will appear in the menu display (2).


(4)
(5)
(6)
(2)
(3)
(1)
brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
0000
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R/W

4468Q

1. Each time the sewing of a single article is completed, the value shown in the menu display (2) is increase by 1.
2. The first three digits will appear in the PROGRAM No. display (4) while the ▲ key (3) is being pressed, so that the total number of digits displayed will be 7.
3. If you press the RESET key (5) for 2 seconds or more, the counter value will be reset to [0000].

Temporary display function

You can display the production counter temporarily while the lower thread counter is being displayed.

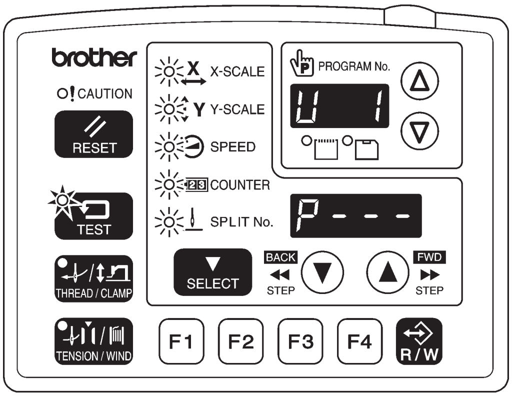
When the SPEED indicator is illuminated, hold down the TEST key (6) and then press the RESET key (5) to display the production counter in the menu display (2).
Press the TEST key (6) or the SELECT key (1) to switch the menu back to the normal menu display.
* Sewing can continue as normal while the temporary display is active.

6-6. Using user programs

Up to 50 different combinations of settings including program no., X-scale, Y-scale, sewing speed and work clamp height can be memorized as user programs (U1 to U50).
If you are sewing certain patterns over and over again, it is useful to record the settings for these patterns into a user program.
User programs are enabled when memory switch no. 400 is set to "ON".

<Recording the user programs>

1 Select a user program number.


brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
U 1
P - - -
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R / W

TEST indicator lights
Menu indicators flash

While pressing the TEST key, press the SELECT key.

TEST
SELECT

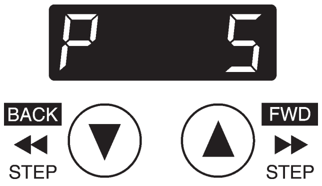
- Switch to user program recording mode. Check that the menu indicators are flashing.
- User program number will appear in the PROGRAM No. display, and “ P- - - “ will appear in the menu display.

Press the Δ or ∇ key to select a user program number.

4469Q

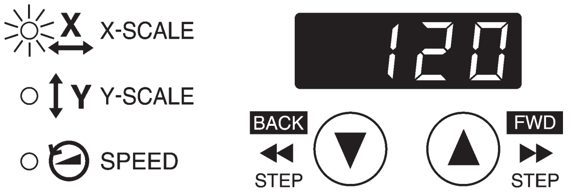
2 First, set the program number.

4486Q


P 5
BACK
STEP
FWD
STEP

Press the ▲ or ▼ key to set the program number that you would like to record.

3 Next, set the X-scale.


X-SCALE
Y-SCALE
SPEED
120
BACK
STEP
FWD
STEP

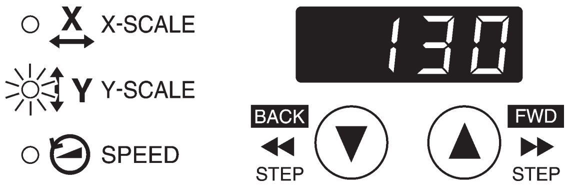
X-SCALE indicator flashes

Press the SELECT key.

4470Q

Press the ▲ or ▼ key to set the X-scale that you would like to record.

4 Next, set the Y-scale.


X-SCALE
Y-SCALE
SPEED
130
BACK
STEP
FWD
STEP

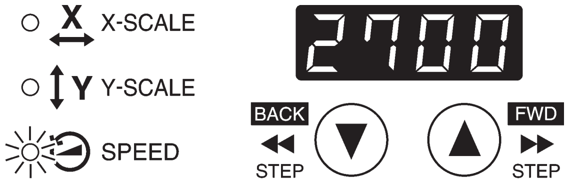
Y-SCALE indicator flashes

Press the SELECT key.

4472Q

Press the ▲ or ▼ key to set the Y-scale that you would like to record.

5 Next, set the sewing speed.

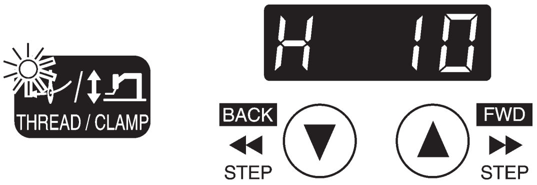
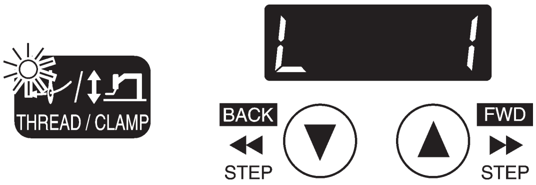
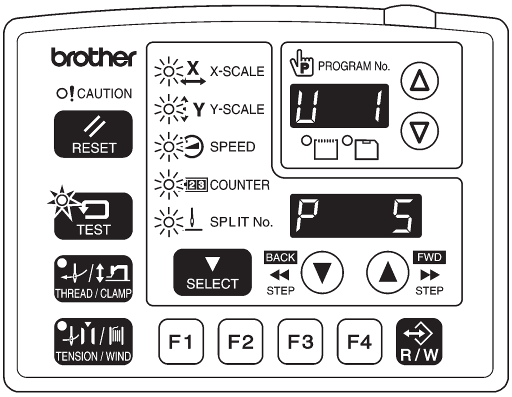
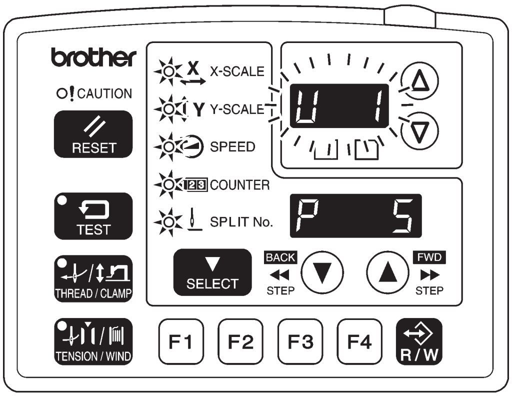
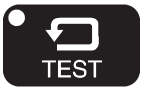

X-SCALE
Y-SCALE
SPEED
2700
BACK
STEP
FWD
STEP

SPEED indicator flashes

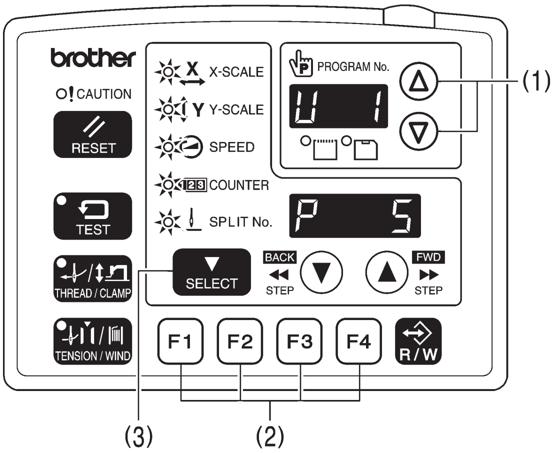
Press the SELECT key.

4474Q

Press the ▲ or ▼ key to set the sewing speed that you would like to record.

6	**Next, set the work clamp height.**  THREAD / CLAMP H 10 BACK STEP FWD STEP THREAD/CLAMP indicator flashes	Press the SELECT key. 4476Q Press the ▲ or ▼ key to set the desired work clamp height.
7	**Next, set the intermediate work clamp height (only when memory switch no. 003 is "ON").**  THREAD / CLAMP L 1 BACK STEP FWD STEP THREAD/CLAMP indicator flashes	Press the SELECT key. 4477Q Press the ▲ or ▼ key to set the desired intermediate work clamp height.
8	 brother CAUTION RESET TEST THREAD / CLAMP TENSION / WIND X-SCALE Y-SCALE SPEED COUNTER SPLIT No. PROGRAM No. U 1 P 5 SELECT BACK STEP FWD STEP F1 F2 F3 F4 R/W TEST indicator lights Menu indicators flash	Press the SELECT key. • If setting further user programs, select the user program number and then repeat steps 2 to 8. 4478Q
9	**End user program recording mode.**  brother CAUTION RESET TEST THREAD / CLAMP TENSION / WIND X-SCALE Y-SCALE SPEED COUNTER SPLIT No. U 1 P 5 SELECT BACK STEP FWD STEP F1 F2 F3 F4 R/W TEST indicator switches off Menu indicators light	Press the TEST key.  **This completes the recording of a user program.** • The user program number will flash in the PROGRAM No. display, and the sewing machine will switch to home position detection standby. 4479Q

<Using a user program>

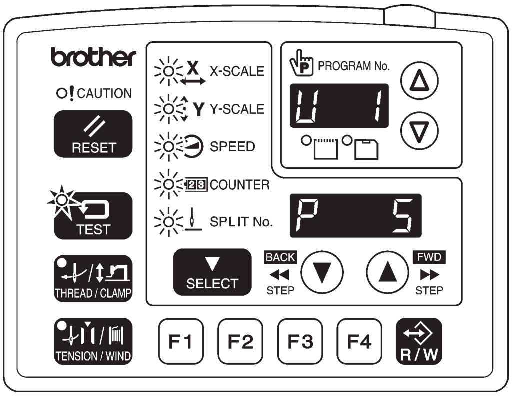
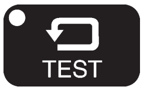
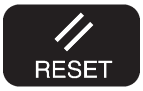

brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
U 1
P 5
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R/W
(1)
(3)
(2)

4480Q

1. Press the Δ or ∇ key (1) to select the user program number that you would like to use.
   - If the user program number is flashing, depress the foot switch to move the feed mechanism to the home position. After this, it is not necessary to detect the home position until the next time the power is turned off and back on, even if you change the user program number.
   - User programs U1 to U10 can be selected directly using function keys F1 to F4 (2). (Refer to "6-8. Direct selection".)
2. Check that the needle drop position is correct, and then start sewing. (Refer to “5-5. /5-6. Checking the sewing pattern”.)

- If you press the SELECT key (3), you can check the settings for the displayed user program (such as X-scale, Y-scale and sewing speed).

<Clearing a user program>

1	 TEST indicator lights Menu indicators flash	While pressing the TEST key, press the SELECT key.  • Switch to user program recording mode. Check that the menu indicators are flashing. • User program number will appear in the PROGRAM No. display, and the program number will appear in the menu display. Press the Δ or ∇ key to select the user program number which is to be cleared of data. 4478Q
2		Press the RESET key. • The buzzer will sound and the user program with the number selected will be cleared. **Note:** If a cleared user program has been stored as part of a cycle program, the step that involves that user program will become blank. The cycle program itself will not be cleared.
	Clearing all user programs	Press and hold the RESET key for 2 seconds or more. • The buzzer will sound and the all user programs will be cleared. **Note:** If any cycle programs have been memorized, all of the memorized cycle programs will also be cleared.

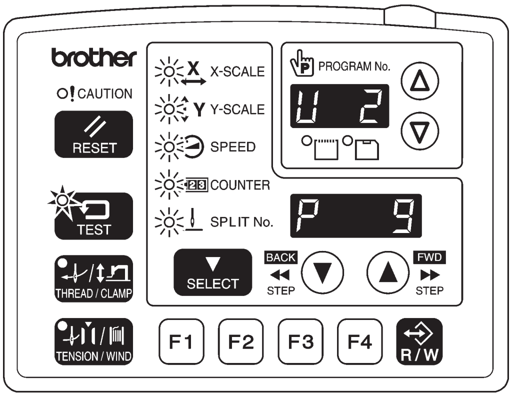
brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
U 1
P 5
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R/W
TEST
SELECT
RESET

6-7. Using cycle programs

Sewing patterns that have been recorded in user programs can be recorded in up to nine cycle programs (C-1 to C-9).
One cycle program can contain up to a maximum of fifteen steps.
When sewing the sewing patterns in numerical order, it can be useful to record them in a cycle program beforehand.
Cycle programs are enabled when memory switch nos. 400 and 401 are set to "ON".

<Recording the cycle programs>

1 **Switch to user program recording mode.**


brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
U 2
P 9
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R / W

TEST indicator lights
Menu indicators flash

While pressing the TEST key, press the SELECT key.

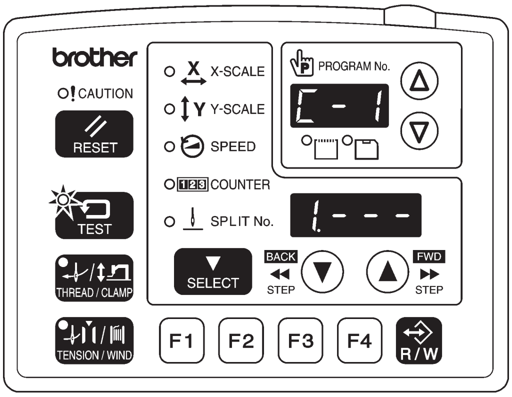
TEST
SELECT

- Check that the menu indicators are flashing.
- User program number will appear in the PROGRAM No. display, and the program number will appear in the menu display.

Record the sewing patterns into a user program so that they can be recorded in a cycle program.

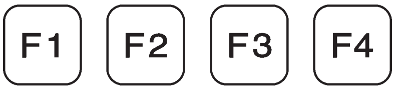
4481Q

2 **Switch to cycle program recording mode, and select the cycle program number.**


brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
C - 1
1. - - -
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R / W

Menu indicators switch off

Press a function key from F1 to F4.

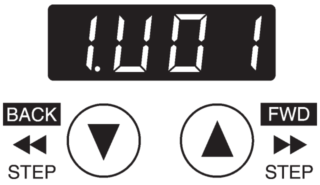


- Cycle program number will appear in the PROGRAM No. display, and “ 1. - - - ” will appear in the menu display.

Press a function key from F1 to F4, or press the Δ or ∇ key to select a cycle program number.

4428Q

3 **Set the step 1.**


1.U0 1
BACK
STEP
FWD
STEP

Press the ▲ or ▼ key to set the program number that you would like to record.

Press the SELECT key.

4444Q

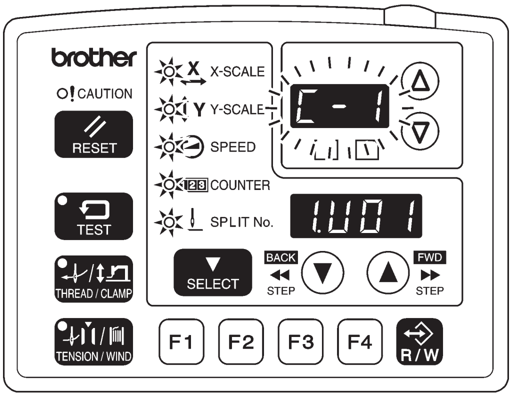
4 **Set the rest of the steps in the same way from step 2 onward.**
From step 9 onward, "A.---", "b.---", "c.---", "d.---", "E.---" and "F.---" will be displayed.

If you would like to return to a previous step during the setting procedure
<For cycle programs C-1 to C-4>
1. Press the respective function key from F1 to F4 to return to the display for step 1.
2. Press the SELECT key until the desired step is reached.

<For cycle programs C-5 to C-9>
1. Press the Δ or ∇ key to change the cycle program number.
2. Select the desired cycle program number again, and then press the SELECT key until the desired step is reached.

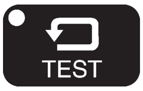
5 **To record another cycle program, repeat steps 2 to 4.**

6 **End cycle program recording mode.**


brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
C - 1
1.U0 1
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R / W

TEST indicator switches off
Menu indicators light

Press the TEST key.

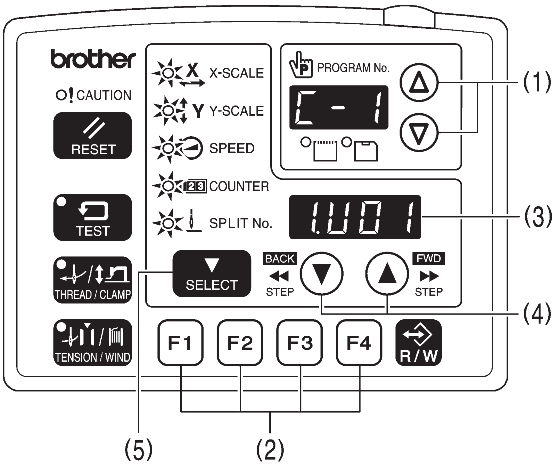


This completes the recording of cycle programs.

- The cycle program number will flash in the PROGRAM No. display, and the sewing machine will switch to home position detection standby.

4439Q

<Using a cycle program>


brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
C - 1
1.U0 1
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R / W
(1)
(3)
(4)
(5)
(2)

4442Q

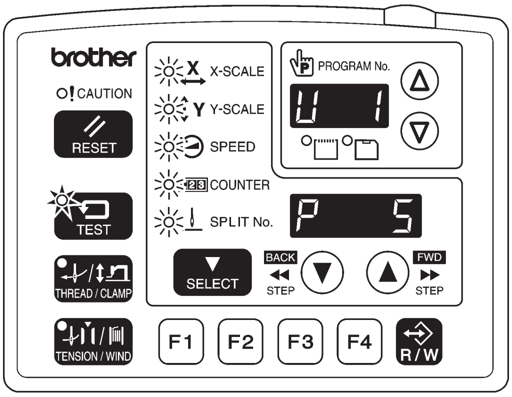
1. Press the Δ or ∇ key (1) to select the cycle program number that you would like to use.
    - If the cycle program number is flashing, depress the foot switch to move the feed mechanism to the home position. After this, it is not necessary to detect the home position until the next time the power is turned off and back on, even if you change the cycle program number.
    - The cycle program number can be selected directly by pressing function keys F1 to F4 (2). (Refer to “6-8. Direct selection”.)
2. Check that the needle drop position is correct, and then start sewing. (Refer to “5-5./5-6 Checking the sewing pattern”.)
3. The recorded user program will be sewn step by step, and when the final step is complete, the menu display (3) will return to showing step 1.

- If you press the ▲ or ▼ key (4), you can return to the previous step or skip to the next step respectively. (You do not need to carry out home position detection again.)
- If you press the SELECT key (5), you can check the details (such as X-scale, Y-scale and sewing speed) of the user program for the displayed step. The setting cannot be changed at this time.

Note:
If cycle program sewing mode is active (when memory switch no. 401 is “ON”) but no cycle programs have been recorded, the user programs will be sewn in numeric order.
“C-0” will appear in the PROGRAM No. display at this time.

< Clearing a cycle program>

1


brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
U 1
P 5
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R / W

TEST indicator lights
Menu indicators flash

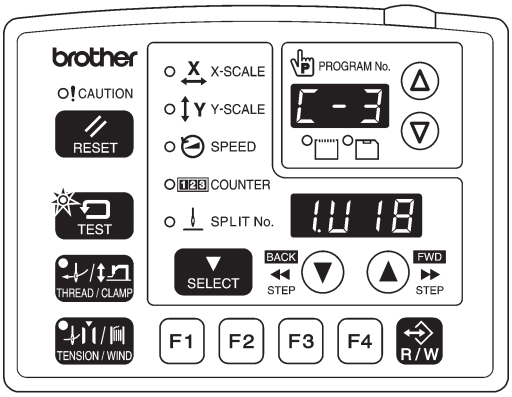
4478Q

While pressing the TEST key, press the SELECT key.

TEST
SELECT

- Switch to user program recording mode. Check that the menu indicators are flashing.

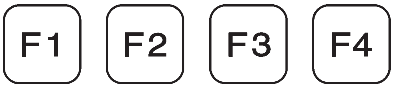
2


brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
C - 3
1.U 18
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R / W

Menu indicators switch off

4450Q

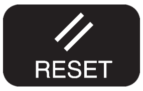
Press a function key from F1 to F4.



- Switch to cycle program recording mode.

Press a function key from F1 to F4, or press the Δ or ∇ key to select the cycle program number to be cleared.

3



Press the RESET key.

- The buzzer will sound and the cycle program with the number selected will be cleared.

Clearing all cycle programs

Press and hold the RESET key for 2 seconds or more.

- The buzzer will sound and the all cycle programs will be cleared.

Note:

If you clear all user programs after any cycle programs have been recorded, all recorded cycle programs will also be cleared.

6-8. Direct selection

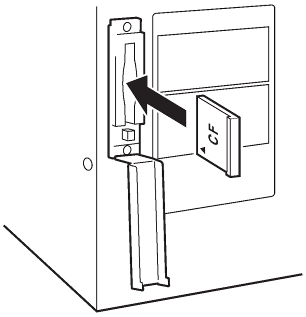
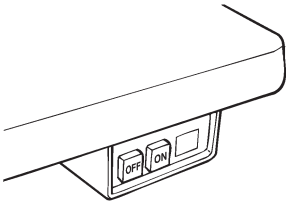
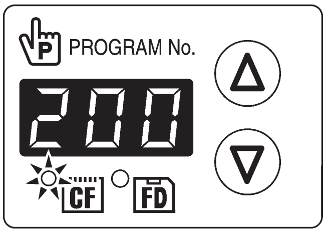
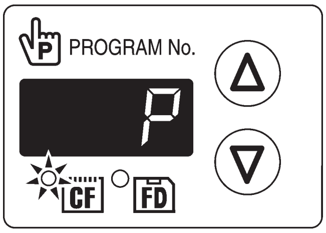
You can use the function keys to directly select user program numbers and cycle program numbers.
U1 to U4 and C-1 to C-4 can be selected using function keys F1 to F4.
U5 to U10 and C-5 to C-9 can be selected by simultaneously pressing combinations of function keys F1 to F4 (addition).

<Key combination table>

U5 / C-5	U6 / C-6	U7 / C-7
F1 + F4 Or F2 + F3	F2 + F4 Or F1 + F2 + F3	F3 + F4 Or F1 + F2 + F4
U8 / C-8	**U9 / C-9**	**U10**
F1 + F3 + F4	F2 + F3 + F4	F1 + F2 + F3 + F4

6-9. Loading additional sewing data

Use a CF card with a memory capacity of 32, 64, 128 or 256 MB.
This product is compatible with CF cards that have been formatted using the FAT16 method. Cards that have been formatted using the FAT32 method cannot be used.

1		With the power turned off, insert the CF card into the CF slot. **Note:** • Make sure the CF card is facing the correct way. • The cover should be closed at all times except when the CF card is inserted and removed, otherwise dust may cause trouble. 4453Q
2	  CF media indicator lights	Turn on the power switch. Press the Δ or ∇ key to select the program number (200 to 999). 4421Q 4457Q
3	 While reading	Press the R/W key. R/W • The buzzer will sound and the selected sewing data will be loaded from the CF card and copied into the sewing machine's internal memory. 4498Q
4	**End reading.**	• The program No. display will change from " P" to the selected program number.

CF^{TM} is a trademark of SanDisk Corporation.

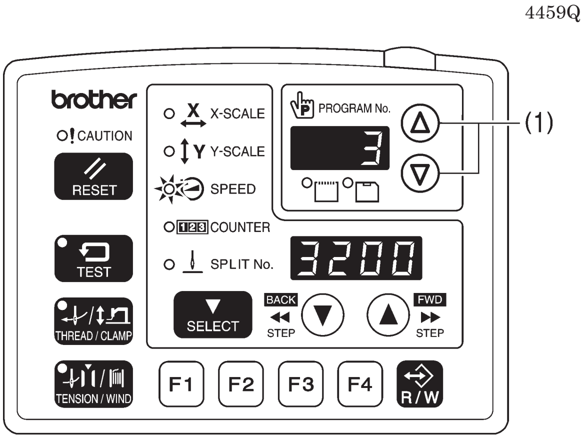
7. SEWING

CAUTION

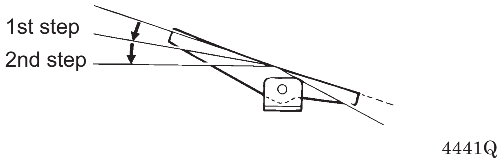
Turn off the power switch at the following times, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.

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

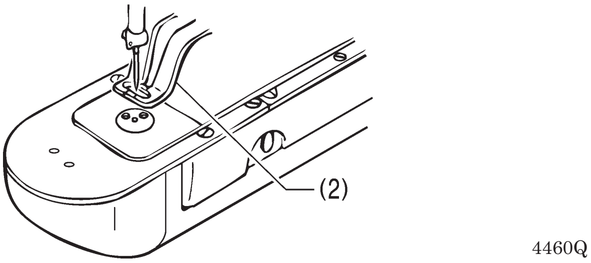
Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.

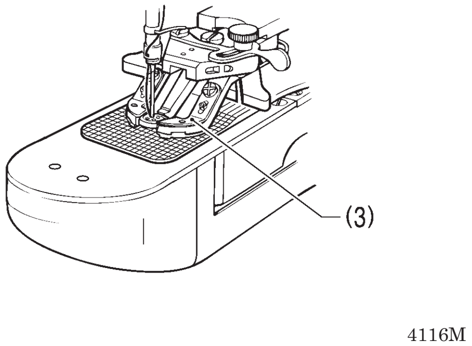

4459Q
brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
3
3200
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R / W
(1)

1. Turn on the power switch.
2. Press the Δ or ∇ key (1) to select the number for the program to be sewn.


1st step
2nd step
4441Q

3. Depress the foot switch to the 2nd step.
   The feed mechanism will move to the home position.





4. Set the material under the work clamp (2).
   (For the BE-438D, insert the button and place the material under the button clamp (3). (Refer to "4-7. Inserting the button".)
5. Depress the foot switch to the 1st step.
   The work clamp (2) / button clamp (3) will be lowered.
6. Depress the foot switch to the 2nd step.
   The sewing machine will start sewing.

* If memory switch no. 003 is set to "ON", the work clamp (2)/button clamp (3) will drop to the intermediate stop position when the foot switch is depressed to the 1st step, and when it is depressed to the 2nd step, the material will be held and sewing will start.

7. Once sewing is completed and the thread has been trimmed, the work clamp (2) / button clamp (3) will rise.

8. MAINTENANCE

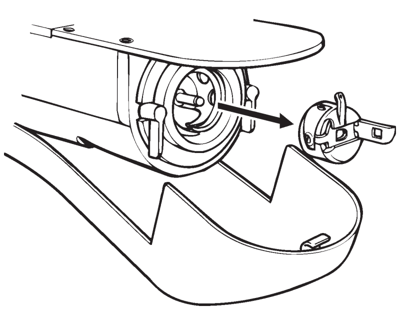
CAUTION

Turn off the power switch before carrying out cleaning, otherwise the machine may operate if the foot switch is pressed by mistake, which could result in injury.

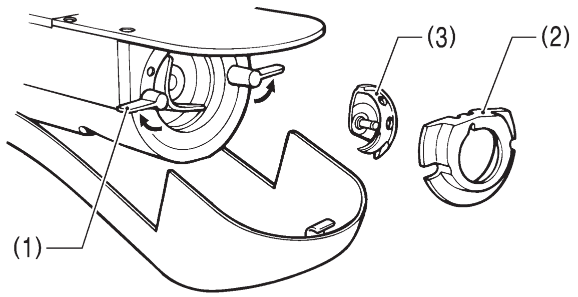
Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result.
Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea.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

8-1. Cleaning the rotary hook

4461Q

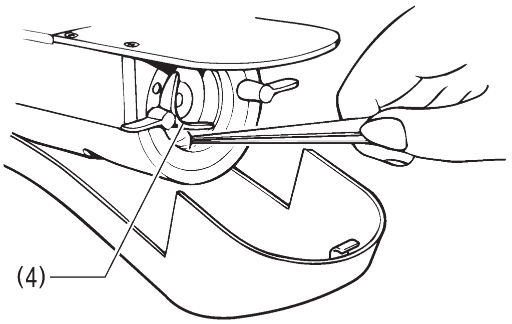


1. Pull the shuttle race cover downward to open it, and then remove the bobbin case.



4462Q

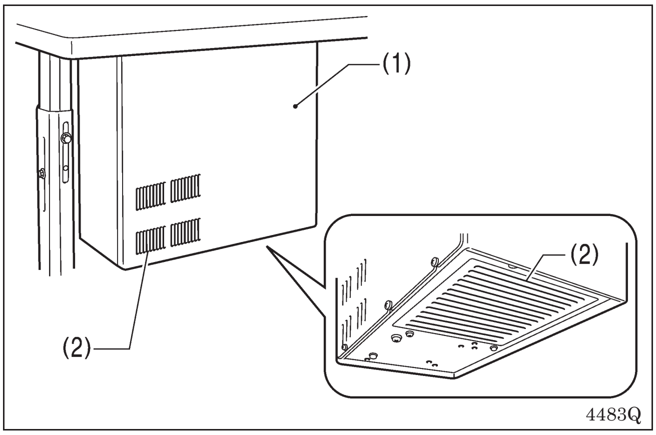
2. Open the setting claw (1) in the direction indicated by the arrow, and then remove the shuttle race base (2) and the shuttle hook (3).



4482Q

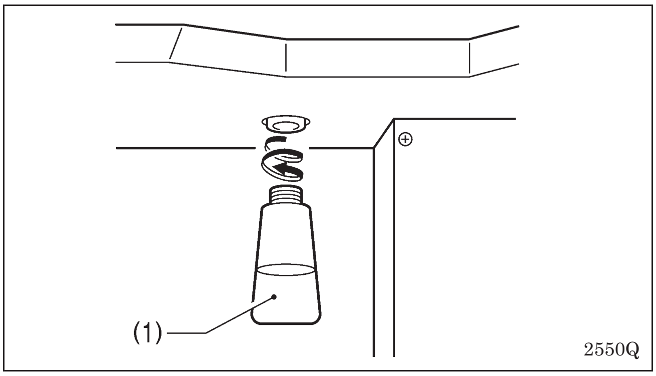
3. Clean all the dust and thread ends from around the driver (4), the top of the rotary hook thread guide and the shuttle race.

8-2. Cleaning the control box air inlet ports



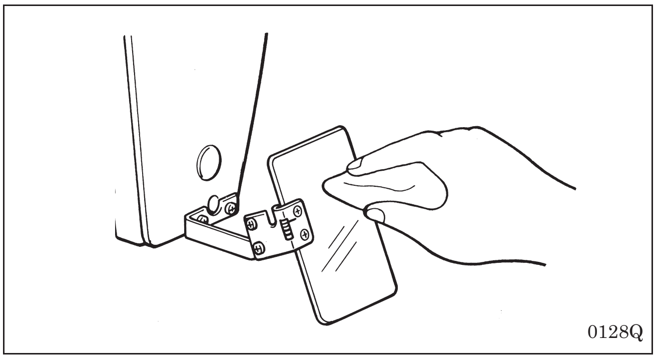
Use a vacuum cleaner to clean the filter in the air inlet ports (2) of the control box (1) at least once a month.

8-3. Draining the oil



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

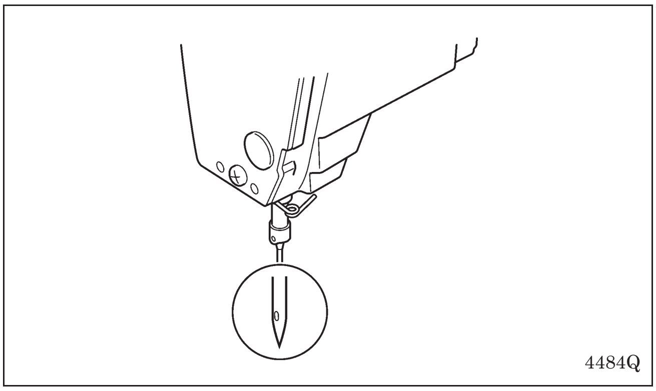
8-4. Cleaning the eye guard



Wipe the eye guard clean with a soft cloth.

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

8-5. Checking the needle

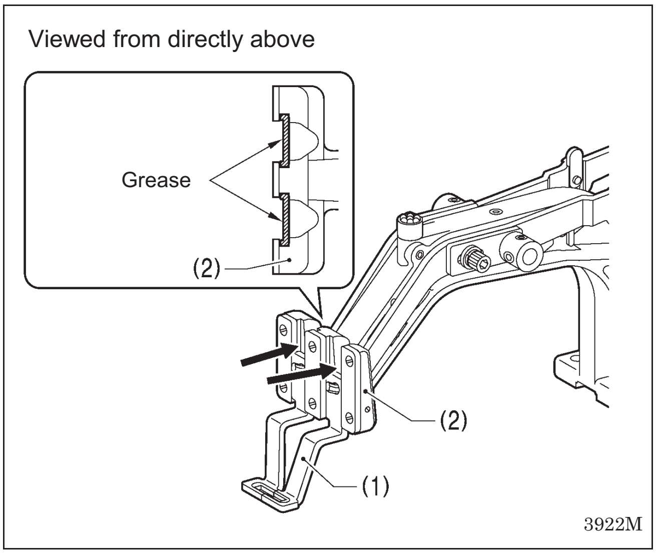


Always check that the tip of the needle is not broken and also the needle is not bent before starting sewing.

8-6. Lubrication

Carry out the lubrication referring to “3-13. Lubrication”.

8-7. Applying grease (Work clamp: KE-430D)


Viewed from directly above
Grease
(2)
(2)
(1)
3922M

Periodically apply grease to the sliding parts of the work clamp (1) and the work clamp arm (2).

Note:

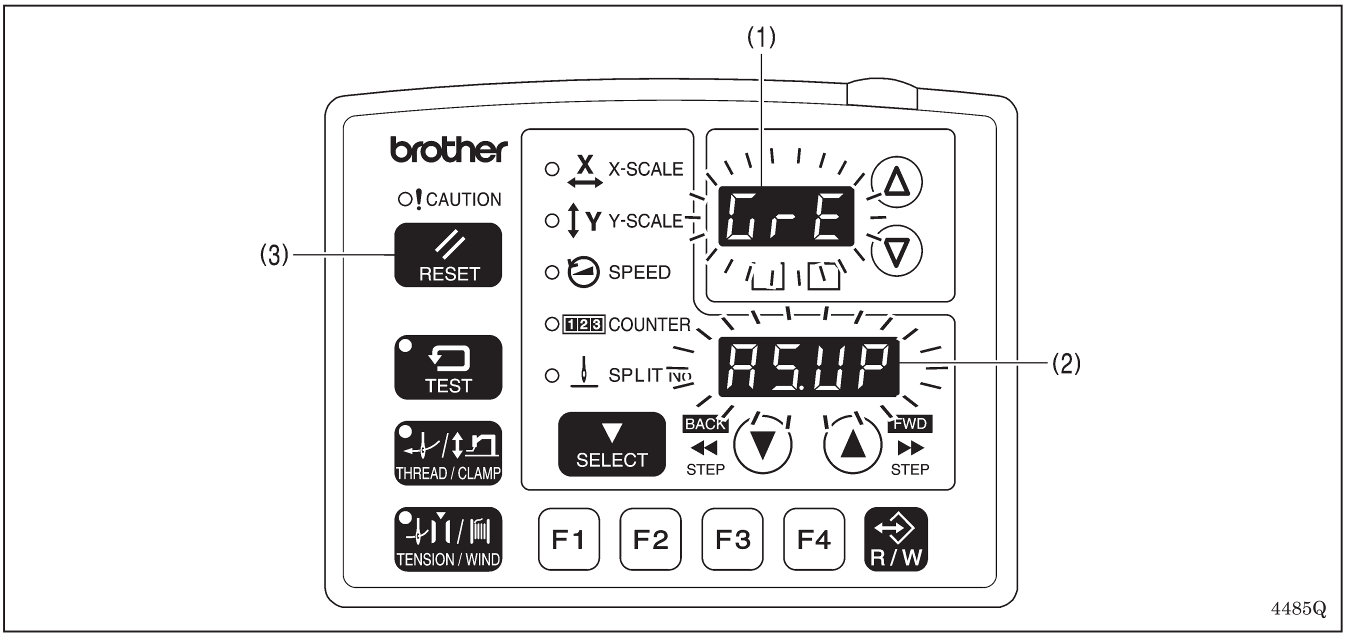
After replacing the work clamp (1), be sure to apply grease before using it.

* It is recommended that you use commercially-available NIPPON OIL CORPORATION Powernoc WB 2 grease for the work clamp (1).

8-8. Applying grease (When “GREASEUP” appears)

If “GrE” and “AS.UP" flash on the PROGRAM No. display (1) and the menu display (2) respectively, and a buzzer sounds when the power switch is turned on, it means that grease needs to be applied. (The sewing machine will not operate at this time, even if the foot switch is depressed.)

Apply grease as required, while referring to the following for details.


(1)
(2)
(3)
brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT
NO
GrE
AS.UP
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R / W
4485Q

<To continue sewing temporarily without applying grease>

1. Press the RESET key (3).
2. The PROGRAM No. display (1) and the menu display (2) will change to the normal displays, and sewing can be carried out by depressing the foot switch.

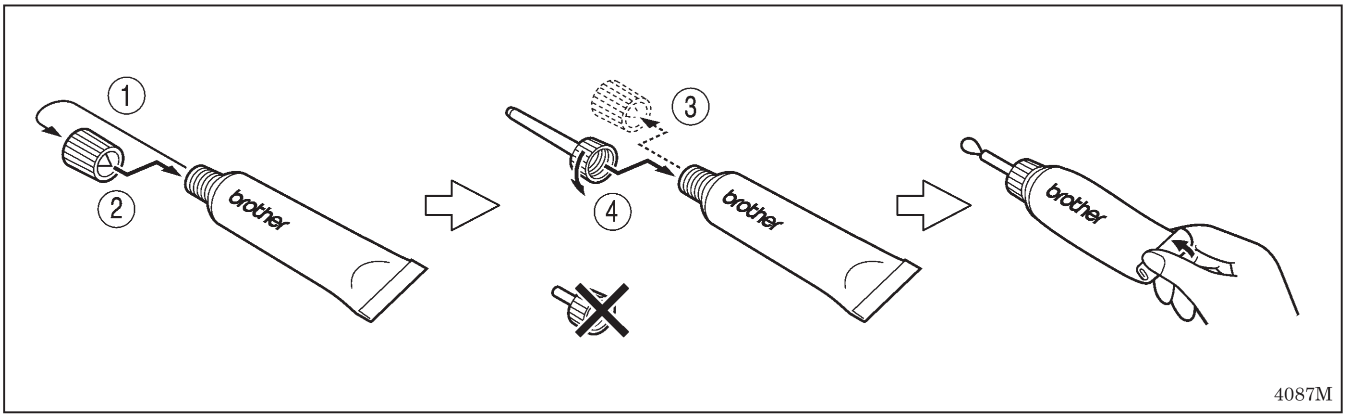
Note:

- "GrE" and "AS.UP" will continue to be displayed each time the power is turned on until grease is applied and the notification is reset by carrying out the procedure on page 54.
- If you continue to use the sewing machine after the “GrE” and “AS.UP" notification appears without applying grease (or without carrying out the reset procedure), “E100” will appear after a certain period of time and the sewing machine will be forcibly prevented from operating for safety reasons.
  If this happens, apply grease and carry out the reset procedure.

*** If you continue to use the sewing machine after carrying out the reset procedure but without applying grease, problems with the sewing machine may result.**

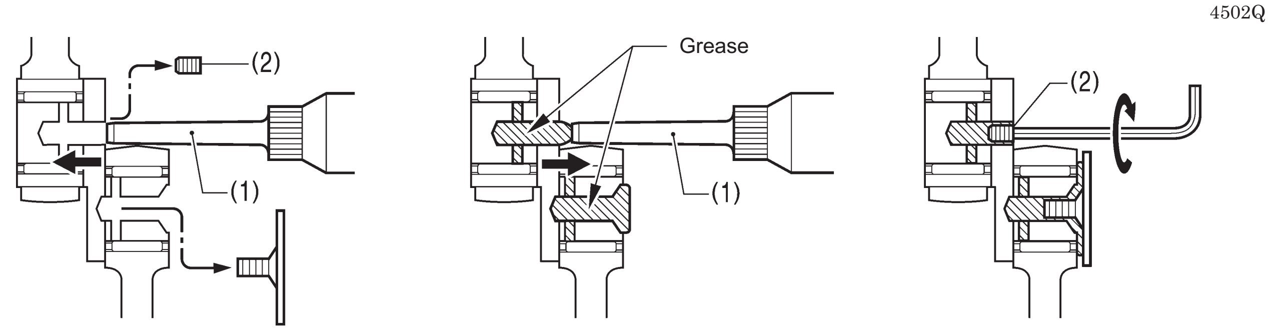
<Applying grease>
Use Brother-specified “Grease unit (SA8837-001)”.

1. Using the tube



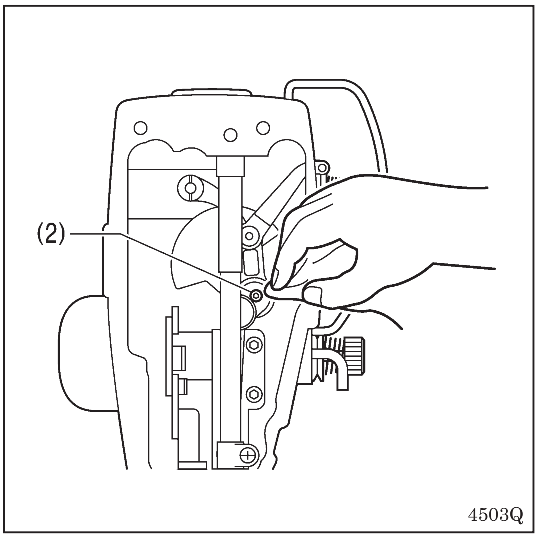
2. Applying grease

Follow the procedure below to apply grease to the places indicated by arrows on the following page.



Insert the tip of the tube (1) into the hole.	While pushing the nozzle (1), squeeze the tube to apply grease to each hole.	Tighten the screw (2) to push in the grease.

1. Turn off the power switch.
2. Remove the screw (2). (Refer to the following page for greasing locations.)
3. While turning the machine pulley by hand to move the needle bar up and down, apply grease to each hole until the grease overflows slightly.
4. Tighten the screw (2) to push in the grease.



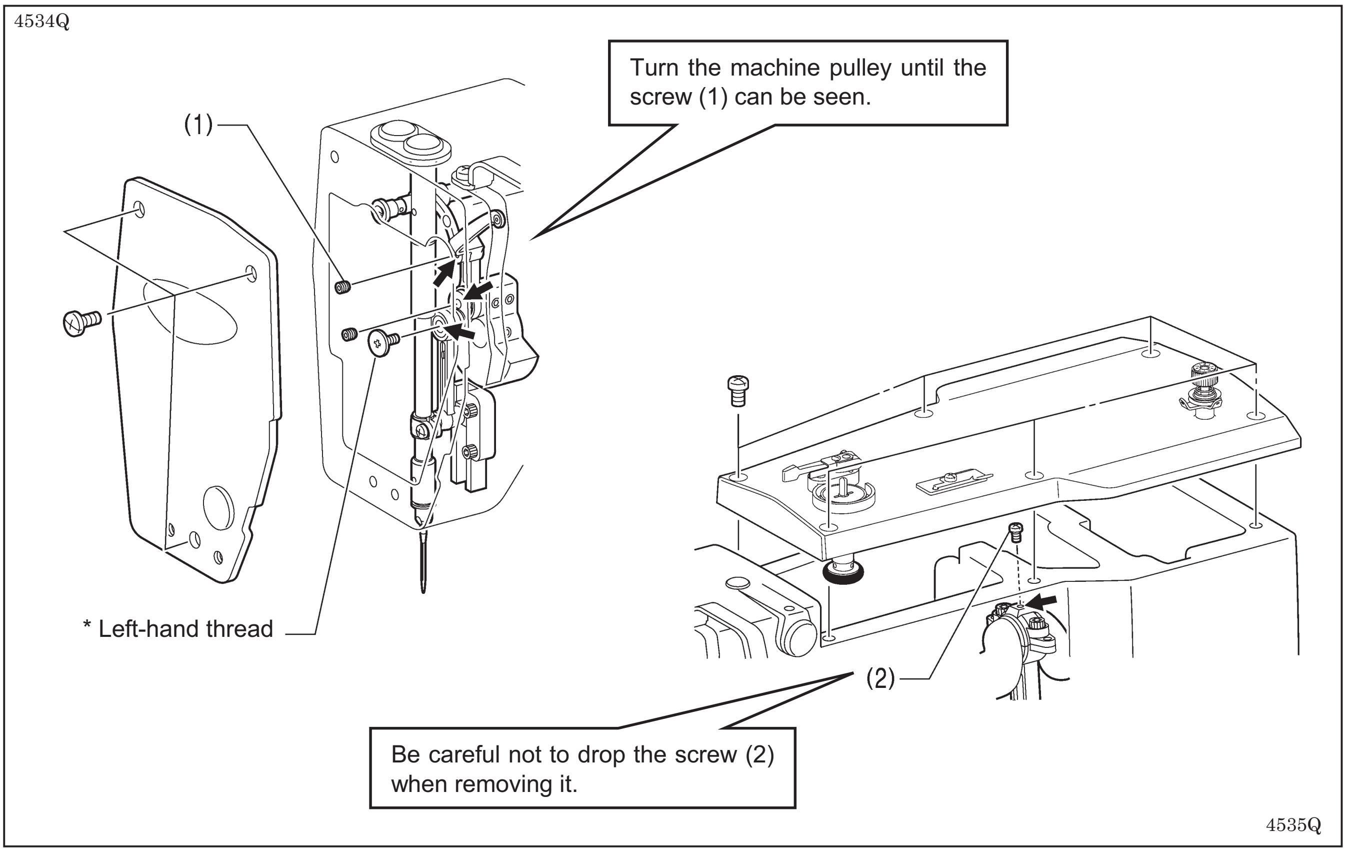
5. Turn the machine pulley by hand to move the needle bar up and down several times in order to disperse the grease.
6. Use a cloth to wipe away any excess grease from around the screw (2).
7. Apply grease to all locations shown on the following page in the same way.
8. After this, carry out the reset procedure given on the following page.

Note:

- Once the grease tube has been opened, remove the nozzle from the tube, attach the cap securely and store the tube in a cool dark place.
- The grease should be used as quickly as possible.
- When using the grease again, remove any old grease from inside the nozzle first.

(Store the tube away carefully once the tube has been opened, otherwise the grease remaining inside the tube may deteriorate, and this may affect its lubricating performance.)

<Grease application locations>

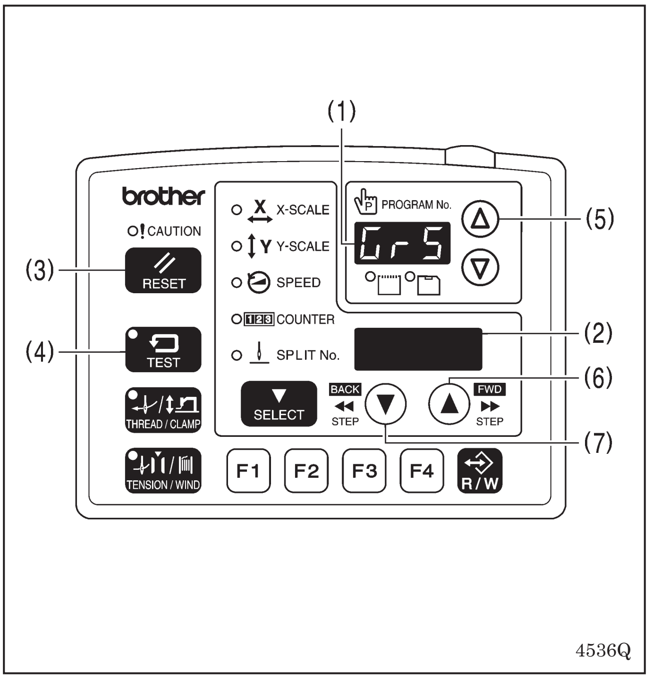

4534Q
(1)
(2)
4535Q

Turn the machine pulley until the screw (1) can be seen.

* Left-hand thread

Be careful not to drop the screw (2) when removing it.

<Resetting the grease up counter>


(1)
(2)
(3)
(4)
(5)
(6)
(7)
brother
CAUTION
RESET
TEST
THREAD / CLAMP
TENSION / WIND
X-SCALE
Y-SCALE
SPEED
COUNTER
SPLIT No.
PROGRAM No.
Gr S
SELECT
BACK
STEP
FWD
STEP
F1
F2
F3
F4
R/W
4536Q

Once the grease has been applied, follow the procedure below to reset the cumulative number of stitches between grease applications.

1. Turn on the power switch. "GrE" and "AS.UP" will flash in the program No. display (1) and the menu display (2) and the buzzer will sound.
2. Press the RESET key (3). The program No. display (1) and the menu display (2) will return to their normal displays.
3. While pressing the TEST key (4), press the Δ key (5). "GrS" will appear in the program No. display (1), and the cumulative number of stitches until greasing is required will appear in the menu display (2) in units of 100,000 stitches.
   (The number of stitches will be displayed in all seven digits of the program No. display (1) and menu display (2) in units of 100 stitches while the ▲ key (6) is being pressed.)
4. Press the ▼ key (7). The cumulative number of stitches will be reset to "0000".
5. Press and hold the RESET key (3) for 2 seconds or more. (This completes the reset procedure.)
6. When you press the TEST key (4), the displays will return to their normal displays.

9. TABLE 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 face plate of the control box. Touching areas where high voltages are present can result in severe injury.

If a malfunction should occur with the sewing machine, a buzzer will sound and an error code will appear in the display window. Follow the remedy procedure to eliminate the cause of the problem.

Switch-related errors

Code	Cause and remedy
E025	Foot switch is depressed to the 2nd step. Turn off the power and check the foot switch.
E035	Foot switch is depressed to the 1st step. Turn off the power and check the foot switch.
E050	Machine head tilting was detected after the power was turned on. Turn off the power, and then return the machine head to its original position. Check that connector P8 on the main P.C. board is properly connected.
E051	Machine head tilting was detected while the sewing machine was operating. Turn off the power, and then check that connector P8 on the main P.C. board is properly connected.
E055	Machine head tilting was detected when the power was turned on. Turn off the power, and then return the machine head to its original position. Check that connector P8 on the main P.C. board is properly connected.
E065	An operation panel key was still being pressed when the power was turned on, or key is faulty. Turn off the power and check the operation panel.

Upper shaft motor-related errors

Code	Cause and remedy
E100	Sewing machine has continued to be used for a certain period after the “GREASEUP” notification appears without the grease being applied (without the reset procedure being carried out). Apply grease and then carry out the reset procedure. (Refer to the service manual for the reset procedure.)
E110	Needle up stop position error. Turn the pulley to align the index mark with the needle up stop position.
E111	Upper shaft did not stop at the needle up stop position when the sewing machine stopped. Turn the pulley to align the index mark with the needle up stop position.
E120	Needle drop signal could not be detected. Turn off the power, and then check the synchronizer connection.
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	Sewing machine motor stopped abnormally or synchronizer is not connected correctly. Turn off the power, and then turn the machine pulley to check if the machine has locked up. Check that connectors P4 and P5 on the power supply motor P.C. board are properly connected.
E131	Synchronizer is not connected correctly. Turn off the power, and then check that connector P5 on the power supply motor P. C. board is properly connected.
E132	Problem detected with sewing machine motor operation. Turn off the power, and then check that connector P4 on the power supply motor P.C. board is properly connected.
E133	Sewing machine motor stopping position is incorrect. Turn off the power, and then check that connector P5 on the power supply motor P.C. board is properly connected.
E150	Sewing machine motor is overheating, or temperature sensor is faulty. Turn off the power, and then check the sewing machine 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 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 connector P10 on the PMD P.C. board and connector P2 on the main P.C. board are properly connected.
E201	X feed motor stopped abnormally. Turn off the power and check that there is no problem with the X feed direction.
E202	Problem with X feed motor or Y feed motor home position adjustment data. Re-adjust the home position.
E204	X feed motor stopped abnormally during sewing. Turn off the power and check that there is no problem with the X feed direction.
E205	X feed motor stopped abnormally while moving to the sewing start position. Turn off the power and check that there is no problem with the X feed direction.
E206	X feed motor stopped abnormally during test feeding. Turn off the power and check that there is no problem with the X feed direction.
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 connector P8 on the PMD P.C. board and connector P3 on the main P.C. board are properly connected.
E211	Y feed motor stopped abnormally. Turn off the power and check that there is no problem with the Y feed direction.
E214	Y feed motor stopped abnormally during sewing. Turn off the power and check that there is no problem with the Y feed direction.
E215	Y feed motor stopped abnormally while moving to the sewing start position. Turn off the power and check that there is no problem with the Y feed direction.
E216	Y feed motor stopped abnormally during test feeding. Turn off the power and check that there is no problem with the Y feed direction.

Work clamp-related errors

Code	Cause 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 connector P3 on the PMD P.C. board and connector P4 on the main P.C. board are properly connected.
E301	Work clamp raised or lowered position cannot be detected. Turn off the power, and check that there is no problem with the vertical work clamp position.
E303	Problem with work clamp motor home position adjustment data. Re-adjust the home position.

Communication and memory-related errors

Code	Cause and remedy
E401	Connection communication error with power supply motor P. C. board detected when power was turned on. Turn off the power, and then check that connector P6 on the power supply motor P.C. board and connector P14 on the main P.C. board are properly connected.
E403	Connection error with PMD P. C. board detected when power was turned on. Turn off the power, and then check that connector P1 on the PMD P.C. board is properly connected.
E410	Communication error with main P. C. board detected. Turn off the power, and then turn it back on again.
E411	Communication error with power supply motor P. C. board detected. Turn off the power, and then turn it back on again.
E413	Communication error with PMD P. C. board detected. Turn off the power, and then turn it back on again.
E420	No CF card is inserted.
E421	The program number is invalid or it has no corresponding data. Change the program number.
E422	Error occurred while reading CF card. Check the data on the CF card.
E424	Insufficient free space on CF card. Use a different CF card.
E425	Error occurred while writing to CF card. Use the specified type of CF card.
E426	R/W key has not been pressed. Press the R/W key to load the data.

(Continued on next page)

Code	Cause and remedy
E430	Data cannot be backed up to main P.C. board. Turn off the power, and then turn it back on again.
E440	Data memory error on main P.C. board. Turn off the power, and then turn it back on again.
E450	Model selection has not been loaded from the machine head memory. Turn off the power and check that connector P3 on the power supply motor P.C. board is properly connected.
E451	Data cannot be backed up to machine head memory. Turn off the power, and then turn it back on again.
E452	Machine head memory is not connected. Turn off the power, and then check that connector P3 on the power supply motor P.C. board is properly connected.
E474	Internal memory is full and copying is not possible. Clear the sewing data.

Data editing-related errors

Code	Cause and remedy
E500	The enlargement ratio setting caused the sewing data to extend outside the sewing area. Set the enlargement ratio again.
E501	Sewing data that exceeds the sewing machine's sewing area was loaded. Check the size of the sewing data.
E502	The enlargement ratio caused the data pitch to exceed the maximum pitch of 12.7 mm. Set the enlargement ratio again.
E510	Invalid code in sewing data. For additional data, re-read the data from the CF card.
E511	No end code has been input into sewing data. Input an end code, or change the program number.
E512	Number of stitches exceeds allowed maximum.
E530	Changing program number is prohibited.

Device-related errors

Code	Cause and remedy
E690	Thread nipper home position error. Turn off the power, and then clean underneath the needle plate to remove any dust and thread scraps. Check that connector P12 on the main P.C. board is properly connected.
E691	Thread nipper retract position error. Check if the upper thread trailing length is too long. Turn off the power, and then clean underneath the needle plate to remove any dust and thread scraps. Check that connector P12 on the main P.C. board is properly connected.

P.C. board-related errors

Code	Cause and remedy
E700	Abnormal rise in power supply voltage. Turn off the power and check the input voltage.
E705	Abnormal drop in power supply voltage. Turn off the power and check the input voltage.
E710	Abnormal current detected in sewing machine motor. Turn off the power, and then check if there are any problems with the sewing machine.
E711	Abnormal current detected in X-feed motor. Turn off the power, and then check if there are any problems in the X-feed direction.
E712	Abnormal current detected in Y-feed motor. Turn off the power, and then check if there are any problems in the Y-feed direction.
E713	Abnormal current detected in work clamp motor. Turn off the power, and then check if there are any problems with the X-feed mechanism, Y-feed mechanism or work clamp lifter.
E740	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 P18 on the main P.C. board is properly connected.

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.

INSTRUCTION MANUAL

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KE-430D, BE-438D
SA3390-501
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