

# HLK-430 HLB-430

使用说明书  
MANUAL DE INSTRUCCIONES

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ELECTRONIC DIRECT DRIVE LOCKSTITCH BAR TACKER  
ELECTRONIC DIRECT DRIVE LOCKSTITCH BUTTON SEWER

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

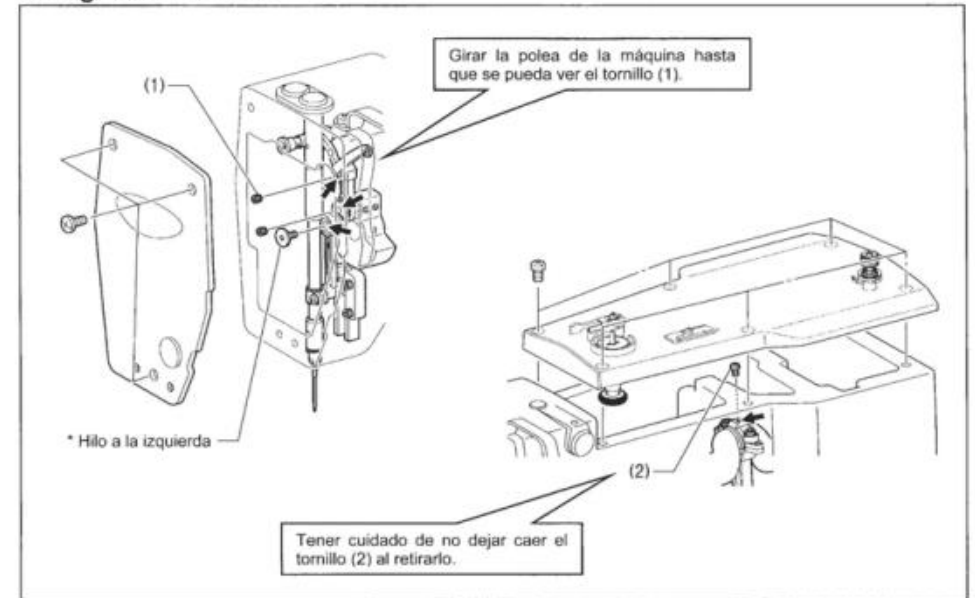
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直接驱动式电脑平缝打结机  
直接驱动式电脑平缝钉扣机

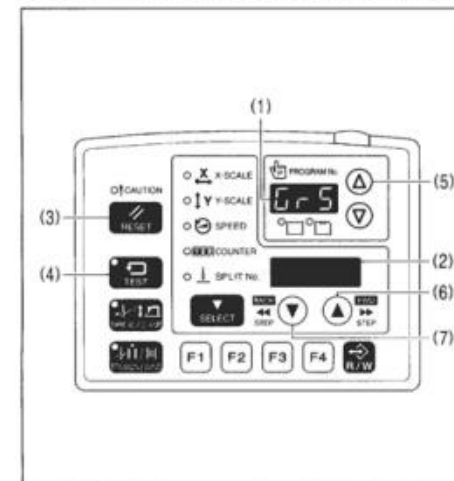
在使用缝纫机之前请先阅读本使用说明书。  
请将本使用说明书放在便于查阅的地方保管。



## 1. Lugares a lubricar



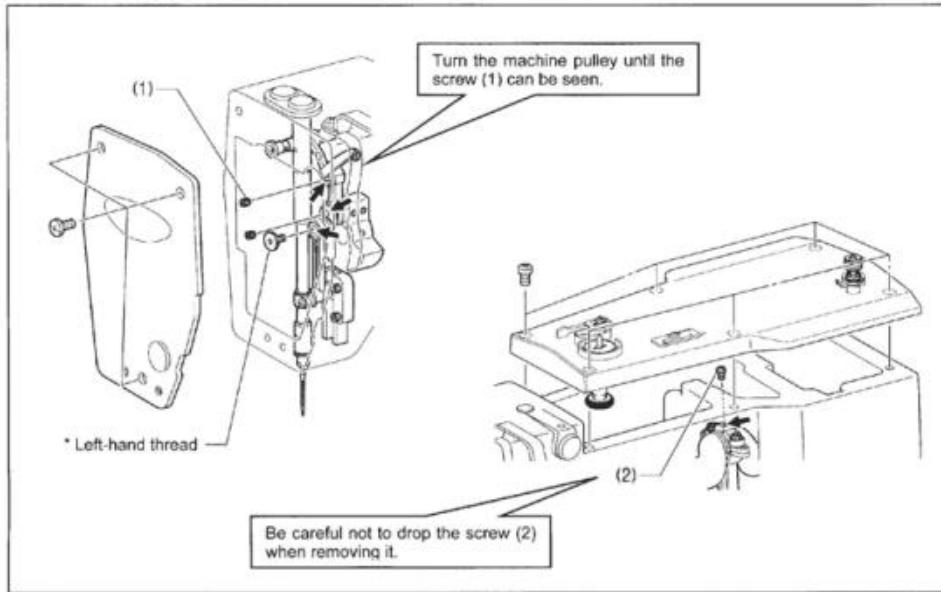
## 2. Reposición del contador de lubricación



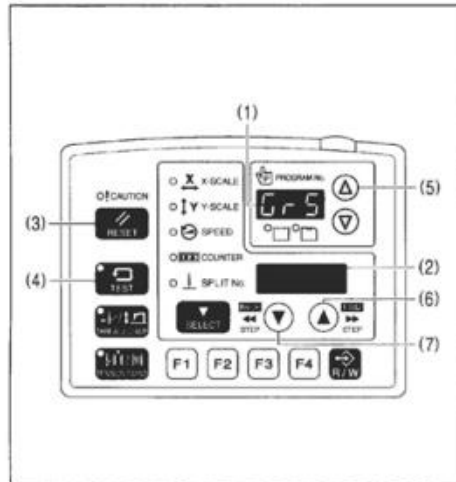
Una vez que se haya lubricado, siga el procedimiento indicado a continuación para reponer el número de puntadas acumuladas entre las lubricaciones.

1. Conectar el interruptor de alimentación. "GrE" y "AS.UP" destellarán en la exhibición PROGRAM No. (1) y en el menú (2) y sonará el zumbador.
2. Presionar la tecla RESET (3). La exhibición PROGRAM No. (1) y el menú (2) volverán a sus exhibiciones originales.
3. Mientras se presiona la tecla TEST (4), presionar la tecla  $\Delta$  (5). Aparecerá "GrS" en la exhibición PROGRAM No. (1), y el número acumulado de puntadas hasta la próxima lubricación aparecerá en el menú (2) en unidades de 100.000 puntadas. (El número de puntadas será exhibido en los siete dígitos de la exhibición PROGRAM No. (1) y el menú (2) en unidades de 100 puntadas mientras se presiona la tecla  $\Delta$  (6).)
4. Pulsar la tecla  $\nabla$  (7). El número de puntadas acumuladas se repondrá a "0000".
5. Presionar y sostiene la tecla RESET (3) durante 2 segundos o más. (De esta manera se completa el procedimiento de reposición.)
6. Cuando se pulse la tecla TEST (4), las exhibiciones volverán a sus estados normales.

## 1. Grease application locations



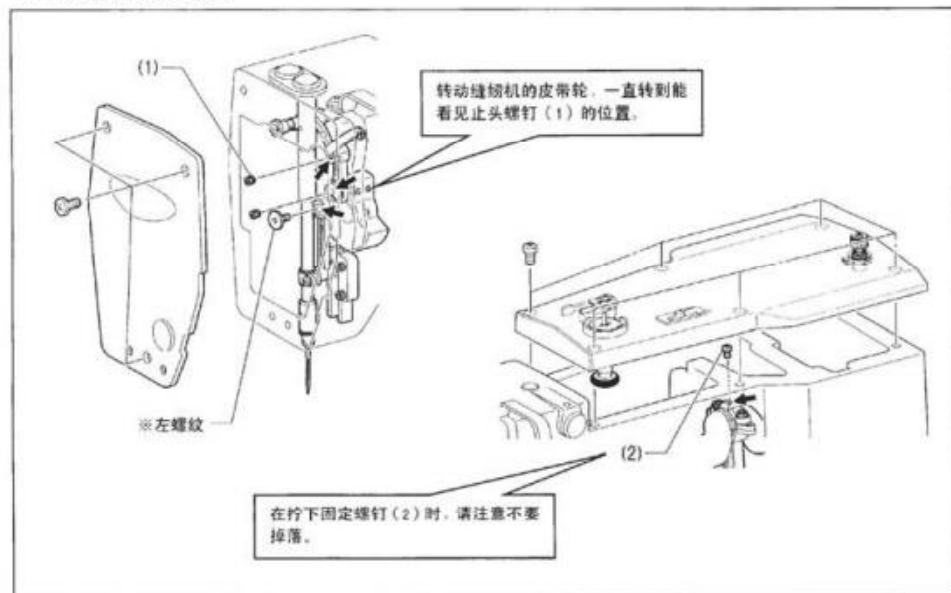
## 2. Resetting the grease up counter



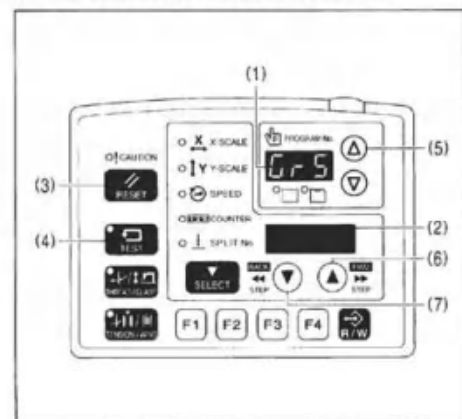
Once the grease has been applied, follow the procedure below to reset the cumulative number of stitches between grease applications.

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 ▲ 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.

## 1. 润滑脂添加部位



## 2. 润滑脂添加计数器的复位方法



在确实添加润滑脂后，按照下述步骤进行复位操作，以清除润滑脂添加前的累计针数。

1. 打开电源。程序号 (No.) 表示 (1) 和菜单表示 (2) 所显示的 "GrE"。"AS, UP" 将闪烁，蜂鸣器鸣响。
2. 按 RESET 键 (3)。程序号 (No.) 表示 (1) 和菜单表示 (2) 将变为通常的显示状态。
3. 在按 TEST 键 (4) 的同时按 ▲ 键 (5)。程序号 (No.) 表示 (1) 将显示 "GrS"。菜单表示 (2) 将以 10 万针为单位显示润滑脂添加前的累计针数。  
(在按着 ▲ 键 (6) 时，程序号 (No.) 表示 (1) 和菜单表示 (2) 将以 100 针为单位显示 7 位的合计值。)
4. 按 ▼ 键 (7)。累计针数显示值变为 "0000"。
5. 按住 RESET 键 (3) 2 秒钟或更长的时间。(复位操作完成。)
6. 如果按 TEST 键 (4)，显示将返回到通常的状态。

# HLK-430

ELECTRONIC DIRECT DRIVE LOCKSTITCH  
BAR TACKER

# HLB-430

ELECTRONIC DIRECT DRIVE LOCKSTITCH  
BUTTON SEWER

Thank you very much for buying a TYPICAL sewing machine.  
instructions below and the explanations given in the instruction ma



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

## SAFETY INSTRUCTIONS




### 1. Safety indications and their meanings

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

#### Indications


 <b>DANGER</b>	The instructions which follow this term indicate situations where failure to follow the instructions will almost certainly result in death or severe injury.
 <b>CAUTION</b>	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 high-frequency welders. Sources of strong electrical noise may cause problems with correct operation.
-  Any fluctuations in the power supply voltage should be within  $\pm 10\%$  of the rated voltage for the machine. Voltage fluctuations which are greater than this may cause problems with correct operation.
-  The power supply capacity should be greater than the requirements for the sewing machine's electrical consumption. Insufficient power supply capacity may cause problems with correct operation.
-  The ambient temperature should be within the range of  $5^{\circ}\text{C}$  to  $35^{\circ}\text{C}$  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.
-  Avoid exposure to direct sunlight during use. Exposure to direct sunlight 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 TYPICAL 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 TYPICAL 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.

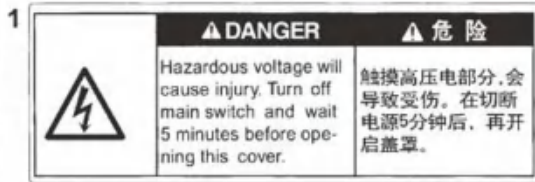
#### Maintenance and inspection

-  Maintenance and inspection of the sewing machine should only be carried out by a qualified technician.
-  Ask your TYPICAL 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 Supreme.
-  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.

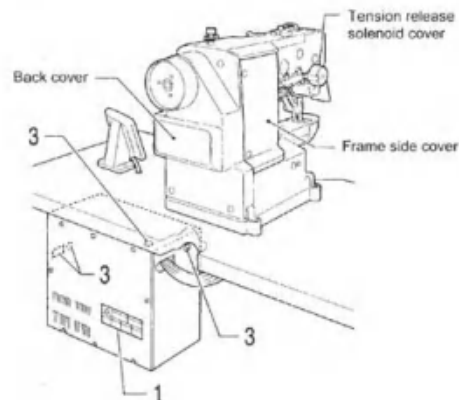
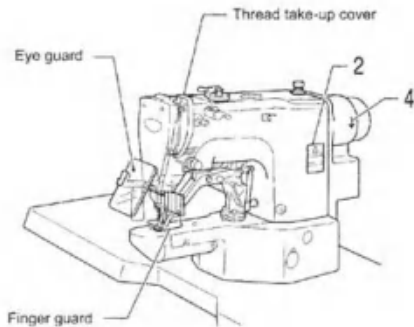


3 PE Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.



4 ↓ Direction of operation

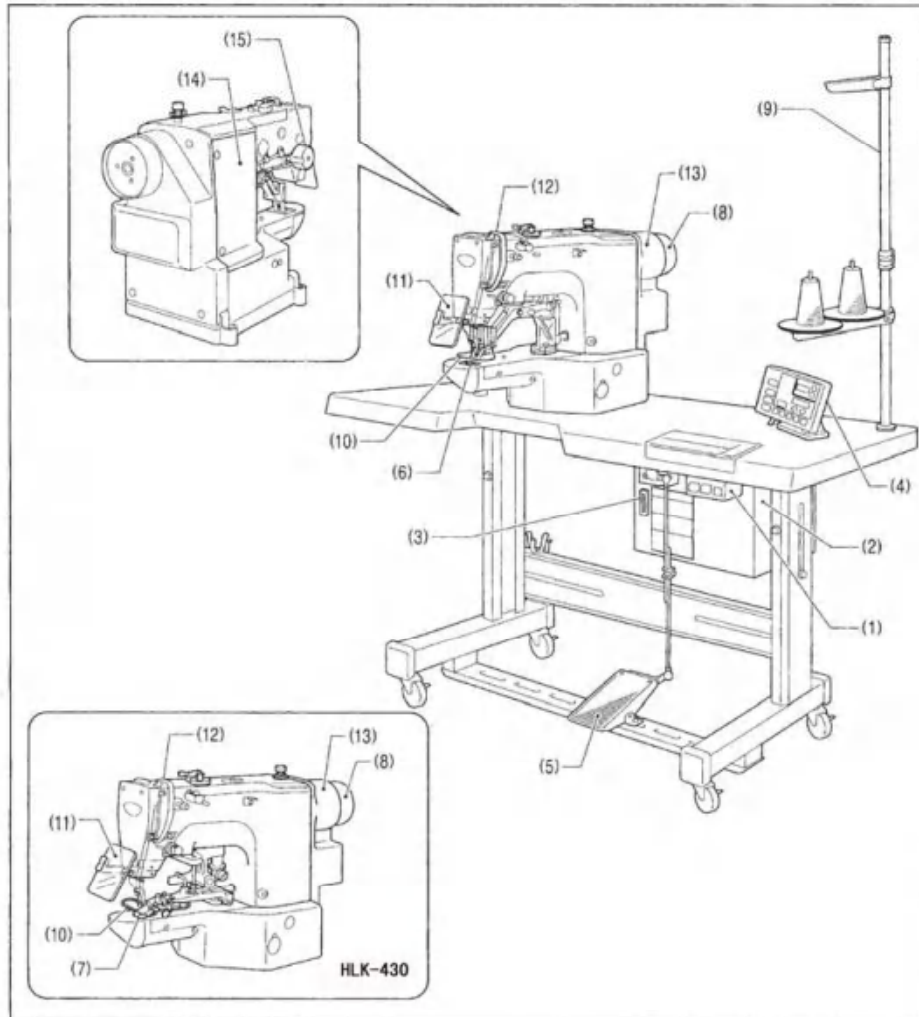
Safety devices  
 Eye guard  
 Finger guard  
 Tension release solenoid cover  
 Thread take-up cover  
 Frame side cover  
 Back cover, etc.



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# 1. NAMES OF MAJOR PARTS

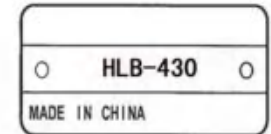
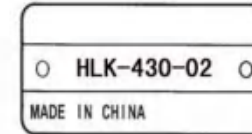
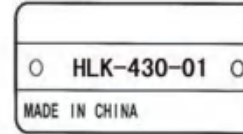


- (1) Power switch
- (2) Control box
- (3) CF slot
- (4) Operation panel
- (5) Foot switch
- (6) Work clamp ( HLK-430 )
- (7) Button clamp ( HLB-430 )
- (8) Pulley
- (9) Cotton stand

- 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

# 2. SPECIFICATIONS

## 2-1. Machine specifications



	HLK-430 Electronic direct drive lockstitch bar tacker	HLB-430 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 (Use the optional button clamp B for diameters of 20 mm or greater.)	
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)	
Number of user programs	50	
Number of cycle programs	9	
Number of stored data	89 sewing patterns are set already	49 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



2. SPECIFICATIONS

2-2. Program list ( HLK-430 )

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 foundation garments (-07)									
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					

2. SPECIFICATIONS

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

## 2. SPECIFICATIONS

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 Supreme 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 ( HLB-430 )

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	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.

## 2. SPECIFICATIONS

No.	No. of button holes	Sewing pattern	No. of threads	No. of crossover stitches	No. of stitches	Sewing size (mm)		
						X	Y	
14	*3		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	4			6-5	1			18
17				8-7	1			22
30		10-9		1	26			
18	4		6-6	1	19	3.4	3.4	
19			8-8	1	23			
31			10-10	1	27			
45			12-12	1	31			
20	*3		6-6	0	24	3.4	3.4	
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		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	4			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.

### 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.



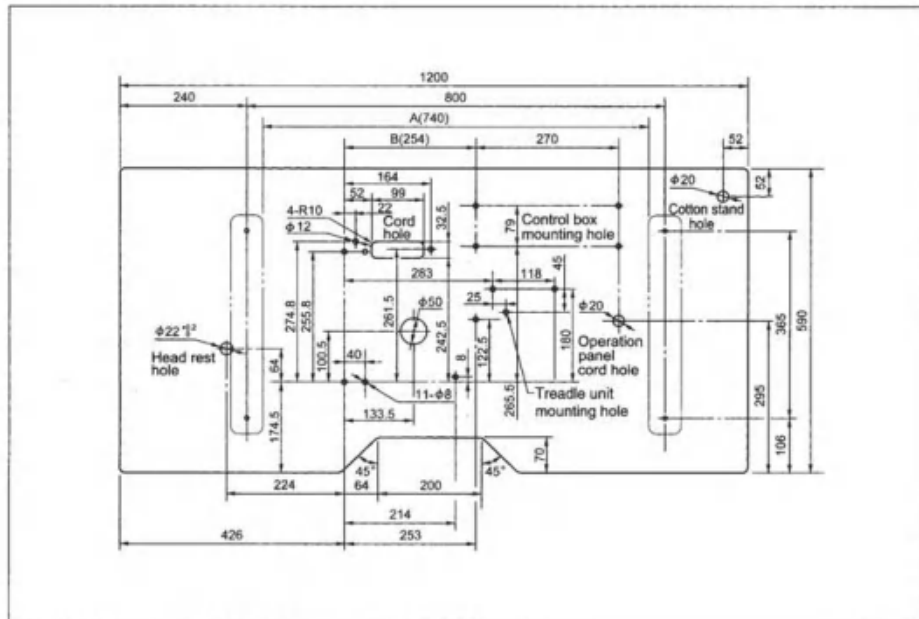
### 3. INSTALLATION

#### CAUTION

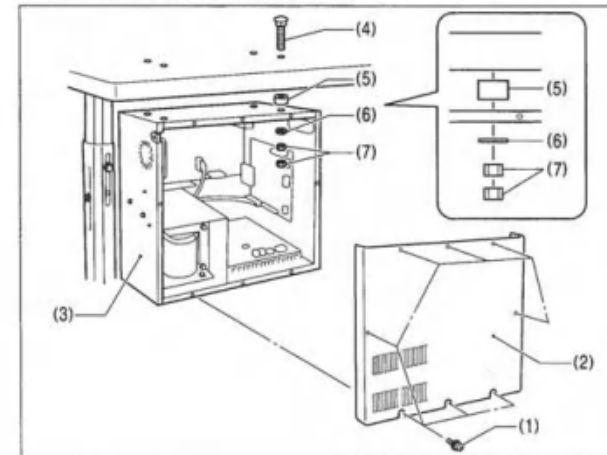
- ⊘ Machine installation should only be carried out by a qualified technician.
- ⚠ Contact your TYPICAL dealer or a qualified electrician for any electrical work that may need to be done.
- ⚠ The sewing machine head weighs approximately 56 kg. The installation should be carried out by two or more people.
- ⊘ 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.

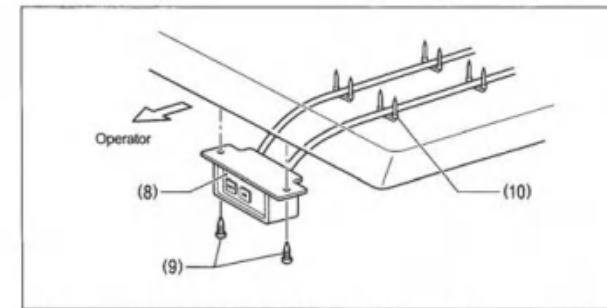


#### 3-2. Installing the control box



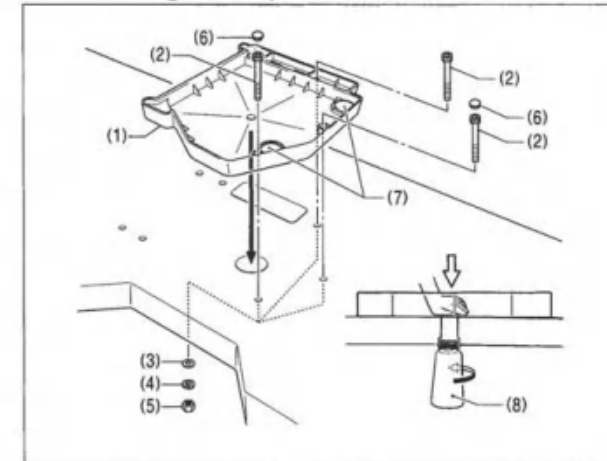
Remove the eight screws (1), and then remove the control box cover (2).

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



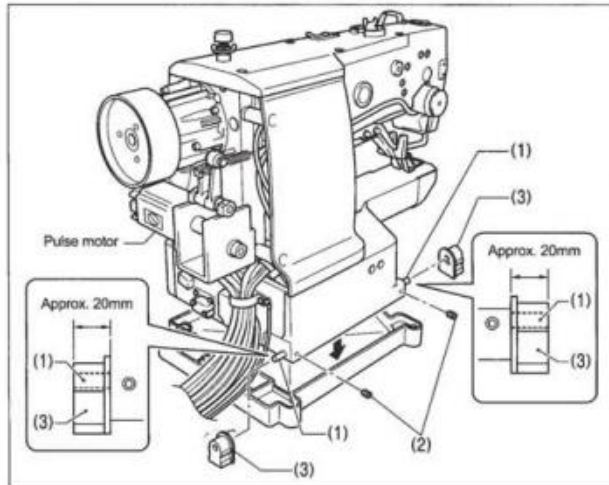
- (8) Power switch
- (9) Wood screws [2 pcs]
- (10) Staples [4 pcs]

#### 3-3. Installing the oil pan



- (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

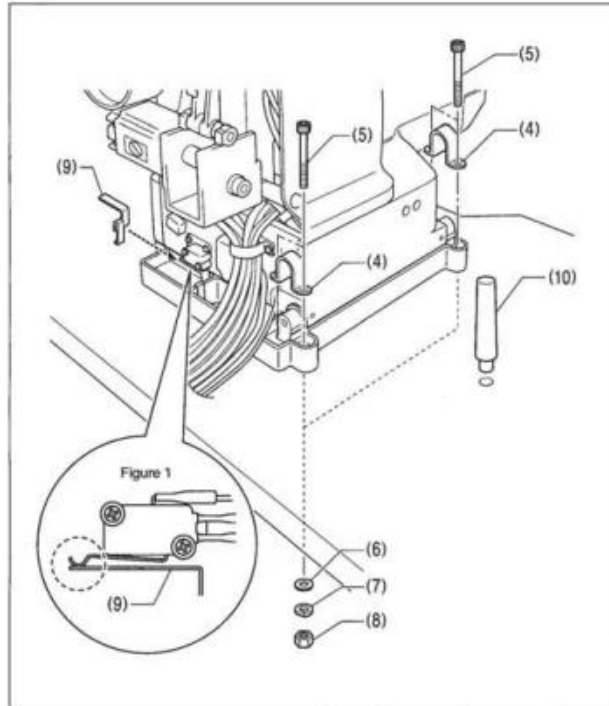


- (1) Pins [2 pcs]
- (2) Set screws [2 pcs]
- (3) Rubber cushion assembly [2 pcs]

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.

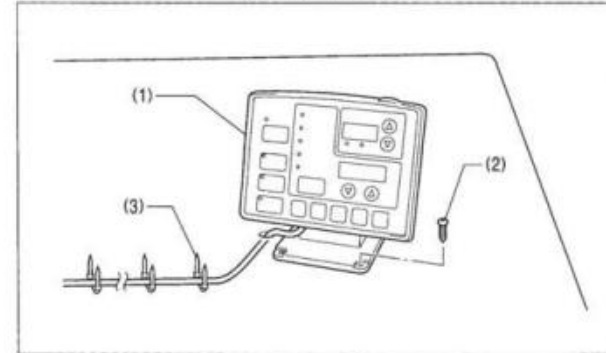


- (4) Hinge holders [2 pcs]
- (5) Bolts [4 pcs]
- (6) Plain washers [4 pcs]
- (7) Spring washers [4 pcs]
- (8) Nuts [4 pcs]
- (9) Head spring
- (10) Head rest

**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

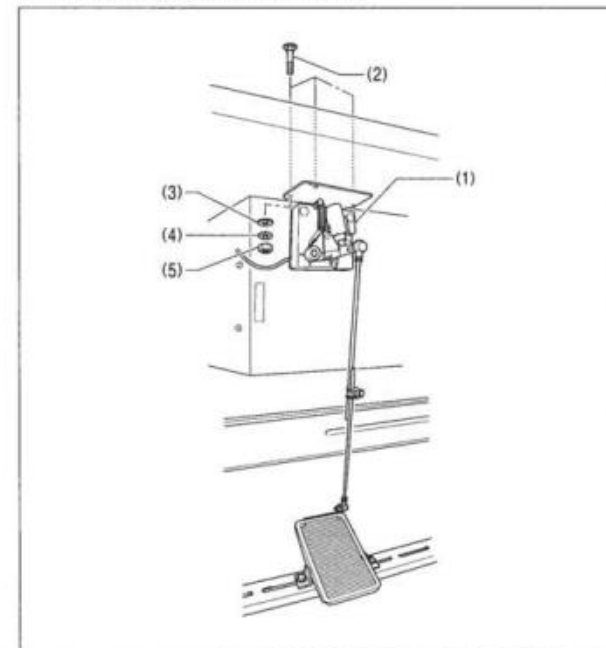


- (1) Operation panel
- (2) Wood screws [4 pcs]

\* 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

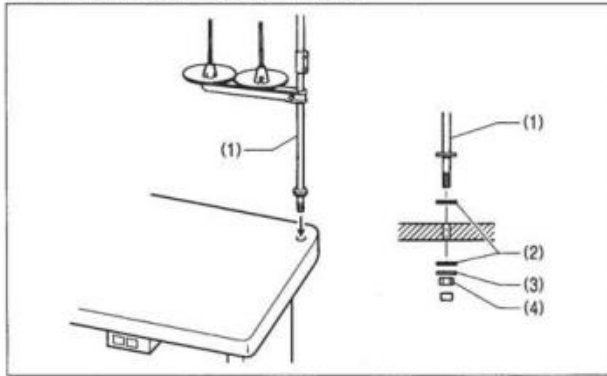


- (1) Treadle unit
- (2) Bolts [3 pcs]
- (3) Plain washers [3 pcs]
- (4) Spring washers [3 pcs]
- (5) Nuts [3 pcs]

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



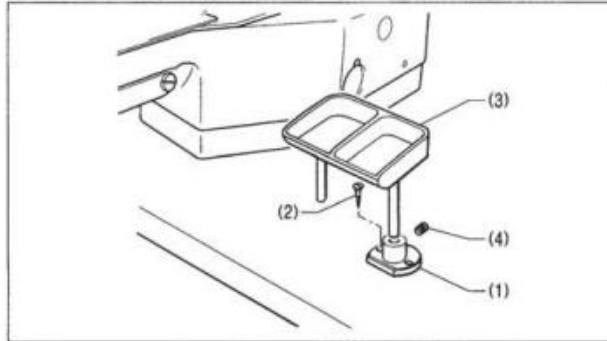
### 3-7. Installing the cotton stand



(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 ( GT-6438D )



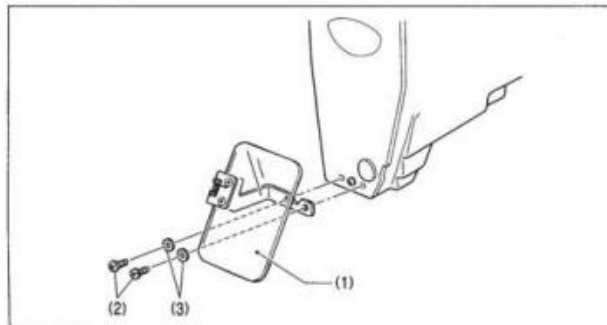
Install the button tray at a place convenient for operation.

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

### 3-9. Installing the eye guard

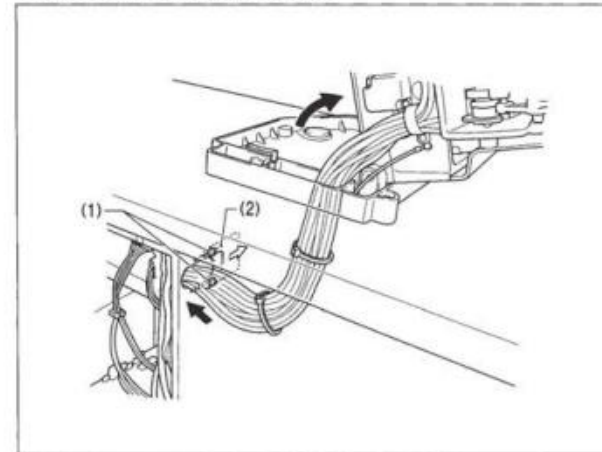
## CAUTION

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

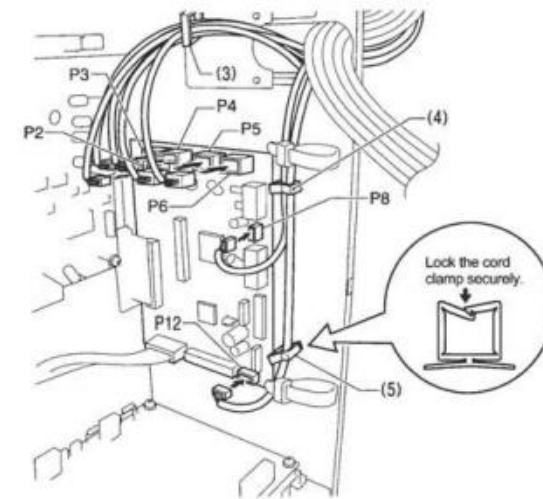


1. Gently tilt back the machine head.
2. Pass the cord bundle through the hole in the work table.
3. Loosen the two screws (1), and then open the cord presser plate (2) in the direction of the white arrow and pass the cord bundle through the opening.
4. Securely connect the connectors as indicated in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

**Note:**

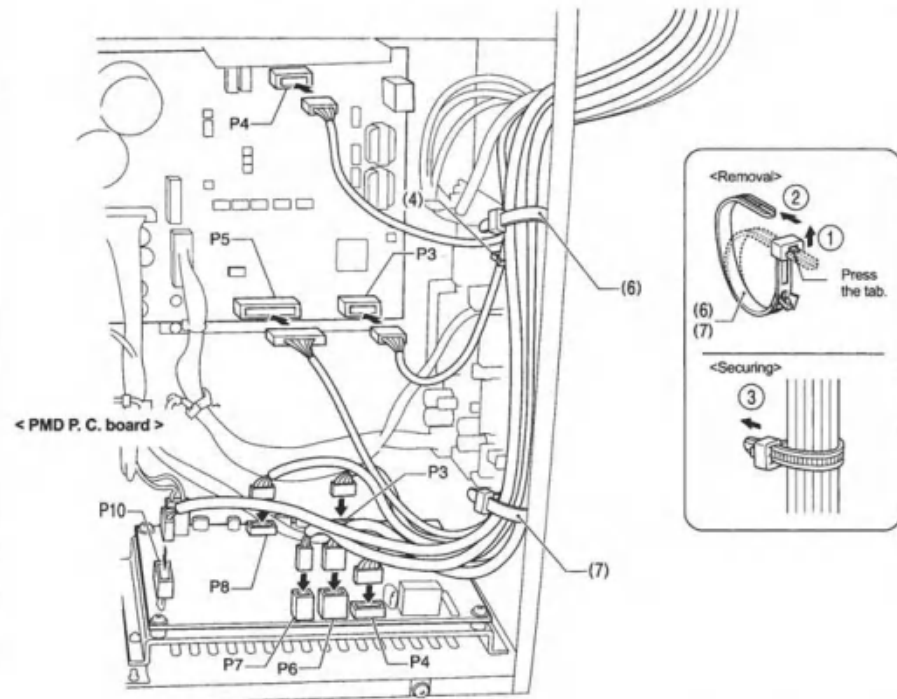
- Check that the connector is facing the correct way, and then insert it firmly until it locks into place.
- Secure the cables with cable ties and cord clamps, while being careful not to pull on the connector.

< 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)

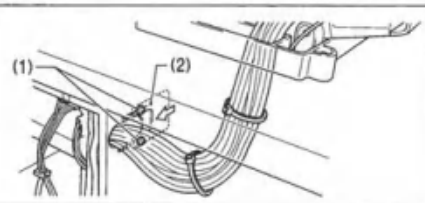
< Power supply motor P. C. board >



< PMD P. C. board >

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.

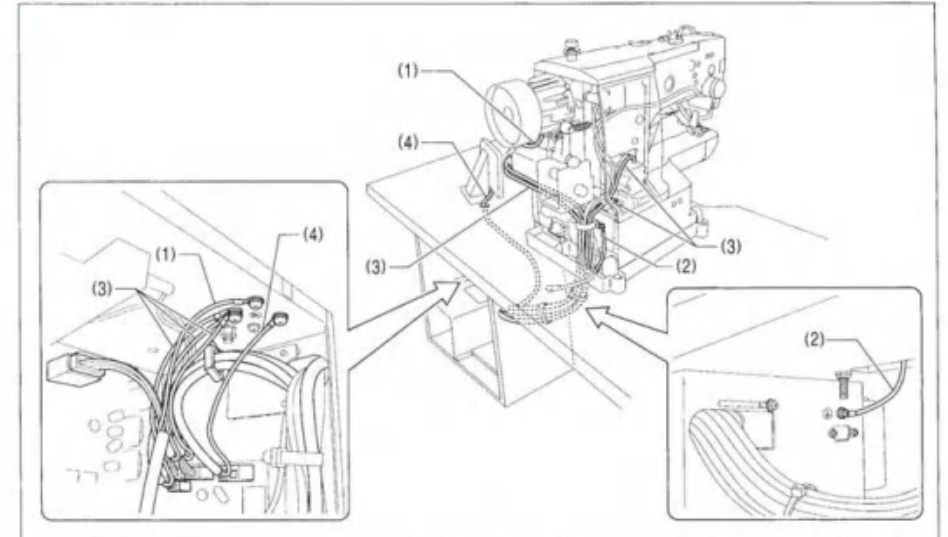


5. Close the cord presser plate (2) in the direction of the white arrow, and secure it by tightening the two screws (1).
6. Check that the cords do not get pulled, and then gently return the machine head to its original position.

### 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.

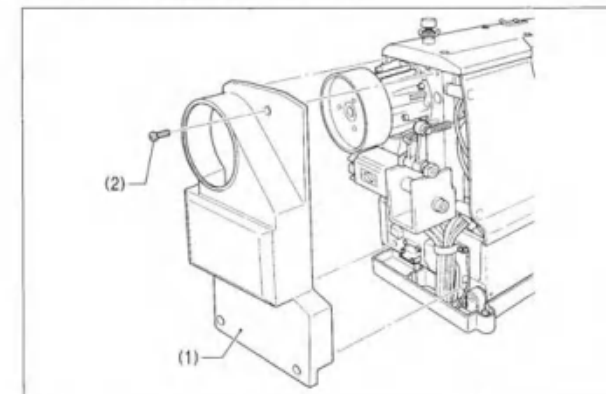


- (1) Ground wire from upper shaft motor harness
- (2) Ground wire from the machine head
- (3) Ground wires from X, Y and work clamp encoder harnesses (3 wires)
- (4) Ground wire from operation panel harness

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

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

### 3-12. 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

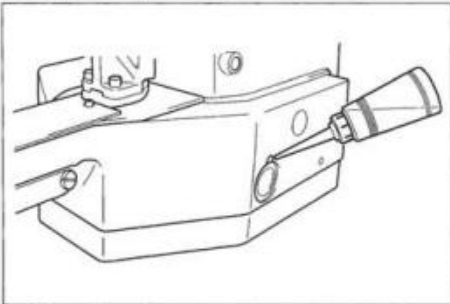
**CAUTION**

- 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 <Nisseki Mitsubishi Sewing Lube 10N; VG10> specified by TYPICAL

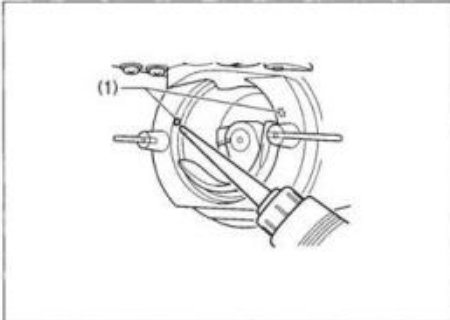
\* If this type of lubricating oil is difficult to obtain, the recommended oil to use is <Exxon Mobil EssoTex SM10; VG10>



1. Fill the oil tank with oil.

**Note:**

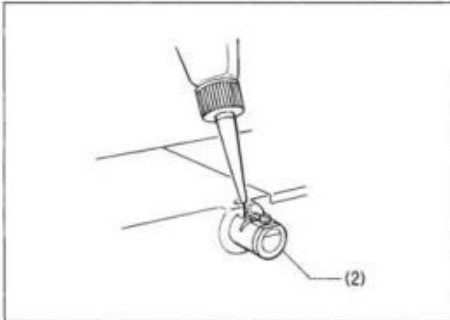
Fill the machine with oil when the oil level is down to about one-third full in the oil sight glass. If the oil drops below this level, there is the danger that the machine may seize during operation.



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

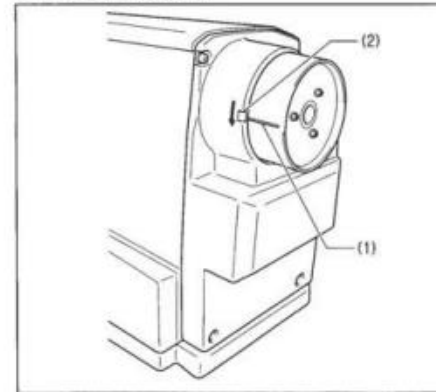
**Note:**

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<sup>2</sup>/s).

3-14. Starting up

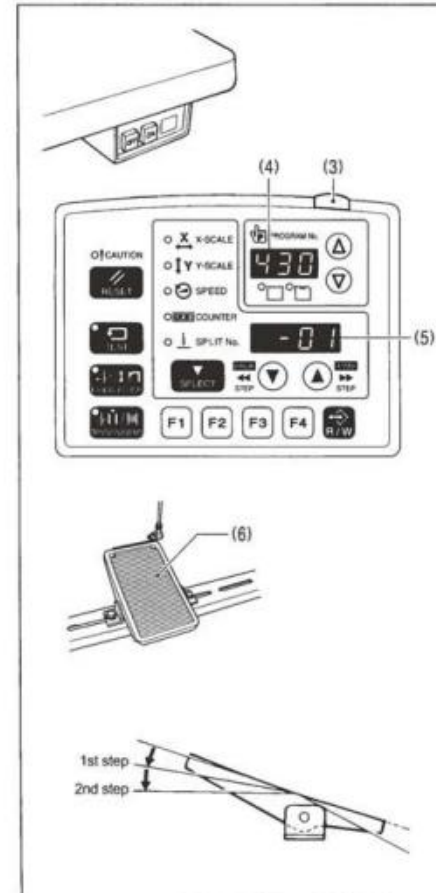


Before starting home position detection, check that the needle bar is at its highest position.

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.)



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 )
Foundation garments	( - 07 )

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

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.

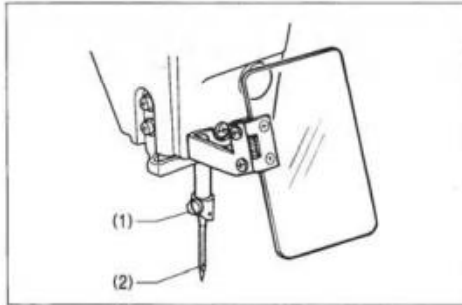


## 4. PREPARATION BEFORE SEWING

### 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.



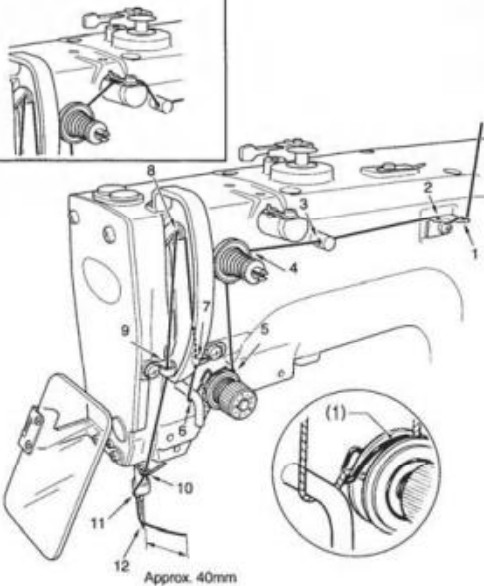
1. Loosen the set screw (1).
2. Insert the needle (2) in a straight line as far as it will go, making sure that the long groove on the needle is at the front, and then securely tighten the screw (1).

### 4-2. Threading the upper thread

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

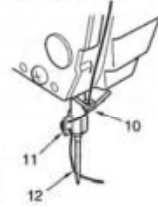
\* When using threading mode for threading, the tension discs (1) will open so that the thread can be threaded more easily. (Refer to following page.)

[When using the liquid cooling tank]

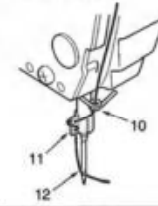


#### HLK-430

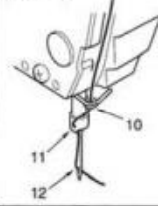
[Two holes]  
Spun rayon yarn



Synthetic thread



[One hole]



#### GT-6438D



<Threading mode>

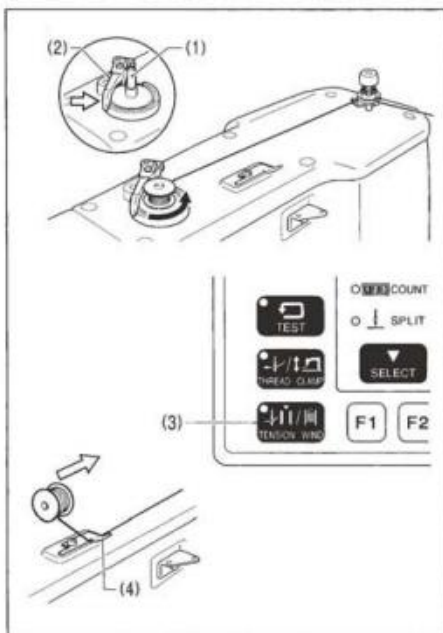
Threading mode is safe because the sewing machine will not start even when the foot switch is depressed.

<b>1</b>		Turn on the power switch.
<b>2</b>	<p>All indicators switch off</p> <p>THREAD/CLAMP indicator lights Menu indicators switch off</p>	<p>Press the THREAD/CLAMP key.</p> <ul style="list-style-type: none"> <li>• The work clamp /button clamp will lower.</li> <li>• The tension discs will open.</li> </ul>
<b>3</b>	<p><b>Threading the thread.</b></p> <ul style="list-style-type: none"> <li>• When 5 minutes have passed, the buzzer will sound and the tension discs will close.</li> </ul>	
<b>4</b>	<p>THREAD/CLAMP indicator switches off</p>	<p><b>Ending threading mode</b></p> <p>Press the THREAD/CLAMP key.</p> <ul style="list-style-type: none"> <li>• The work clamp/button clamp will return to where it was before threading mode was started.</li> </ul>

### 4-3. Winding the lower thread

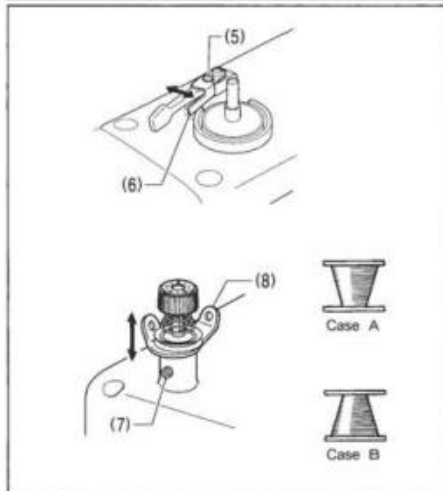
#### CAUTION

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



1. Place the bobbin onto the bobbin winder shaft (1).
2. Thread the thread as shown in the illustration, wind the thread around the bobbin several times, and then press the bobbin presser arm (2).
3. Turn on the power switch.
4. Depress the foot switch to the second step. The feed mechanism will move to the home position.
5. Check that the needle 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.

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

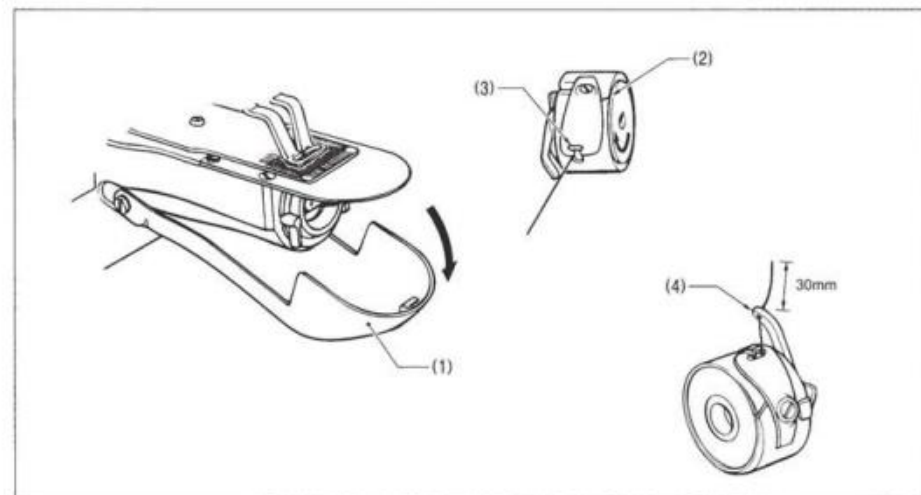


**If the thread winds onto the bobbin unevenly**  
Loosen the set screw (7) and move the bobbin winder tension assembly (8) up and down to adjust.  
\* For case A, move the bobbin winder tension assembly (8) down, and for case B, move it upward.

### 4-4. Installing the bobbin case

#### CAUTION

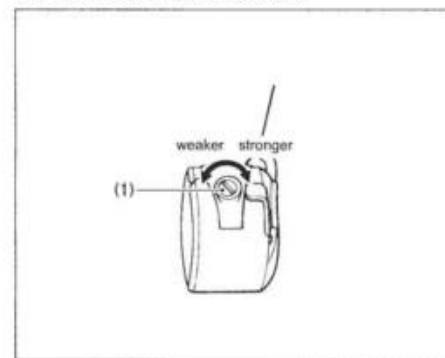
Turn off the power switch before installing the bobbin case, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.



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

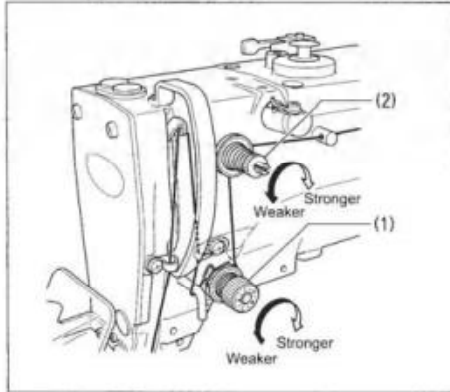
#### 4-5-1. Lower thread tension



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. PREPARATION BEFORE SEWING

##### 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	HLK-430			HLB-430
	Ordinary materials (-01)	Foundation garments (-07)	Denim (-02)	
Upper thread	#50 or equivalent	#60 or equivalent	#30 or equivalent	#60 or equivalent
Lower thread	#60 or equivalent	#80 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	DP x 17NY #19	DP x 17NY #12

##### [Guide to maximum sewing speed for HLK-430]

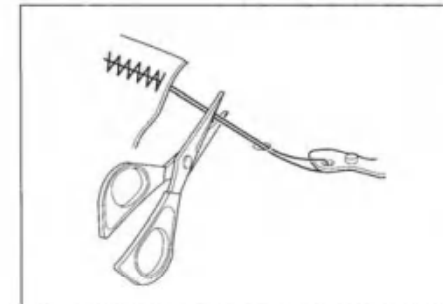
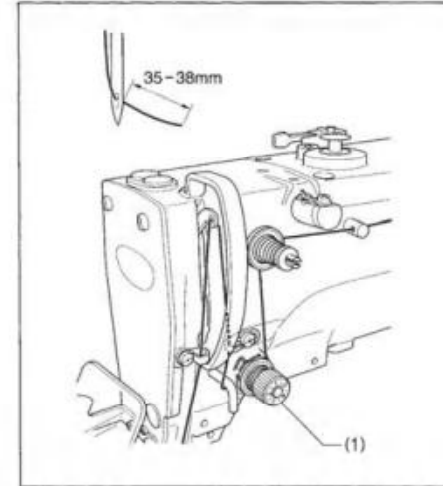
Use	Max. sewing speed (rpm)	
	Standard hook	Large hook
8 layers of denim	3,200	2,500
12 layers of denim	2,700	
Ordinary materials	2,700	2,500
Foundation garments	2,500	

**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]

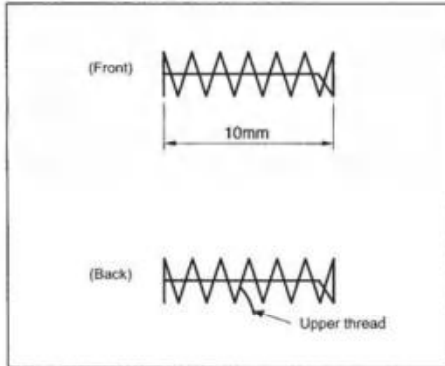


- When using the thread nipper device, turn the tension nut (1) (sub-tension) to adjust the upper thread trailing length to 35 - 38 mm.  
\* Adjust the upper thread trailing length to less than 40 mm after replacing the upper thread also.

- 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.



#### 4. PREPARATION BEFORE SEWING



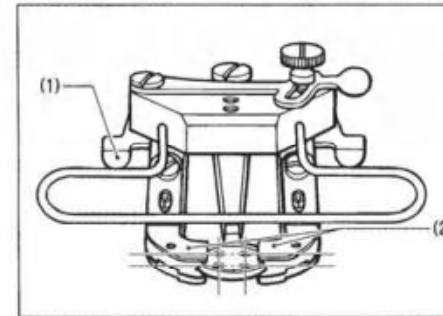
- For sewing patterns with a short bar tack length (10 mm or less), the end of the thread that is being held by the thread nipper may poke out from the seam on the underside of the material. It is recommended that you change the thread nipper setting to "OFF" for patterns such as these.
- If error [E690]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

- With the HLK-430, 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 (HLK-430)" for details of the sewing patterns.

<Program No. Reference Table>

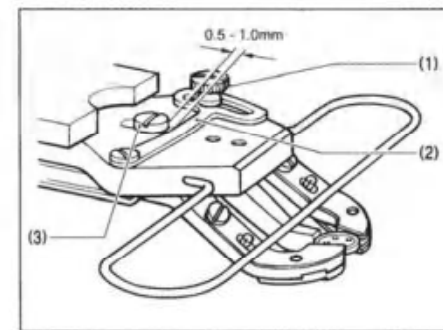
Specifications	Standard program No.	Program No. for thread nipper device
For ordinary materials (-01)	1	65
	4	66
	5	67
	8	68
	13	69
	15	70
	20	71
For denim (-02)	21	72
	2	78
	3	79
	6	80
	14	81
	16	82
	17	83
For foundation garments (-07)	18	84
	19	85
	7	73
	9	74
	22	75
	31	76
	32	77

#### 4-7. Inserting the button ( HLB-430 )



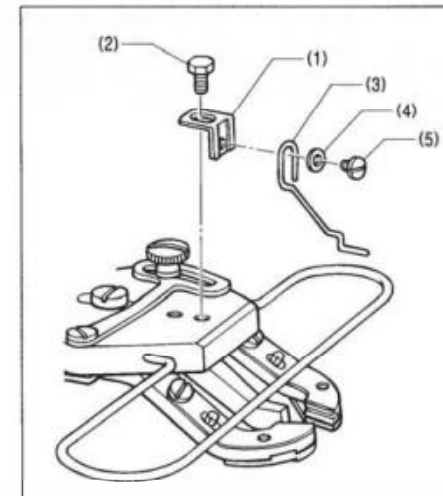
- Press the button clamp plate cam (1) to open the button holder (2).
- Insert the button, making sure that the button is facing the directing shown in the illustration, then release the button clamp plate cam (1).

#### 4-8. Adjusting the button clamp ( HLB-430 )



- Insert the button in the button clamp. Confirm that the button is securely held by the clamp.
- 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 ( HLB-430 )

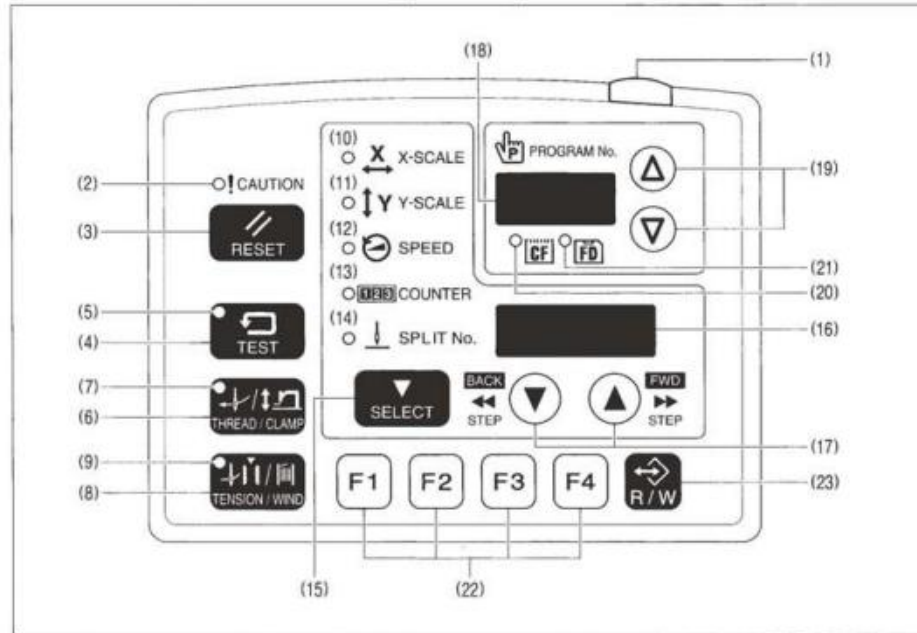


If you would like the button to be raised up more after it is sewn, install the accessory spring.

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

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

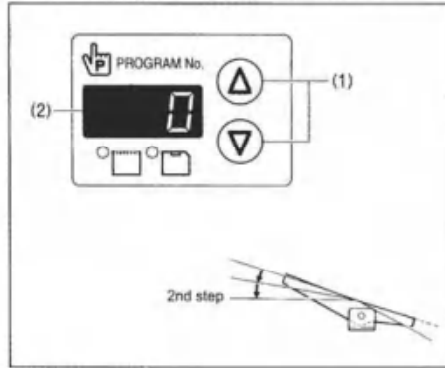
### 5-1. Name and function of each operation panel item



- (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**  $\nabla$   $\blacktriangle$   
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**  $\nabla$   $\blacktriangle$   
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.

### 5-2. Setting the program number

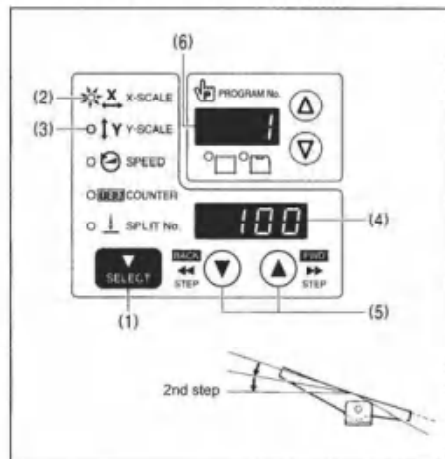


The program number is set to 0 (feed home position check) at the time of shipment from the factory.

1. Press the  $\Delta$  or  $\nabla$  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

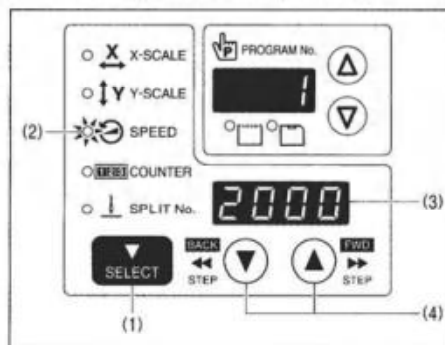


The scales are set to 100 (%) at the time of shipment from the factory.

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  $\Delta$  or  $\nabla$  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



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  $\Delta$  or  $\nabla$  key (4) to set the sewing speed. (Sewing speed setting values HLK-430 : 400 - 3200, HLB-430 : 400 - 2700)

### 5-5. Checking the sewing pattern (HLK-430)


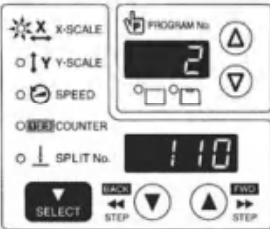







Use test feed mode to check the needle movement with only the feed mechanism operating. Check that the needle hole does not come out from the frame of the work clamp.

<b>1</b>		Press the TEST key.
<b>2</b>		<p>TEST indicator lights</p> <p>Select the program number to be checked, and then set the X-scale and the Y-scale.</p> <ul style="list-style-type: none"> <li>• The program number will flash.</li> </ul> <p>Depress the foot switch to the 2nd step.</p> <ul style="list-style-type: none"> <li>• The feed mechanism will move to the home position and the program number will stop flashing and illuminate steadily.</li> </ul>
Program number flashing → lit		
<b>3</b>	<p>Starting continuous test feed mode</p>	<p>Depress the foot switch to the 2nd step and then release it.</p> <ul style="list-style-type: none"> <li>• Feed mechanism starts moving continuously one stitch at a time.</li> </ul> <p><b>[Fast-forward test mode]</b> 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.</p> <p><b>[Sewing standby mode]</b></p> <p>If you would like sewing to start while test feeding is in progress, press the TEST key to switch off the TEST indicator.</p> <p>When you depress the foot switch to the 2nd step, sewing will start.</p>
TEST indicator switches off		
<ul style="list-style-type: none"> <li>• If you press the <math>\Delta</math> key when in this mode, the feed will move forward one stitch, and if you press the <math>\nabla</math> key, the feed will move backward one stitch. (The feed will move quicker if you keep the key pressed down.)</li> <li>• If you would like to start test feed once more, press the TEST key.</li> </ul>		
<b>4</b>	<p>If test feeding continues to the final stitch, it will then stop.</p>	Press the TEST key.
TEST indicator switches off		
<b>5</b>		<p>Depress the foot switch to the 1st step. The work clamp will rise and the preparation for sewing will be completed.</p>



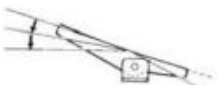
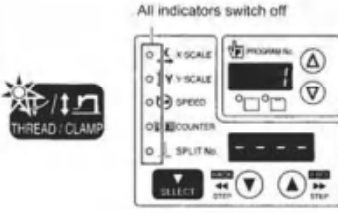
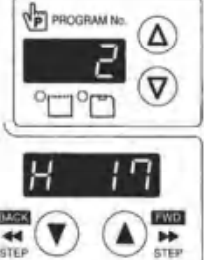
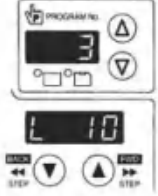

### 5-6. Checking the sewing pattern ( HLB-430 )

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

<b>1</b>		Press the TEST key.
<b>2</b>		<p>TEST indicator lights</p> <p>Select the program number to be checked, and then set the X-scale and the Y-scale.</p> <ul style="list-style-type: none"> <li>The program number will flash.</li> </ul> <p>Depress the foot switch to the 2nd step.</p> <ul style="list-style-type: none"> <li>The feed mechanism will move to the home position and the program number will stop flashing and illuminate steadily.</li> </ul>  <p style="text-align: center;">2nd step</p> <p style="text-align: center;">Program number flashing → lit</p>
<b>3</b>	Set the button. (Refer to "4-7. Inserting the button".)	
<b>4</b>	<p>Starting single-stitch test feed mode</p>  <p>1st step 2nd step</p> <p>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.</p> <div style="border: 1px solid black; padding: 5px;"> <p>[Sewing standby mode]</p>   <p>2nd step</p> <p>TEST indicator switches off</p>  <ul style="list-style-type: none"> <li>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.)</li> <li>If you would like to start single-stitch test feed once more, press the TEST key.</li> </ul> <p style="text-align: center;">TEST indicator lights</p> </div> <p style="text-align: center;">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.</p>	<p>Depress the foot switch to the 2nd step and then release it.</p> <ul style="list-style-type: none"> <li>The feed mechanism will move by one stitch only.</li> </ul>
<b>5</b>	<p>Ending test feed mode</p> <p>Press the TEST key.</p>  <p style="text-align: center;">TEST indicator switches off</p>	<p>Press the TEST key.</p>
<b>6</b>	<p>Depress the foot switch to the 1st step. The work clamp will rise and the preparation for sewing will be completed.</p>  <p style="text-align: center;">1st step</p>	<p>Depress the foot switch to the 1st step.</p> <p>The work clamp will rise and the preparation for sewing will be completed.</p>

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

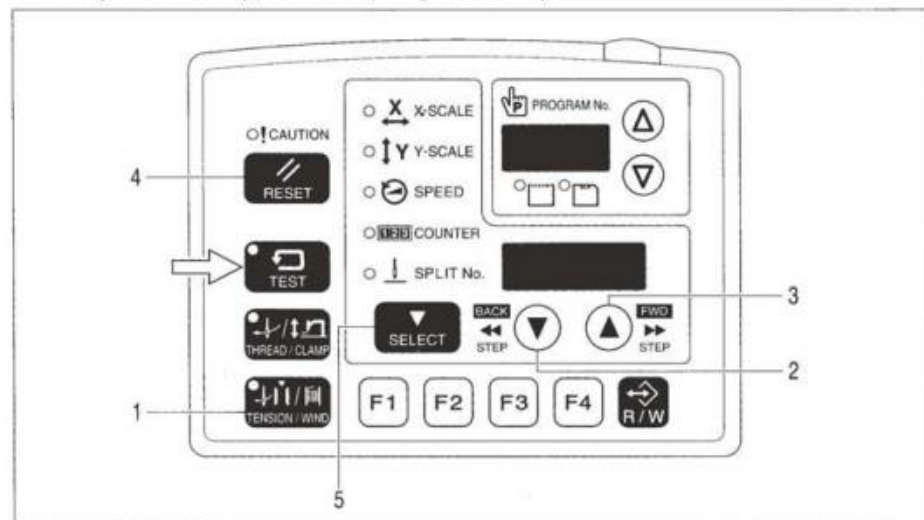
The setting for the work clamp/button clamp lift amount can be changed using the operation panel.

<b>1</b>		Carry out home position detection.									
<b>2</b>		<p>All indicators switch off</p> <p>Press the THREAD/CLAMP key.</p> <p>The sewing machine will switch to threading mode.</p> <p>" 1 " will appear in the PROGRAM No. display, and the work clamp / button clamp will be lowered.</p> <p style="text-align: center;">THREAD/CLAMP indicator lights</p> <p style="text-align: center;">Menu indicators switch off</p>									
<b>3</b>		<p>Press the Δ key.</p> <p>The sewing machine will switch to work clamp height setting mode.</p> <ul style="list-style-type: none"> <li>" 2 " will appear in the PROGRAM No. display and the work clamp/button clamp will rise to the setting value that appears in the menu display. (Work clamp height setting values HLK-430 : 10 - 17, HLB-430 : 6 - 13)</li> </ul> <p><b>Note:</b></p> <p>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.</p> <p>Press the ▲ or ▼ key to set the work clamp height.</p> <ul style="list-style-type: none"> <li>The work clamp/button clamp will rise or drop to the height of the new value that has been set.</li> </ul>									
<p>When memory switch no.003 is "ON"</p> 		<p>Press the Δ key.</p> <p>The sewing machine will switch to intermediate work clamp height setting mode.</p> <ul style="list-style-type: none"> <li>" 3 " will appear in the PROGRAM No. display and the work clamp/button clamp will move to the setting value that appears in the menu display. (Intermediate work clamp height setting values HLK-430 : 1 - 17, HLB-430 : 1 - 13)</li> </ul> <p>Press the ▲ or ▼ key to set the intermediate work clamp height.</p> <ul style="list-style-type: none"> <li>The work clamp/button clamp will rise or drop to the height of the new value that has been set.</li> </ul>									
<p>&lt;Switching modes&gt;</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; text-align: right;">[ 2 ] Work clamp height setting mode</td> <td style="width: 5%; text-align: center;">↑</td> <td style="width: 45%; text-align: center;">▲</td> </tr> <tr> <td style="text-align: right;">([ 3 ] Intermediate work clamp height setting mode)</td> <td style="text-align: center;">↓</td> <td style="text-align: center;">▼</td> </tr> <tr> <td style="text-align: right;">[ 1 ] Threading mode</td> <td></td> <td></td> </tr> </table>			[ 2 ] Work clamp height setting mode	↑	▲	([ 3 ] Intermediate work clamp height setting mode)	↓	▼	[ 1 ] Threading mode		
[ 2 ] Work clamp height setting mode	↑	▲									
([ 3 ] Intermediate work clamp height setting mode)	↓	▼									
[ 1 ] Threading mode											
<b>4</b>	<p>Ending setting mode</p>  <p style="text-align: center;">THREAD/CLAMP indicator switches off</p>	<p>Press the THREAD/CLAMP key.</p> <ul style="list-style-type: none"> <li>The setting values will be memorized.</li> <li>The work clamp/button clamp will return to the status that it was at before the sewing machine was switched to setting mode.</li> </ul>									

## 6. USING THE OPERATION PANEL (ADVANCED OPERATIONS)

### 6-1. List of advanced functions

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



1	+	Memory switch setting mode Refer to "6-2. Setting memory switches".
2	+	Lower thread counter setting mode Refer to "6-4. Using the lower thread counter".
3	+	Production counter setting mode Refer to "6-5. Using the production counter".
4	<b>When the SPEED indicator lights</b> +	Production counter temporary display function Refer to "6-5. Using the production counter".
5	+	User program setting mode Refer to "6-6. Using user programs".

### 6-2. Setting memory switches

**1**

All indicators switch off

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.

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

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

Menu indicators switch off  
TEST indicator lights

**2**

Press the  $\Delta$  or  $\nabla$  key to select the memory switch number.

Press the  $\Delta$  or  $\nabla$  key to change the setting value.

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

While pressing the SELECT key, press the  $\Delta$  or  $\nabla$  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.

**3 Ending setting mode**

Press the TEST key.

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

TEST indicator switches off

- 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	HLK-430 : 1st stitch sewn at 400 rpm and 2nd stitch sewn at 800 rpm HLB-430 : 1st and 2nd stitches sewn at 400 rpm	
200	Single-stitch test feed		*1
	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 (*2)		OFF
	OFF	Displayed as %.	
	ON	Displayed as mm.	
500	Thread clamp device		OFF
	OFF	Disable	
	ON	Thread clamp device can be used. (*3)	

\*1 Off for HLK-430 and ON for HLB-430 .

\*2 The mm display may differ slightly from the actual sewing size.

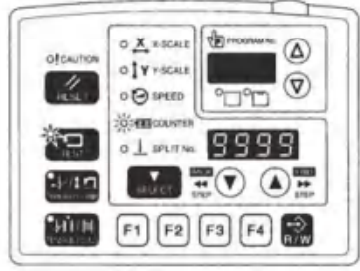
\*3 May not operate if the settings for the memory switch nos. 151 and 152 have been changed, or at some sewing speeds.  
(Refer to the Service Manual for details of memory switch nos. 151 and 152.)

## 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.

## &lt;Initial value setting&gt;

1




While pressing the TEST key press the ▼ key.



- The initial value which was set previously will appear in the menu display.

2




TEST indicator lights, COUNTER indicator flashes

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



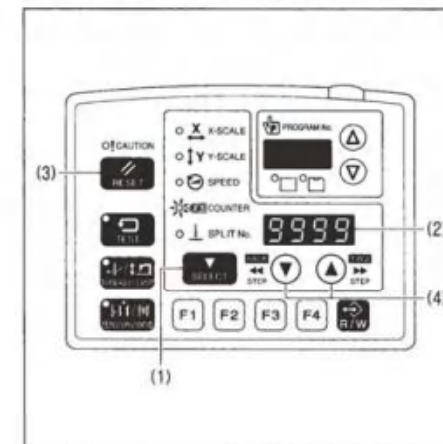
Press the TEST key.

- The initial value will be memorized.

TEST indicator switches off

## &lt;Lower thread counter operation&gt;

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).

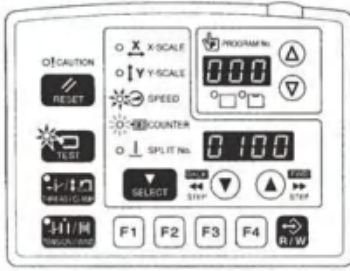

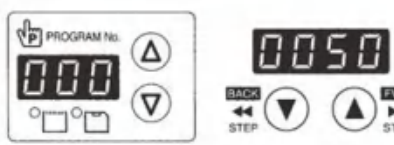


- Each time the sewing of a single article is completed, the value shown in the menu display (2) is reduced by 1.
- When the lower thread counter reaches "0000", the buzzer will sound. The sewing machine will not operate during this time, even if the foot switch is depressed.
- When you press the RESET 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.



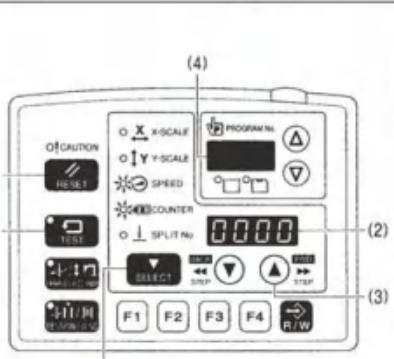
### 6-5. Using the production counter

<Setting the counter value>

1		<p>While pressing the TEST key, press the ▲ key.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px; text-align: center;">TEST</div> <div style="text-align: center;">   FWD STEP             </div> </div> <ul style="list-style-type: none"> <li>The counter value will appear in the PROGRAM No. display and the menu display as a 7-digit number.</li> </ul> <p style="text-align: center;">TEST indicator and SPEED indicator light COUNTER indicator flashes</p>
2		<p>Press the ▲ or ▼ key to set the counter value.</p> <ul style="list-style-type: none"> <li>The counter value can be set from [000][0000] to [999][9999].</li> <li>If you press the RESET key during setting mode, the value will become [000][0000].</li> </ul>
3	<p>Ending setting mode</p> <div style="display: flex; justify-content: center; align-items: center;"> <div style="border: 1px solid black; padding: 2px; text-align: center;">TEST</div> </div> <p style="text-align: center;">TEST indicator switches off</p>	<p>Press the TEST key.</p> <ul style="list-style-type: none"> <li>The counter value will be memorized.</li> </ul>

<Production counter operation>

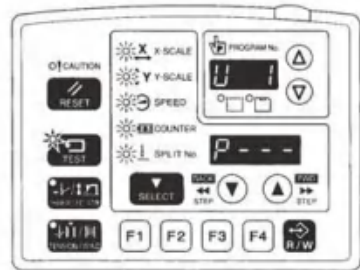




If you press the SELECT key (1) to select the counter display menu when memory switch no. 300 is set to "ON", the SPEED and COUNTER indicators will illuminate and the production counter will appear in the menu display (2).

	<ol style="list-style-type: none"> <li>Each time the sewing of a single article is completed, the value shown in the menu display (2) is increased by 1.</li> <li>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.</li> <li>If you press the RESET key (5) for 2 seconds or more, the counter value will be reset to [0000].</li> </ol> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p><b>Temporary display function</b></p> <p>You can display the production counter temporarily while the lower thread counter is being displayed.</p> <p>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.</p> <ul style="list-style-type: none"> <li>Sewing can continue as normal while the temporary display is active.</li> </ul> </div>
---	---


### 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	<p>Select a user program number.</p> 	<p>While pressing the TEST key, press the SELECT key.</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 2px; text-align: center;">TEST</div> <div style="border: 1px solid black; padding: 2px; text-align: center;">SELECT</div> </div> <ul style="list-style-type: none"> <li>Switch to user program recording mode. Check that the menu indicators are flashing.</li> <li>User program number will appear in the PROGRAM No. display, and "P - - -" will appear in the menu display.</li> </ul> <p>Press the ▲ or ▼ key to select a user program number.</p> <p style="text-align: center;">TEST indicator lights Menu indicators flash</p>
2	<p>First, set the program number.</p> 	<p>Press the ▲ or ▼ key to set the program number that you would like to record.</p>
3	<p>Next, set the X-scale.</p> 	<p>Press the SELECT key.</p> <div style="display: flex; justify-content: center; align-items: center;"> <div style="border: 1px solid black; padding: 2px; text-align: center;">SELECT</div> </div> <p>Press the ▲ or ▼ key to set the X-scale that you would like to record.</p> <p style="text-align: center;">X-SCALE indicator flashes</p>
4	<p>Next, set the Y-scale.</p> 	<p>Press the SELECT key.</p> <div style="display: flex; justify-content: center; align-items: center;"> <div style="border: 1px solid black; padding: 2px; text-align: center;">SELECT</div> </div> <p>Press the ▲ or ▼ key to set the Y-scale that you would like to record.</p> <p style="text-align: center;">Y-SCALE indicator flashes</p>
5	<p>Next, set the sewing speed.</p> 	<p>Press the SELECT key.</p> <div style="display: flex; justify-content: center; align-items: center;"> <div style="border: 1px solid black; padding: 2px; text-align: center;">SELECT</div> </div> <p>Press the ▲ or ▼ key to set the sewing speed that you would like to record.</p> <p style="text-align: center;">SPEED indicator flashes</p>


**6** Next, set the work clamp height. Press the SELECT key.



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

THREAD/CLAMP indicator flashes


**7** Next, set the intermediate work clamp height (only when memory switch no. 003 is "ON"). Press the SELECT key.



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

THREAD/CLAMP indicator flashes

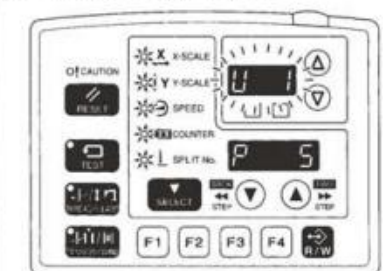
**8** Press the SELECT key.



• If setting further user programs, select the user program number and then repeat steps 2 to 8.

TEST indicator lights  
Menu indicators flash

**9** End user program recording mode. Press the TEST key.

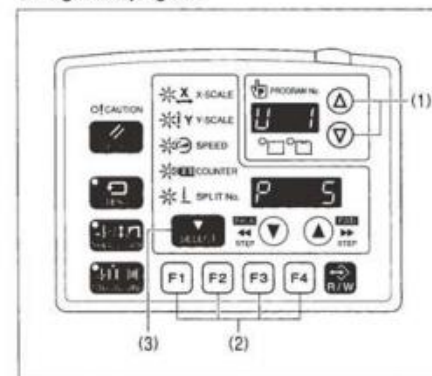


This completes the recording of a user program.

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

TEST indicator switches off  
Menu indicators light

## &lt;Using a user program&gt;

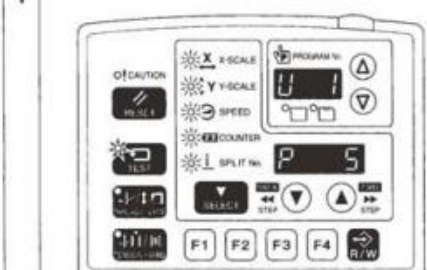


- Press the ▲ or ▼ key (1) to select the user program number that you would like to use.
  - If the user program number is flashing, depress the foot switch to move the feed mechanism to the home position. After this, it is not necessary to detect the home position until the next time the power is turned 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".)
- 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).

## &lt;Clearing a user program&gt;

**1** 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 ▲ or ▼ key to select the user program number which is to be cleared of data.

TEST indicator lights  
Menu indicators flash

**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.

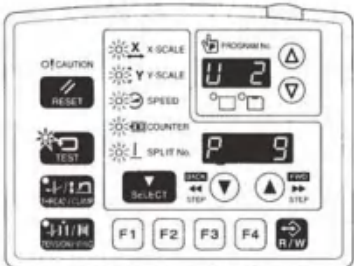
**Note:**  
If any cycle programs have been memorized, all of the memorized cycle programs will also be cleared.

### 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".**

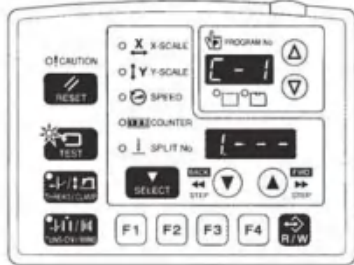
<Recording the cycle programs>

**1 Switch to user program recording mode.** While pressing the TEST key, press the SELECT key.




TEST indicator lights  
Menu indicators flash

**2 Switch to cycle program recording mode, and select the cycle program number.** Press a function key from F1 to F4.



Menu indicators switch off

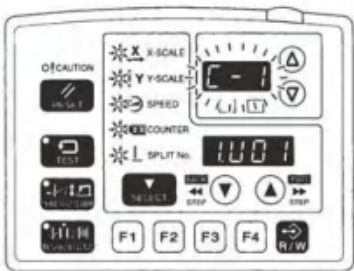
**3 Set the step 1.** Press the ▲ or ▼ key to set the program number that you would like to record. Press the SELECT key.



**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 ▲ 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.**

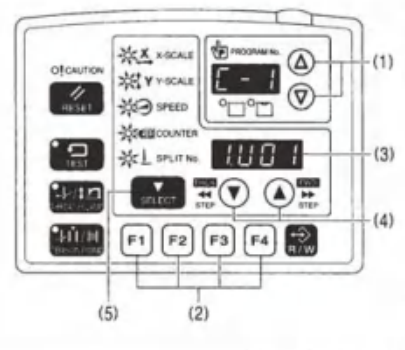
**6 End cycle program recording mode.** Press the TEST key.



TEST indicator switches off  
Menu indicators light

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.

<Using a cycle program>



- Press the ▲ 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.
- Check that the needle drop position is correct, and then start sewing. (Refer to "5-5.5-6 Checking the sewing pattern".)
- 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.

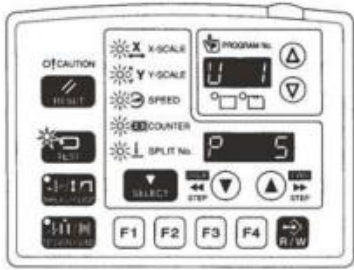
• If you press the ▲ or ▼ key (4), you can return to the previous step or skip to the next step respectively. (You do not need to carry out home position detection again.)  
• If you press the SELECT key (5), you can check the details (such as X-scale, Y-scale and sewing speed) of the user program for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



< Clearing a cycle program>

**1**



While pressing the TEST key, press the SELECT key.


TEST SELECT

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

TEST indicator lights  
Menu indicators flash

---

**2**



Press a function key from F1 to F4.

F1 F2 F3 F4


- Switch to cycle program recording mode.

Press a function key from F1 to F4, or press the  $\Delta$  or  $\nabla$  key to select the cycle program number to be cleared.

Menu indicators switch off

---

**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**

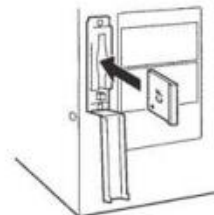
You can use the function keys to directly select user program numbers and cycle program numbers. U1 to U4 and C-1 to C-4 can be selected using function keys F1 to F4. U5 to U10 and C-5 to C-9 can be selected by simultaneously pressing combinations of function keys F1 to F4 (addition).

<Key combination table>

U5 / C-5	U6 / C-6	U7 / C-7
F1 + F4	F2 + F4	F3 + F4
Or	Or	Or
F2 + F3	F1 + F2 + F3	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**

**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.

---

**2**




Turn on the power switch.  
Press the  $\Delta$  or  $\nabla$  key to select the program number (200 to 999).

CF media indicator lights

---

**3**



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.

While reading

---

**4 End reading.**

- The program No. display will change from " P" to the selected program number.



## 7. SEWING

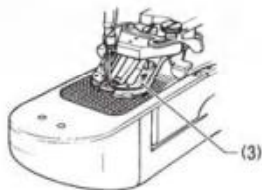
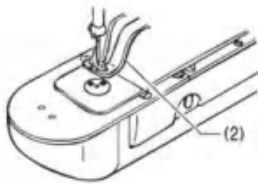
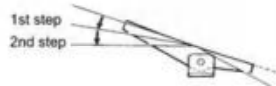
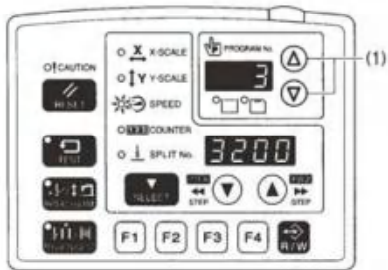
**CAUTION**

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.



1. Turn on the power switch.
2. Press the  $\Delta$  or  $\nabla$  key (1) to select the number for the program to be sewn.

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 HLK-430, 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

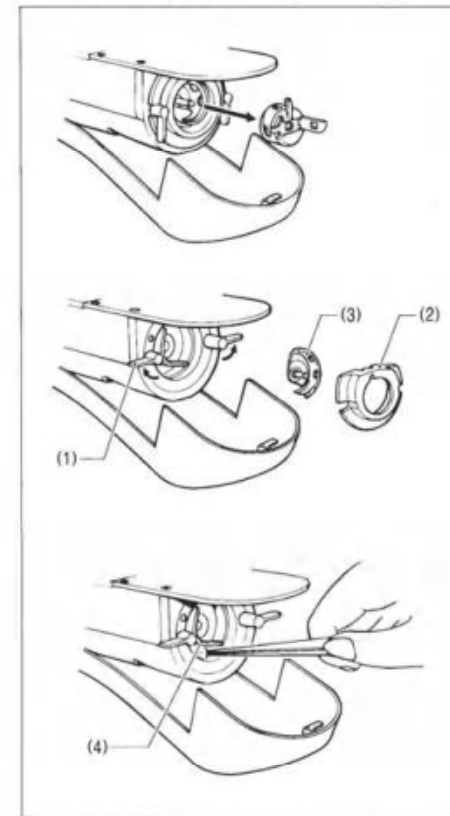
**CAUTION**

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

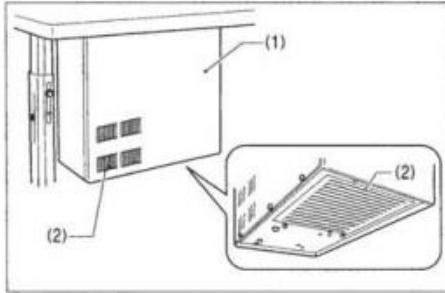


1. Pull the shuttle race cover downward to open it, and then remove the bobbin case.

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

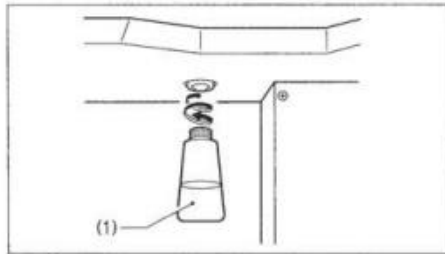
3. Clean all the dust and thread ends from around the driver (4), the top of the rotary hook thread guide and the shuttle race.

### 8-2. Cleaning the control box air inlet ports



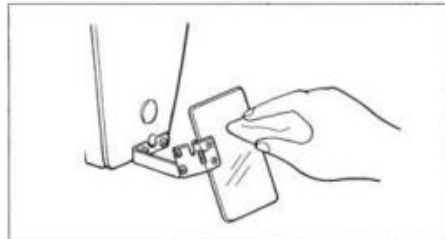
Use a vacuum cleaner to clean the filter in the air inlet ports (2) of the control box (1) at least once a month.

### 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

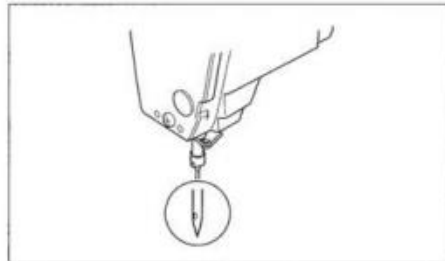


Wipe the eye guard clean with a soft cloth.

**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.

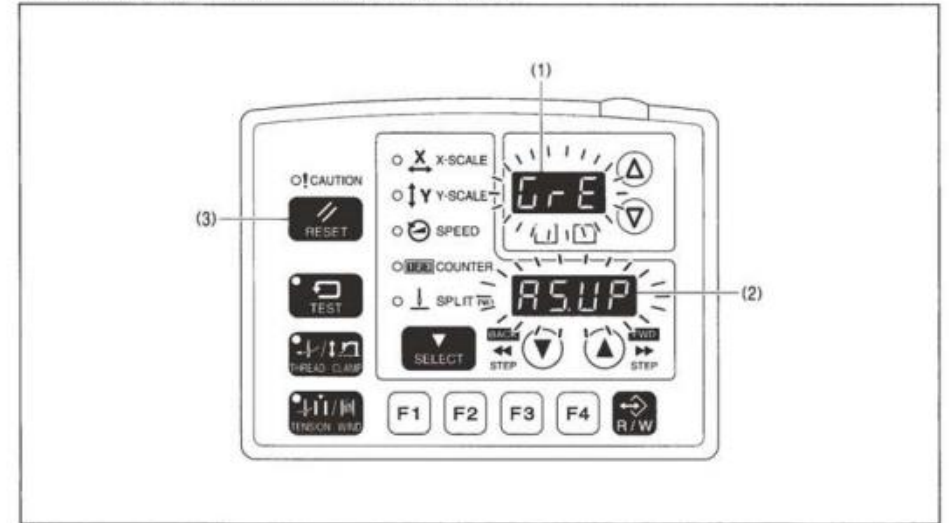
### 8-6. Lubrication

Carry out the lubrication referring to "3-13. Lubrication".

### 8-7. Applying grease (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.



**<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.

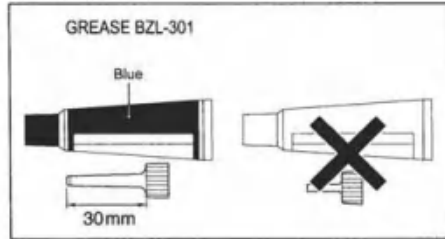
**Note:**

- "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 the separate page.
- 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.

## 8. MAINTENANCE

### <Applying grease>

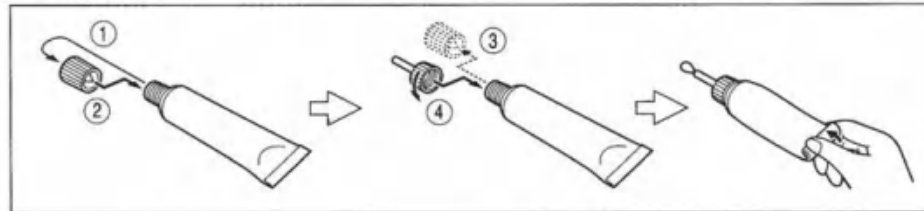


#### Note:

- Use only the grease <BZL-301 (SA2694-001) in the blue tube> specified by TYPICAL.
- Do not use the BZL-300 (SA2355-001) grease in the white tube with this sewing machine.

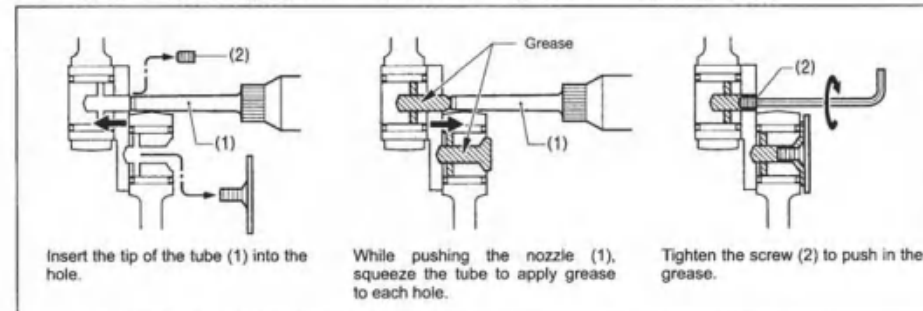
Purchase the "grease unit" (SA2693-001) to use for applying grease.

#### 1. Using the tube

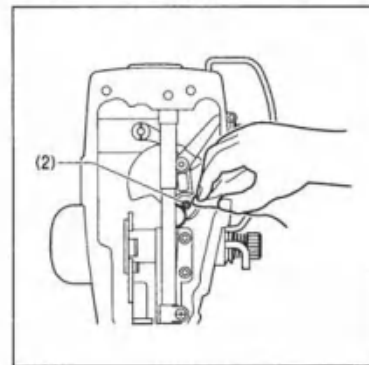


#### 2. Applying grease

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



1. Turn off the power switch.
2. Remove the screw (2). (Refer to the separate 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 separate page in the same way.
8. After this, carry out the reset procedure given on the separate 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.)

## 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 E051 E055	Foot switch was pressed or the operation panel was used while the machine head was tilted back, or the machine head was tilted back while it was operating. 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	A switch on the operation panel was being pressed down when the power was turned on, or a switch 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.
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	Problem with machine motor stopping, or synchronizer connection error. 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.

#### 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.
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.

## 9. TABLE OF ERROR CODES

### 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.

### Communication and memory-related errors

Code	Cause and remedy
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.

### 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.
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.
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, contact the place of purchase.

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The description covered in this manual is subject to change for improvement of the commodity without notice