# LBH-1790
INSTRUCTION MANUAL

CONTENTS

Ⅰ. IMPORTANT SAFETY INSTRUCTIONS

1) Never operate the machine unless the oiling tank has been properly lubricated.
2) Be sure to remove any dust from the hook or bobbin thread cutting knife section at the end of the day, and check the amount of oil remaining.
3) Be sure to return the activating pedal to the home position after the machine has started to run.
4) A safety switch is installed so that this sewing machine can not be operated in the state that the machine head is tilted. When operating this sewing machine, turn the power switch ON after setting the sewing machine to the bed base properly.

Ⅱ. SPECIFICATIONS

1. Subclass

Computer-controlled, high-speed, lockstitch buttonholing machine, LBH-1790, has the subclass machines below.
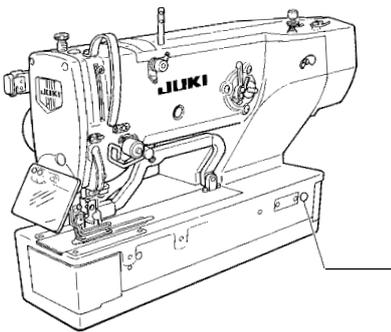
Subclass	LBH-1790S	LBH-1792K	LBH-1795S
Major application	Buttonholing of cloth such as men's shirts, blouses, work uniforms, ladies' wear, etc.	Buttonholing of knits such as knitted underwear, sweaters, cardigans, jersey, etc.	Buttonholing of cloth such as men's shirts, blouses, work uniforms, ladies' wear, etc. Holing of child-car seat belts
Buttonholing size	**Standard : Max. 5 mm** **Special type part : Max. 10 mm** **Knife size used :** **6.4 to 31.8 mm (1/4' to 1-1/4')** **Buttonholing sewing length** **Standard : Max. 41 mm** **LBH-1795S : Max. 120 mm**		

2. Specifications

Sewing speed	Standard speed : 3,600 sti/min (Max. : 4,200 sti/min) (Max. : 3,300 sti/min when dry hook is used)
Needle	DPX5 #11J to #14J
Hook	DP type full-rotary hook
Needle rocking drive method	Drive by stepping motor
Feed drive method	Drive by stepping motor
Presser lifting drive method	Drive by stepping motor
Lift of presser foot	14 mm (Optional setting available) Max. : 17 mm (At the time of needle up by reverse run)
Cloth cutting knife drive method	By double-acting solenoid drive
Standard sewing shape	30 kinds
Number of patterns stored in memory	99 patterns
Motor used	Single phase 220/230/240 V, 3-phase 200 to 240 V, 1000 VA
Noise	- Equivalent continuous emission sound pressure level (LpA) at the workstation : A-weighted value of 80.0 dB ; (Includes ; KpA = 2.5 dB) ; according to ISO 10821- C.6.3 -ISO 11204 GR2 at 3,600 sti/min.

3. Standard sewing shape list

(1) Square type	(2) Round type	(3) Radial square type	(4) Radial type	(5) Radial straight bar-tacking type	(6) Radial taper bar-tacking type
PANEL DISPLAY 1	PANEL DISPLAY 2	PANEL DISPLAY 3	PANEL DISPLAY 4	PANEL DISPLAY 5	PANEL DISPLAY 6
(7) Eyelet square type	(8) Eyelet radial type	(9) Eyelet straight bar-tacking type	(10) Eyelet taper bar-tacking type	(11) Semilunar type	(12) Round square type
PANEL DISPLAY 7	PANEL DISPLAY 8	PANEL DISPLAY 9	PANEL DISPLAY 10	PANEL DISPLAY 11	PANEL DISPLAY 12
(13) Semilunar square type	(14) Semilunar straight bar-tacking type	(15) Semilunar taper bar-tacking type	(16) Eyelet semilunar type	(17) Eyelet round type	(18) Square radial type
PANEL DISPLAY 13	PANEL DISPLAY 14	PANEL DISPLAY 15	PANEL DISPLAY 16	PANEL DISPLAY 17	PANEL DISPLAY 18
(19) Square semilunar type	(20) Square round type	(21) Square straight bar-tacking type	(22) Square taper bar-tacking type	(23) Radial semilunar type	(24) Radial round type
PANEL DISPLAY 19	PANEL DISPLAY 20	PANEL DISPLAY 21	PANEL DISPLAY 22	PANEL DISPLAY 23	PANEL DISPLAY 24
(25) Semilunar radial type	(26) Semilunar round type	(27) Bar-tacking	(28) Bar-tacking, right cut	(29) Bar-tacking, left cut	(30) Bar-tacking, center cut
PANEL DISPLAY 25	PANEL DISPLAY 26	PANEL DISPLAY 27	PANEL DISPLAY 28	PANEL DISPLAY 29	PANEL DISPLAY 30
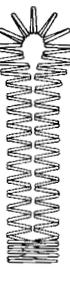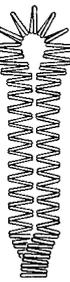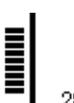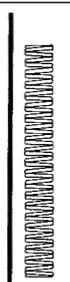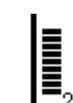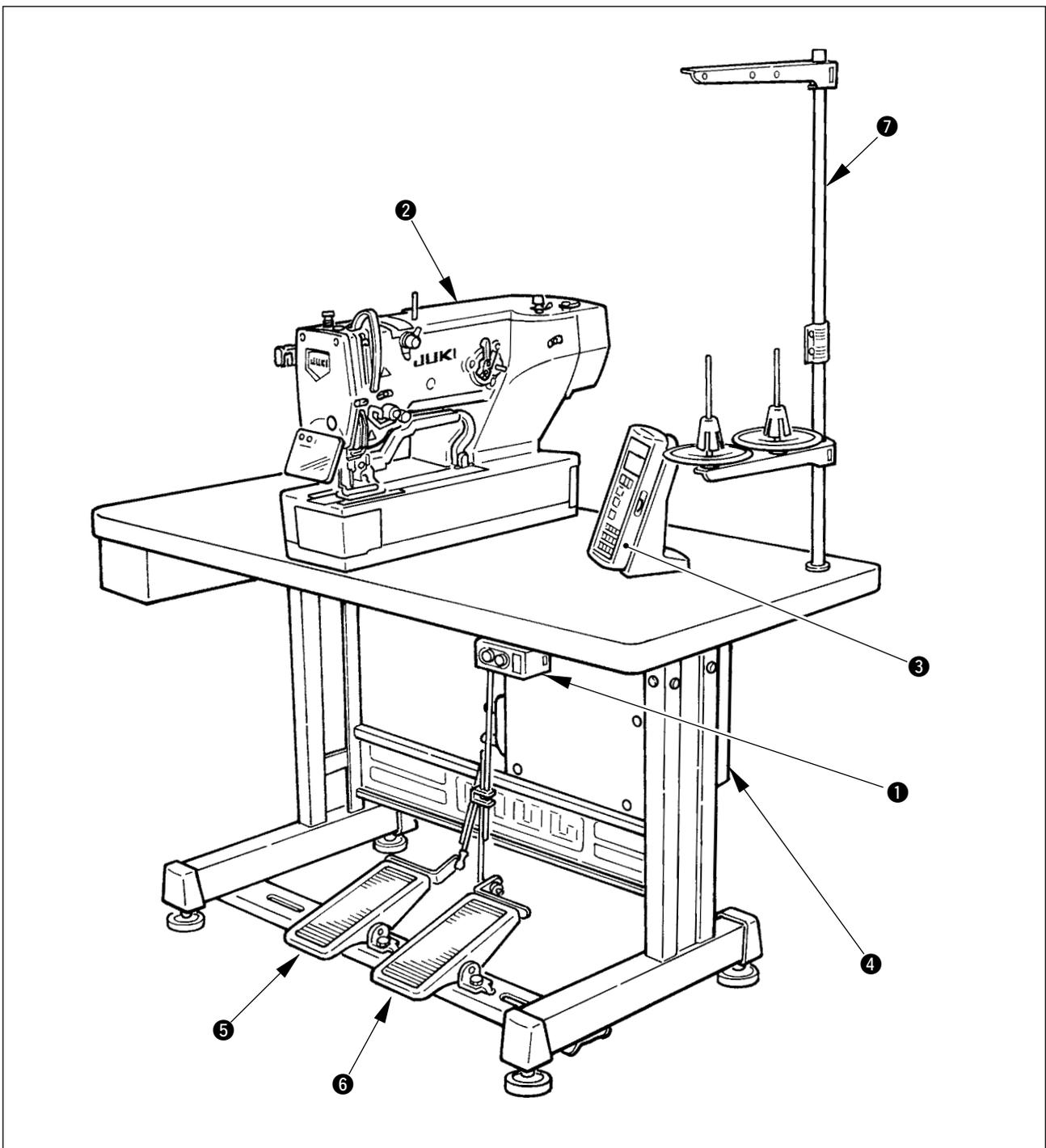
LBH-1790 consists of the following components.

❶	Power ON/OFF switch
❷	Machine head (LBH-1790)
❸	Operation panel
❹	Control box (MC-601)
❺	Presser lifting pedal
❻	Starting pedal
❼	Thread stand device

Ⅲ. INSTALLATION

⚠️ **WARNING :**
To prevent possible accidents caused by the fall of the sewing machine, perform the work by two persons or more when the machine is moved.

(1) Set-up of the table
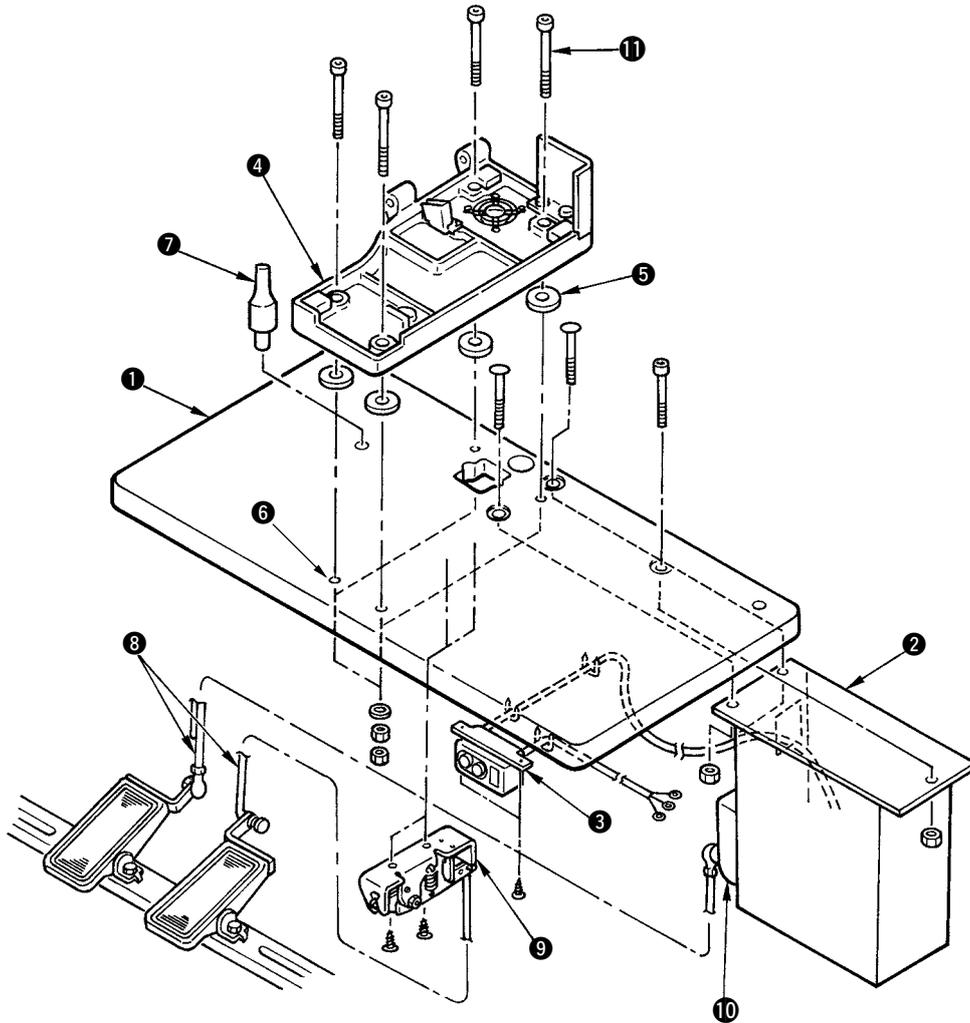
1) Securely install control box ❷ and power switch ❸ on table ❶.
2) Securely fix the respective power cables of power switch ❸.
3) Pass four bed base fixed screws ⓫ through bed base ❹.
4) Set rubber cushions ❺ to holes ❻ (4 places) for fixing bed base and fix bed base ❹.
5) Fix head support bar ❼ on table ❶.
6) After placing the sewing machine main unit on bed base ❹, connect pedal (right side) to pedal switch ❾, and pedal (left side) to pedal sensor ❿ respectively with connecting rods ❽ which have been supplied as accessories.

✋ **Adjust the positions of the pedals so that connecting rods ❽ and control box ❷ do not come in contact with each other.**

(2) Connecting the power source cord

・ **Voltage specifications**
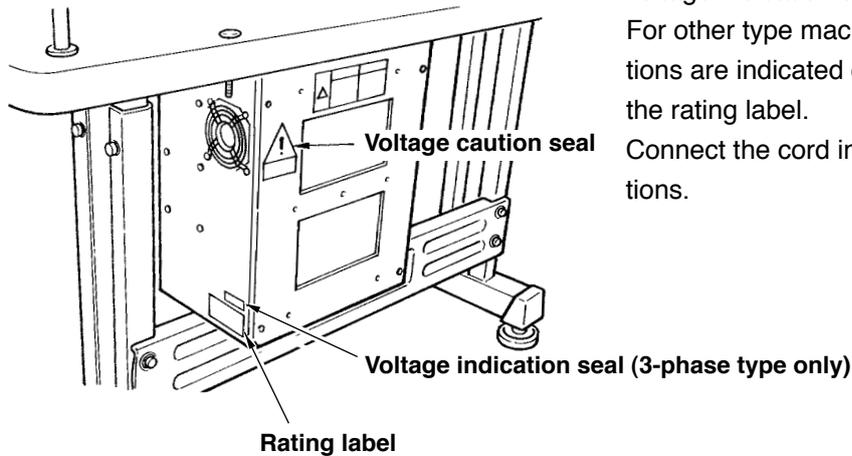
Power source specifications are indicated on the voltage indication seal. (3-phase type only)
For other type machines, power source specifications are indicated on the voltage caution seal and the rating label.
Connect the cord in accordance with the specifications.

・ **Connecting single phase 200V, 220V, 230V and 240V**
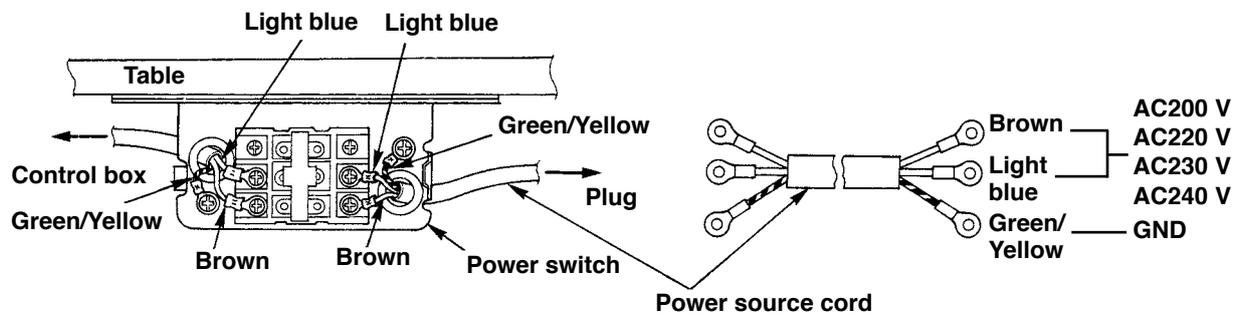
・ **Connecting three phase 200V, 220V and 240V**
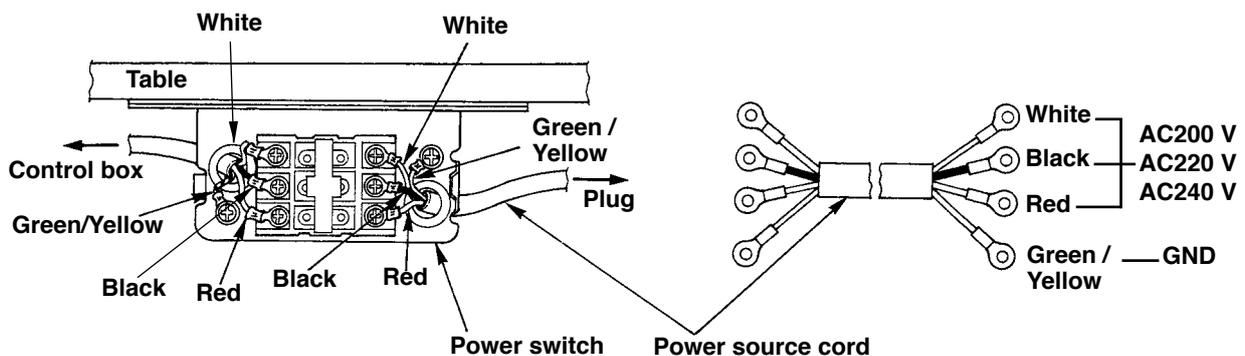
> **Caution**
> 1. Never use under the wrong voltage and phase.
> 2. When changing the voltage, refer to the item of "Changing the voltage of 100 / 200V".

(3) Changing the voltage of 100 / 200V

WARNING :
To prevent personal injuries caused by electric shock hazards or abrupt start of the sewing machine, carry out the work after turning OFF the power switch and a lapse of 5 minutes or more. To prevent accidents caused by unaccustomed work or electric shock, request the electric expert or engineer of our dealers when adjusting the electrical components.

It is adaptable to the voltage of single phase 100V to 120V/3-phase 200V to 240V by changing the voltage changeover connector mounted on FLT p.c.b.

(Caution) When the changing procedure is wrong, the control box will be broken. So, be very careful.

A

(Plug side)

WHITE — WHITE
BLACK — BLACK
RED — RED
GREEN/ YELLOW — GREEN/ YELLOW

B

(Plug side)

WHITE — WHITE
BLACK — BLACK
RED — RED
GREEN/ YELLOW — GREEN/ YELLOW

C

(Plug side)

WHITE — WHITE
BLACK — BLACK
RED — RED
GREEN/ YELLOW — GREEN/ YELLOW
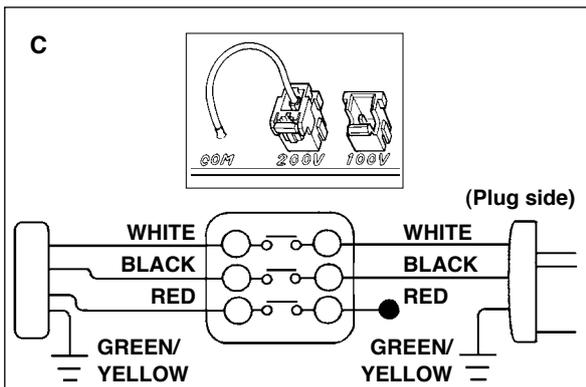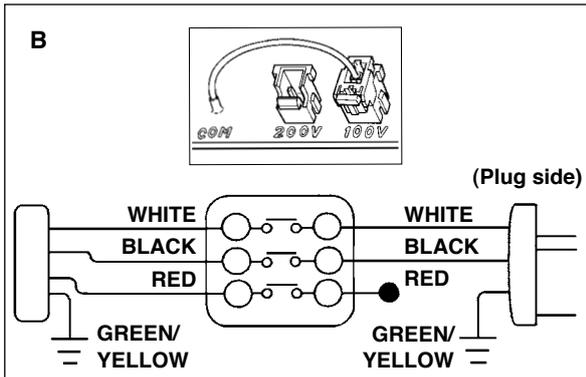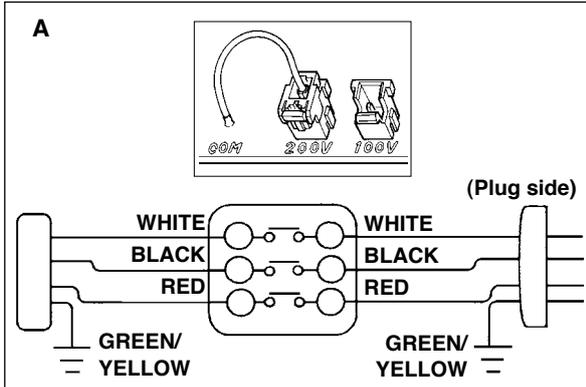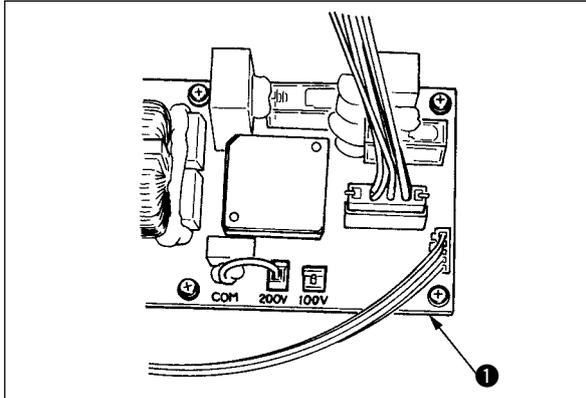
Changing procedure of the changeover connector
1. Turn OFF the power source with the power switch after confirming that the sewing machine has stopped.
2. Draw out the power cord from the power plug socket after confirming that the power switch is turned OFF. Then wait for five minutes or more.
3. Remove the front cover.
4. Remove four screws fixing the rear cover of the control box and slowly open the rear cover.

A. In case of using with 3-phase 200V to 240V
- Changing the changeover connector
  Connect to 200V the 100/200V changeover connector of FLT p.c.b. ❶ located on the side of the Box Side of the control box.
- Connect the crimp style terminal of AC input cord to the power plug as shown in the figure.

B. In case of using with single phase 100V to 120V
- Changing the changeover connector
  Connect to 100V the 100/200V changeover connector of FLT p.c.b. ❶ located on the side of the Box Side of the control box.
- Connect the crimp style terminal of AC input cord to the power plug as shown in the figure.

(Caution) **Securely perform the insulation treatment to the red terminal which is not used with insulation tape or the like. (When the insulation is insufficient, there is a danger of electric shock or leakage current.)**

C. In case of using with single phase 200V to 240V
- Changing the changeover connector
  Connect to 200V the 100/200V changeover connector of FLT p.c.b. ❶ located on the side of the Box Side of the control box.
- Connect the crimp style terminal of AC input cord to the power plug as shown in the figure.

(Caution) **Securely perform the insulation treatment to the red terminal which is not used with insulation tape or the like. (When the insulation is insufficient, there is a danger of electric shock or leakage current.)**

5. Check that the change has been performed without fail before closing the rear cover.
6. Be careful that the cord is not pinched between the rear cover and the control box main unit. Close the rear cover while pressing the lower side of rear cover, and tighten four screws.

(4) Installing the sewing machine main unit
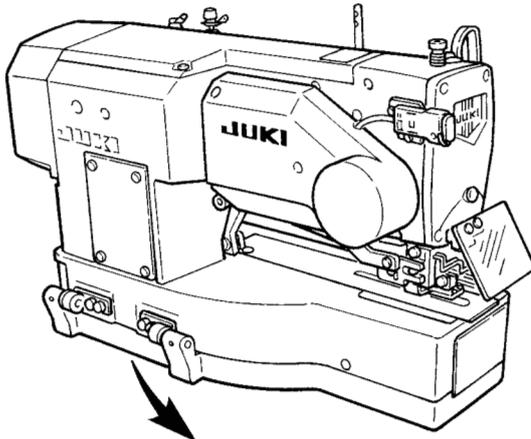
WARNING :
To prevent possible accidents caused by the fall of the sewing machine, perform the work by two persons or more when the machine is moved.

1) Place hinge plates ❶ and shaft bearings ❷-1 (rubber) and ❷-2 (metal) in two places on the head base and fix the hinge plates to the machine head with setscrews ❸ in two places.

Caution
When the rubber hinge and metal fitting hinge are installed in reverse order, it is dangerous since the sewing machine shakes when it is tilted. So, be careful.

❷ -1 (rubber)

❶

❸

❷ -2 (metal)
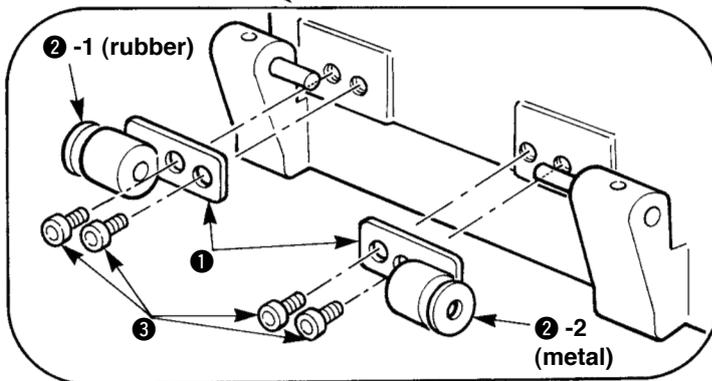
(5) Tilting the sewing machine head

WARNING :
When tilting/raising the sewing machine head, perform the work so as not to allow your fingers to be caught in the machine. In addition, to avoid possible accidents caused by abrupt start of the machine, turn OFF the power to the machine before starting the work.
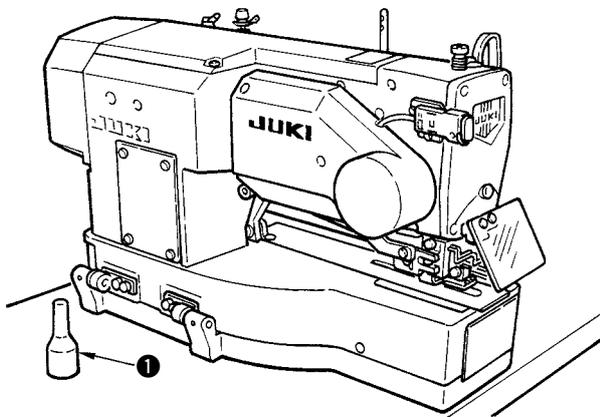
When tilting the sewing machine head, tilt quietly the sewing machine until head support bar ❶ comes in contact with it.

Caution
1. Make sure that sewing machine head support bar ❶ is placed on the table before tilting the sewing machine.
2. To protect fall-down, be sure to tilt the sewing machine in a level place.

❶

(6) Connecting the safety switch connector
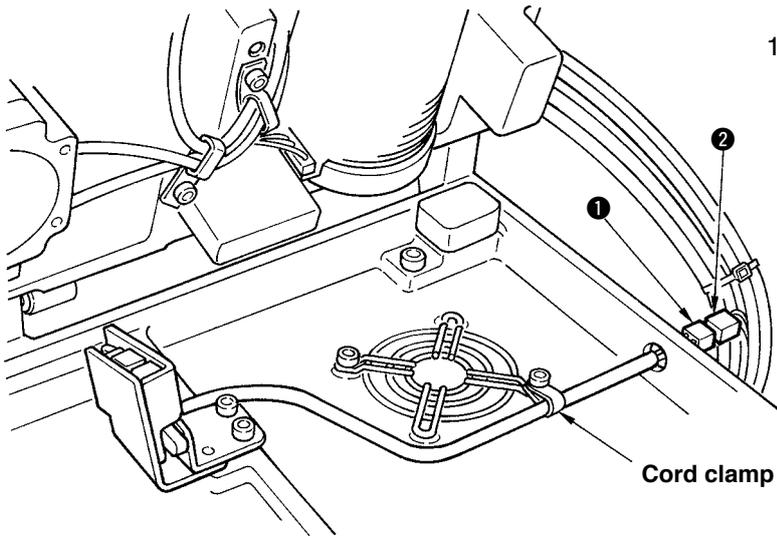
1) Connect safety switch connector
❶ with connector ❷ located on the
machine head side.

Cord clamp

(7) Installing the hook oil shield plate
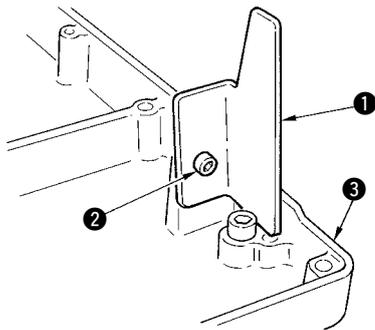
Install hook oil shield plate ❶ onto bed base ❸ with
setscrew ❷.

> **Fix the sewing machine so that it
> does not come in contact with hook
> oil shield plate ❶ when raising/tilting
> the sewing machine.**
>
> Caution

(8) Installing the operation panel
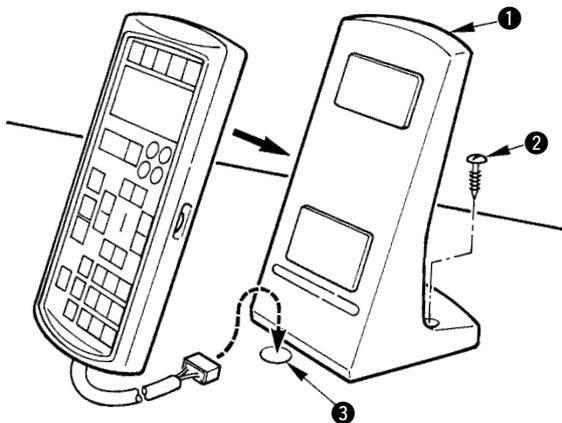
Fix operation panel attaching plate ❶ on the table
with woodscrew ❷ and pass the cable through hole
❸ in the table.

– 8 –

(9) Connecting the cords

Perform the connection of the cords as shown in the figure below.

Sewing machine head

CN14
CN16
CN37
CN38
CN42
CN39
CN41
CN34

Operation panel

Electric bobbin winding device (optional)

CN44

SDC circuit board

CN16

CN14

MAIN circuit board

CN34

CN44

CN38
CN39
CN41

CN42

SDC circuit board

CN16

CN14

Cord clamp A

❶
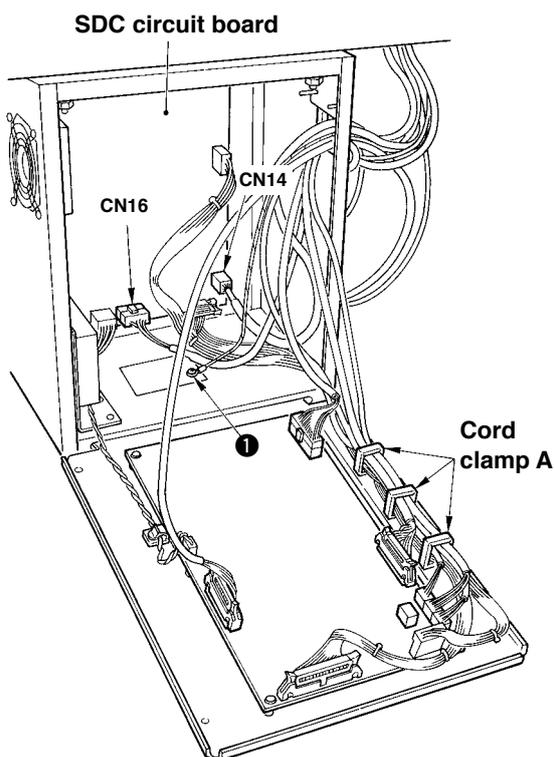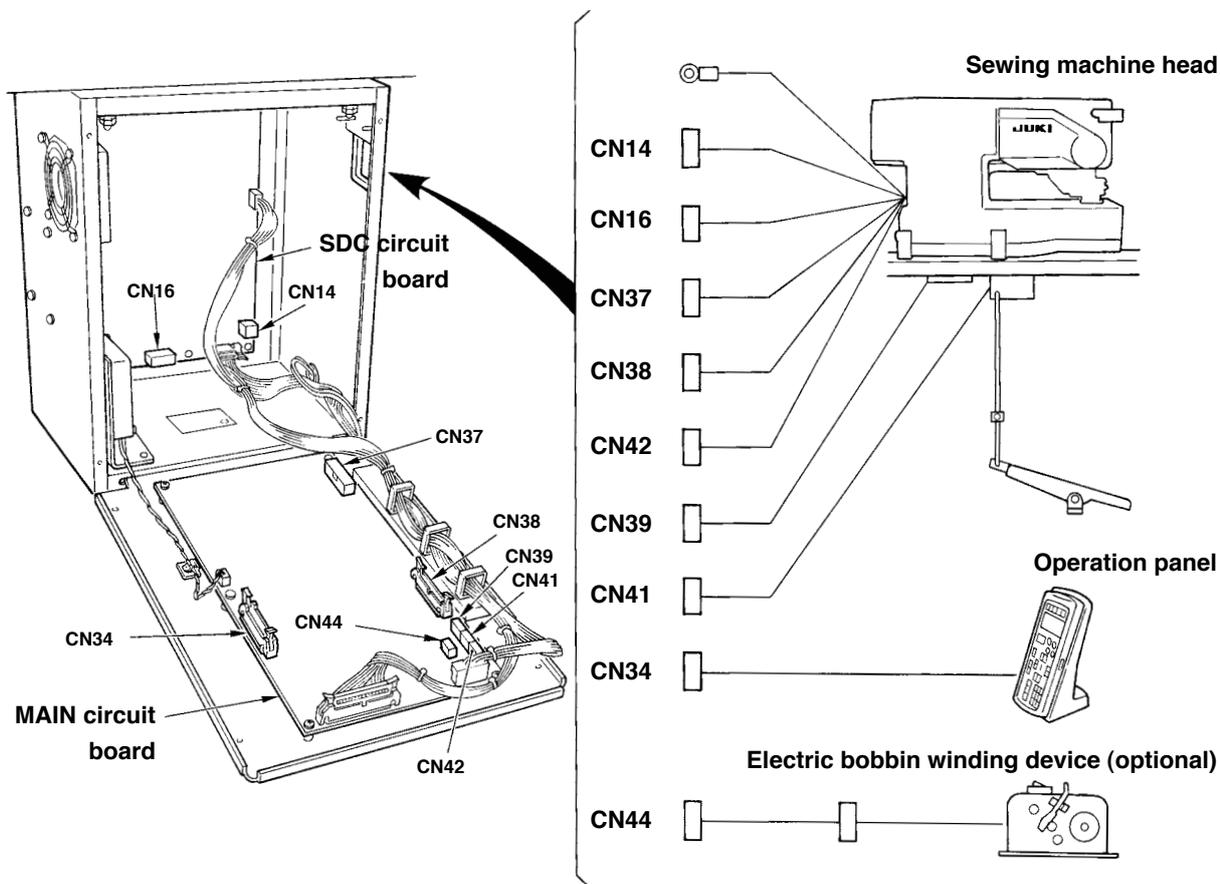
1) Pass 4 cords (CN38, 39, 41, and 42) connecting to the right side among the cords connecting to MAIN circuit board through cord clamp A as shown in the figure, and connect them to the respective connectors. Connect CN37 to the connector without passing through cord clamp A.
In addition, when using the electric bobbin winding device (optional), similarly pass the cord of the bobbin winding device through the cord clamp and connect it to CN44.

2) Directly connect the cord from the operation panel connecting to the left side of MAIN circuit board   to CN34.

3) Connect the cords connecting to SDC circuit board directly to CN14 and CN16.

4) Fix the earth wire with the setscrew ❶.

(10) Managing the cord

1) Slowly tilting the sewing machine, check that the cords are not forcibly pulled.
2) Fix the cords with cord setting plate ❶ as shown in the figure.

⚠ Caution   **When you tilt the sewing machine, make sure that the sewing machine head support bar ❷ is placed on the table.**
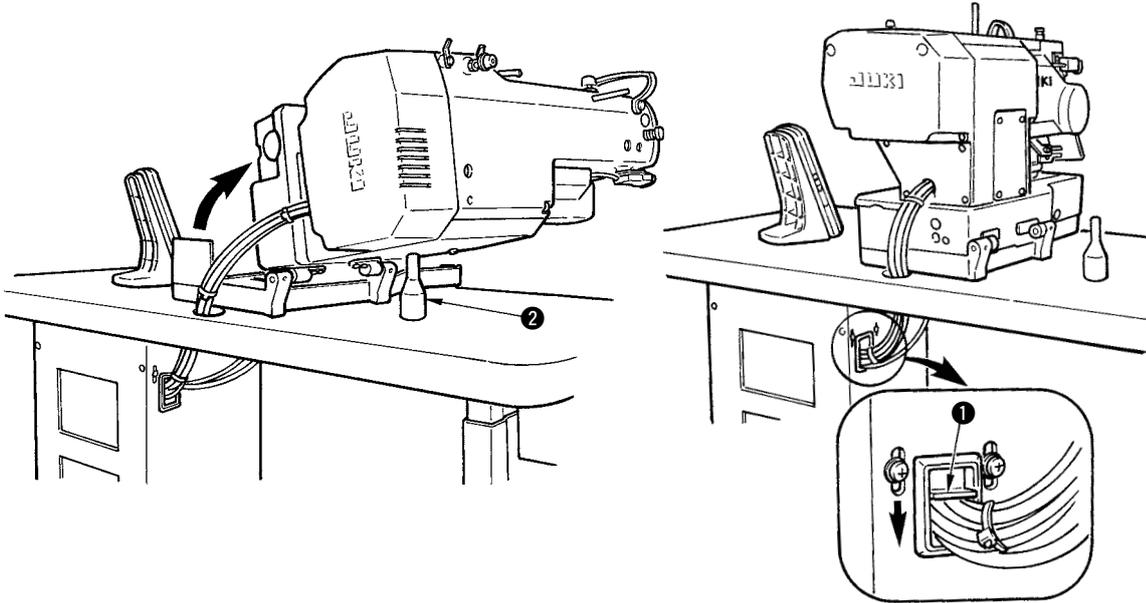
(11) Installing the eye protection cover

⚠ **WARNING :**
Be sure to attach this cover to protect the eyes from the disperse of needle breakage.

Be sure to install and use eye protection cover ❶ and use the sewing machine.

When placed longitudinally
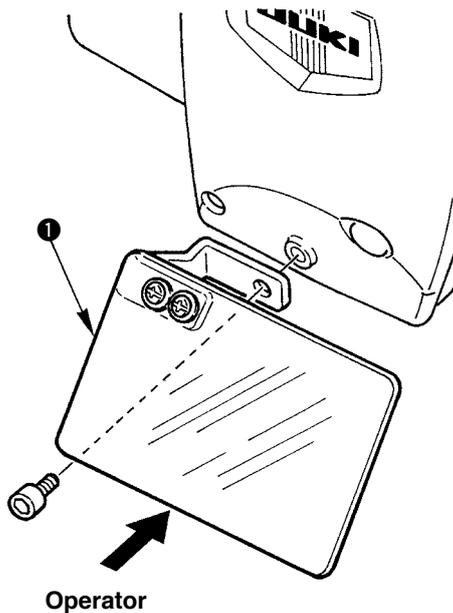
When placed horizontally

Operator

Operator
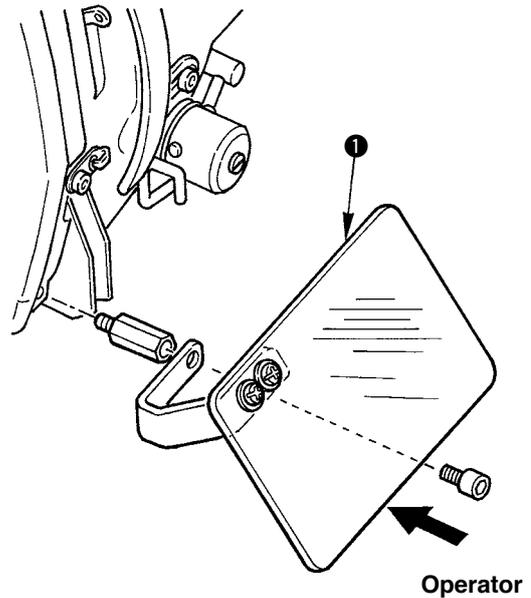
(12) Fixing the temporary stop switch

The temporary stop switch has been in the state as shown in figure A at the time of delivery.
Loosen setscrew ❶ and set the switch in the state as shown in figure B, and fix it with setscrew ❶ together with setscrew ❷ supplied with the machine.

A

B
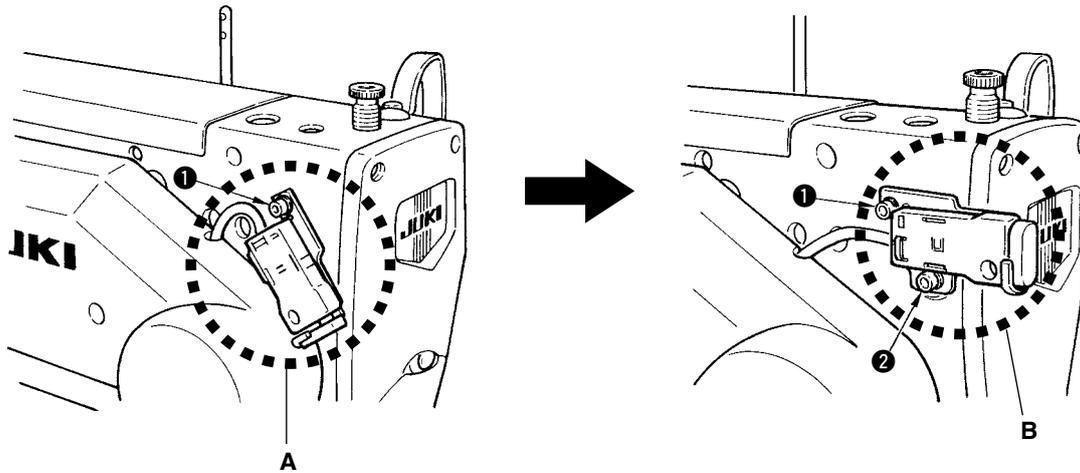
(13) Thread guide rod

Thread guide rod

Securely fit the thread guide rod so that two side holes in the thread guide rod face the thread guide.
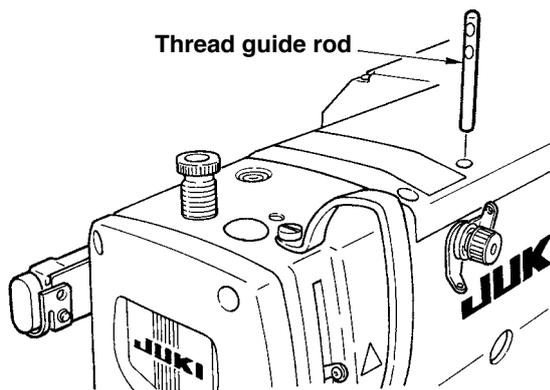
(14) Installing the thread stand

1) Assemble the thread stand, and set it in the hole in the top right corner of the machine table.
2) Tighten locknut ❶ to fix the thread stand.
3) When ceiling wiring is possible, pass the power cable through spool rest rod ❷.
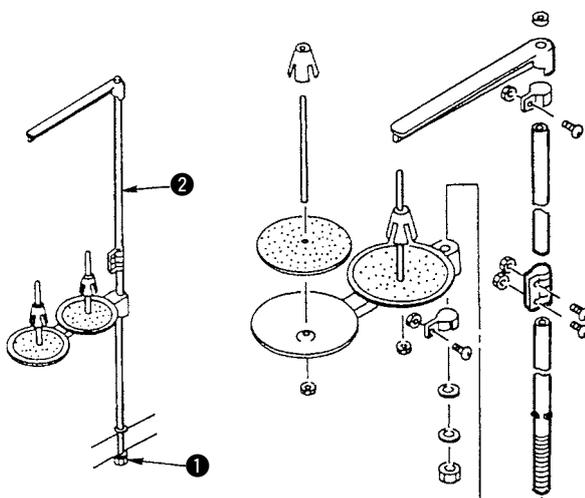
Ⅳ. PREPARATION BEFORE OPERATION

1. Lubrioation

⚠ **WARNING :**
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

Detailed diagram of oil amount adjusting section

Oil pipe

❸

❷

Decrease

Oil amount

Increase
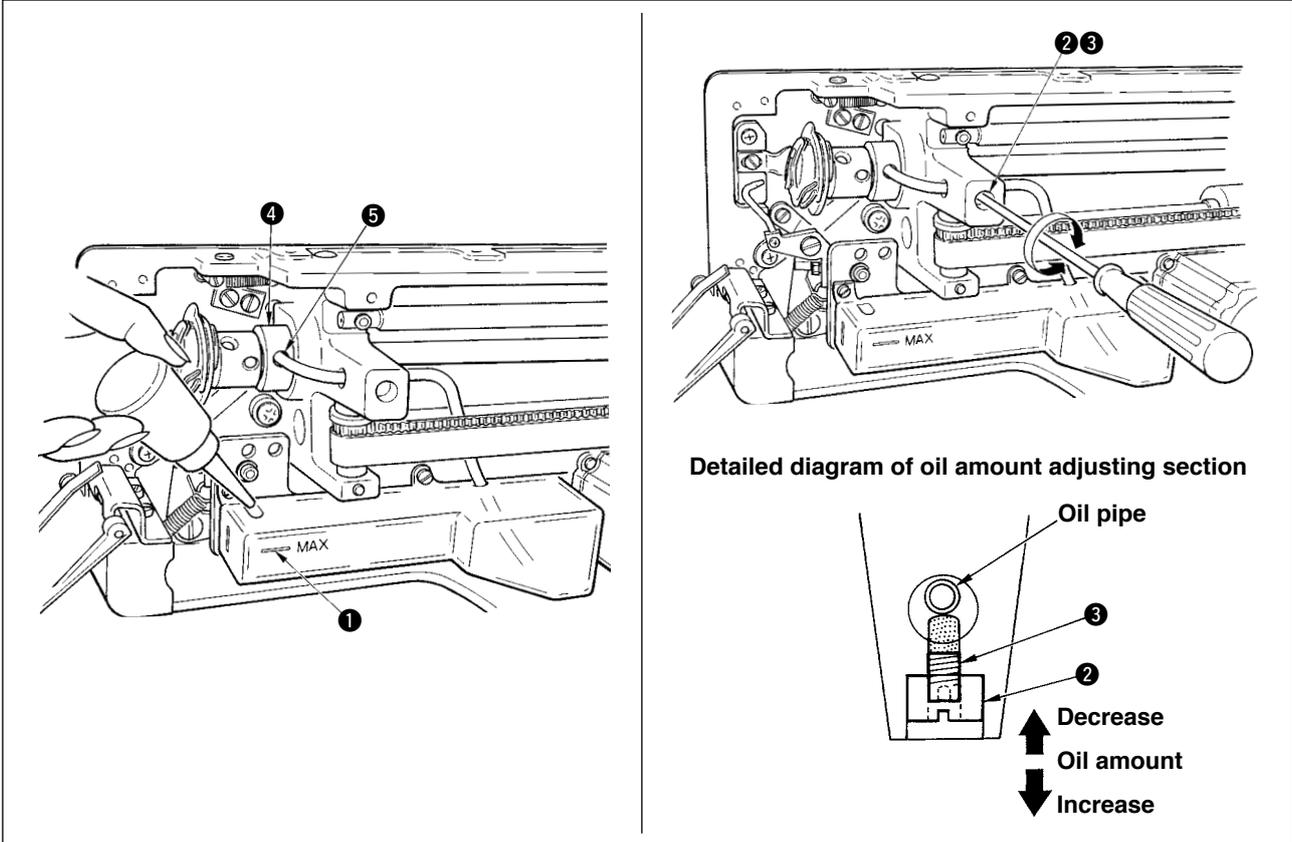
1) Lubricating oil to oiling tank
- ○ Fill the oiling tank with New Defrix Oil No.1 up to the level indicated by "MAX" ❶.

2) Adjusting the lubrication for the sewing hook
- ○ Adjust the amount of oil supplied to the sewing hook by loosening lock nut ❷ and turning oil amount adjusting screw ❸.
- ○ Amount of supplied oil is reduced when turning the screws ❸ clockwise.
- ○ Fix the screw with lock nut ❷ after adjusting the lubrication for the sewing hook.
- ○ When you first operate your sewing machine after set-up or after an extended period of disuse, remove the bobbin case and apply a few drops of oil to the hook race. In addition, apply a few drops oil from oiling hole ❺ in hook driving shaft front metal ❹ to soak the inside felt in oil.

2. Inserting the needle

⚠ **WARNING :**
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.
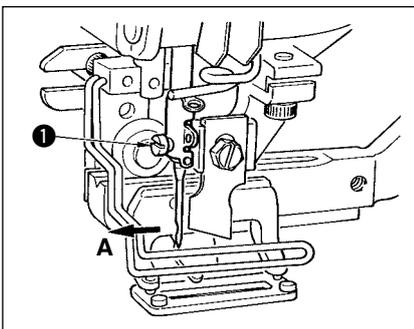
Hold needle with its recessed part facing toward the operator side A, insert the needle fully into the needle clamping hole, and tighten needle setscrew ❶. Use a DPx5-(#11J, #14J).

⚠ Caution **When attaching the needle, turn OFF the power to the motor.**

3. Threading the needle-thread

Cotton thread, spun thread   Synthetic filament thread
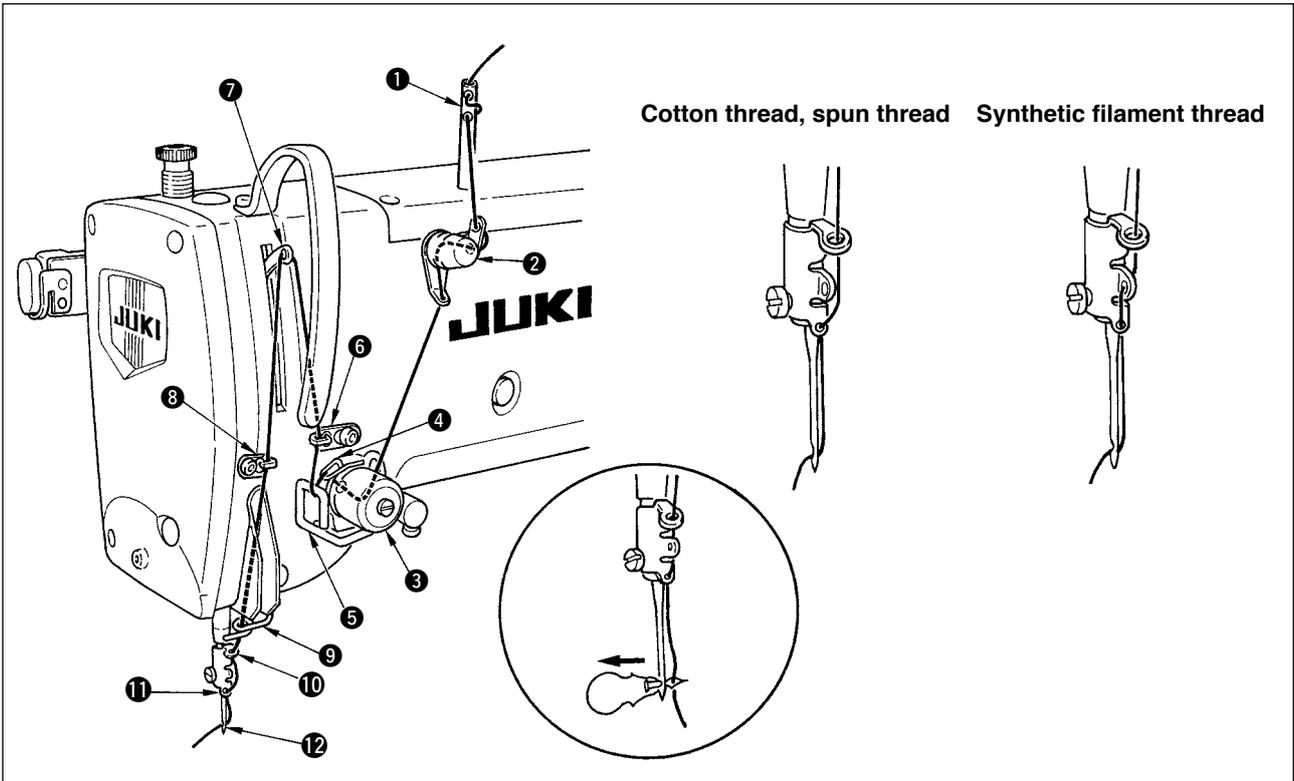
Pass the needle thread in the order ❶ to ⓬ as shown in the figures.
The threading can be done easily by using the needle threader supplied with the machine.
Change the thread guide threading method according to the thread to be used.

4. Threading the bobbin case

Purl stitch   Whip stitch

Bobbin   Bobbin case
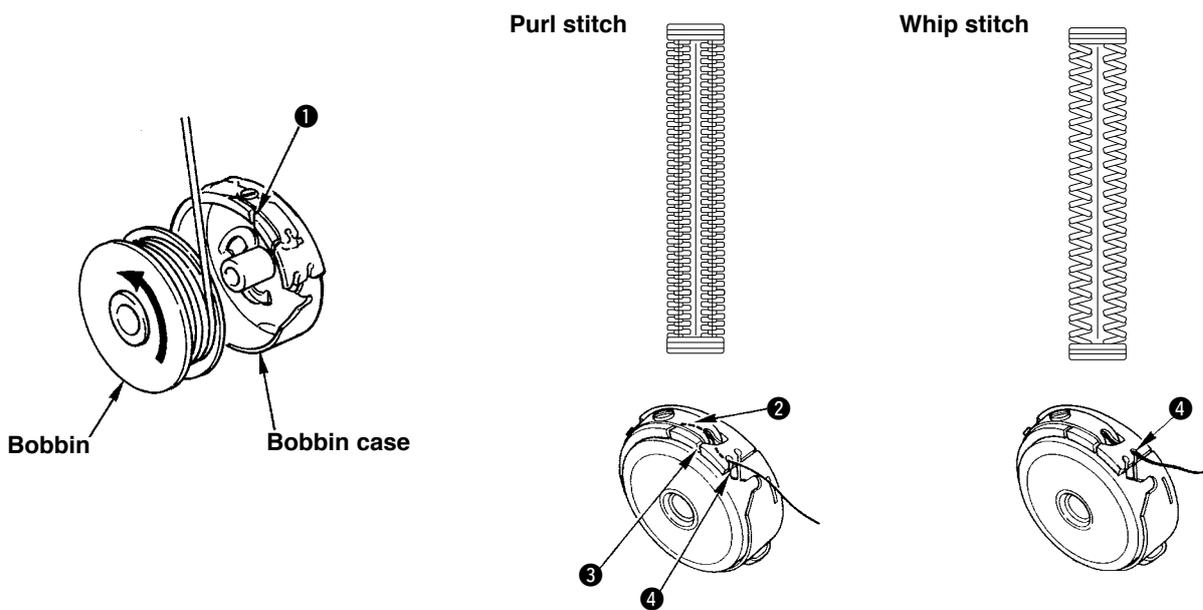
Rotating direction of bobbin and threading
1) Fit the bobbin so that it rotates in the direction of the arrow.
2) Pass the thread through thread slit ❶, then through under the tension spring ❷, again through thread slit ❸, and pull the thread from ❹.
3) Threading at ❹ for purl stitching is different from that for whip stitching. So, be careful.

5. Adjusting the bobbin thread tension
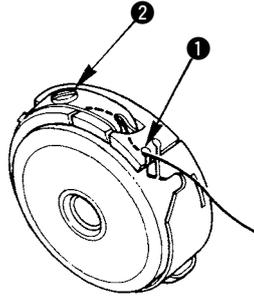
Adjust the bobbin thread tension as given below when the bobbin thread is pulled up at the position where thread slit ❶ of bobbin case comes up.

Purl stitch	0.05 to 0.15N	To such an extent that bobbin case quietly comes down when holding thread end coming from bobbin case and shaking it quietly up and down.
Whip stitch	0.15 to 0.3N	To such an extent that bobbin case barely comes down when holding thread end coming from bobbin case and shaking it somewhat strongly.

Turning tension adjust screw ❷ clockwise will increase bobbin thread tension, and turning it counterclockwise will decrease the tension.
Adjust the bobbin thread tension to lower for synthetic filament thread, and to higher for spun thread.
The thread tension is higher by approximately 0.05N when the bobbin case is set to the hook since idle-prevention spring is provided.

> Caution
> **When bobbin thread tension is adjusted, check the needle thread tension setting of the memory switch. (See P.44.)**

6. Installation of bobbin case

> ⚠ **WARNING :**
> **To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.**
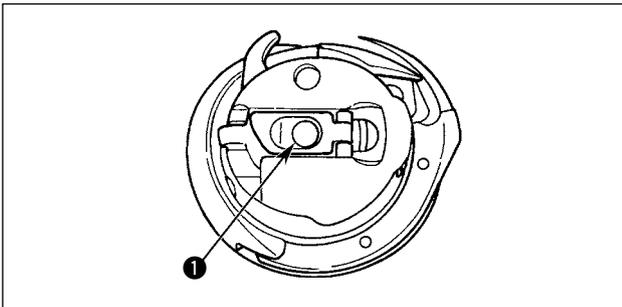
1) Lift up and hold bobbin case latch lever between two fingers.
2) Push the bobbin case into the hook so that it is supported by the hook shaft ❶ and then snap in the latch lever.
   Press the bobbin case until the predetermined position is reached, and it will click.

> Caution
> 1. **If the bobbin case is out of the predetermined position, it can jump out from the hook to cause the needle thread to tangle on the hook shaft. Check to be sure that the bobbin case is properly installed in the correct position.**
> 2. **There is a difference in the shape of bobbin case between the standard hook and the dry one. They have nothing in common with each other.**

7. Installing the knife
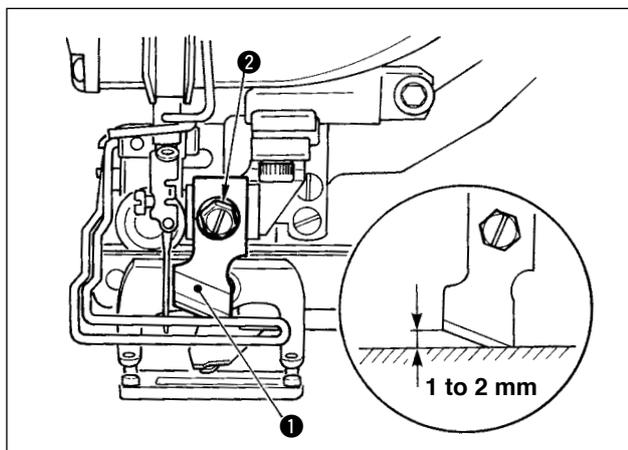
When replacing the knife with a new one, perform as follows.

1) Knife ❶ can be easily removed together with the washer when removing knife retaining screw ❷.

2) Adjust so that the knife, when lowered the knife bar by hand, is spaced 1 to 2 mm away from the top surface of the throat plate as illustrated in the sketch. Then, be sure to place the washer and tighten the knife retaining screw.

1 to 2 mm

Inch → mm CONVERSION TABLE

Knife size	Indication of mm
1/4	6.40
3/8	9.50
7/16	11.10
1/2	12.70
9/16	14.30
5/8	15.90
11/16	17.50
3/4	19.10
13/16	20.60
7/8	22.20
1	25.40
1 1/8	28.60
1 1/4	31.80
1 3/8	34.90
1 1/2	38.10

When the cloth cutting knife you have is indicated in inch, set the cloth cutting length (knife size) in mm using the inch → mm conversion table. (See P.29.)

Ⅴ. OPERATION OF THE SEWING MACHINE

1. Explanation of the operation panel switch
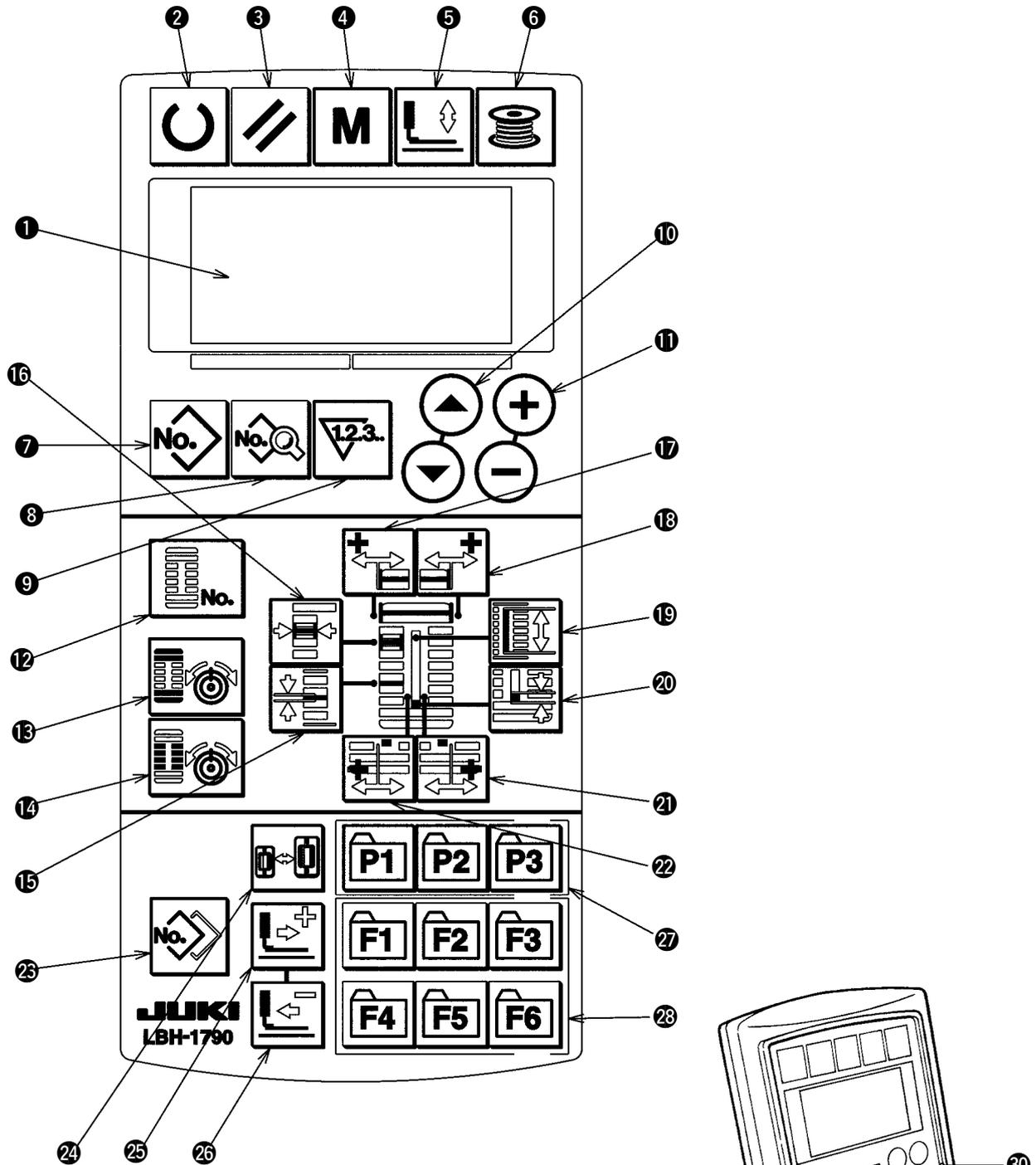
There are 3 states below according to back-light colors.

Blue : Input mode .... Data change is possible.

Green : Sewing mode .... Sewing possible state

Yellow : Error state .... Some error occurs.

No.	NAME	FUNCTION	No.	NAME	FUNCTION
❶	LCD display	Various data such as pattern No., shape, etc. are displayed.	⑯	OVEREDGING WIDTH key	This key selects overedging width display.
❷	READY key	Press this key when starting sewing. Every time this key is pressed, change-over of sewing ready set state and data set state can be performed.	⑰	BAR-TACKING WIDTH, LEFT key	This key selects left side of bar-tacking width compensation display.
❸	RESET key	Press this key when releasing error, travelling the feed mechanism to its initial position, counter resetting, etc.	⑱	BAR-TACKING WIDTH, RIGHT key	This key selects right side of bar-tacking width compensation display.
❹	MODE key	Press this key when changing data of the memory switches.	⑲	CLOTH CUT LENGTH key	This key selects cloth cut length display.
❺	PRESSER key	This key lifts or lowers the presser. When the presser goes up, the needle bar travels to the origin and when it comes down, the needle bar travels to the right.	⑳	CLEARANCE key	This key selects clearance display.
❻	WINDER key	This key is pressed when performing bobbin winding.	㉑	KNIFE GROOVE WIDTH, RIGHT key	This key selects knife groove width, right compensation display.
❼	PATTERN NO. key	This key selects pattern No. display.	㉒	KNIFE GROOVE WIDTH, LEFT key	This key selects knife groove width, left compensation display.
❽	DATA key	This key selects data display.	㉓	COPY key	Press this key when copying pattern.
❾	COUNTER key	Thus key selects counter display.	㉔	PRESSER SELECTION key	This key selects presser type.
❿	ITEM SELECTION key	This key selects pattern No., data No., etc.	㉕	FORWARD key	This key makes the feed mechanism travel forward stitch by stitch.
⓫	DATA CHANGE key	This key changes various data.	㉖	BACKWARD key	This key makes the feed mechanism travel backward stitch by stitch.
⓬	SHAPE key	This key selects shape display.	㉗	PATTERN REGISTRATION key	This is a short cut key that pattern registration is available. Registration of shortcut to setting display of an optional pattern is possible. For the setting procedure, see P.36.
⓭	THREAD TENSION AT PARALLEL SECTION key	This key selects thread tension at parallel section display.	㉘	PARAMETER REGISTRATION key	This is a short cut key that parameter registration is available. Registration of shortcut to setting display of an optional pattern, sewing parameter or adjustment data is possible. For the setting procedure, see P.37.
⓮	THREAD TENSION AT BAR-TACKING SECTION key	This key selects thread tension at bar-tacking section display.	㉙	Speed variable resister	Speed increases when this is lifted upward and decreases when this is lowered downward.
⓯	PITCH key	This key selects pitch of parallel section.	㉚	LCDadjustment variable rsistor	Light and shade of LCD display can be adjusted.

2. Basic operation of the sewing machine

1) Turn ON the power switch.

First, check that presser type A which has been set is the same as that of the presser actually mounted. For checking and setting procedures, refer to **4. Inputting the presser type.**

2) Select the pattern No. you desire to sew.

When the power is turned ON, the pattern No. B which is selected at present flashes on and off. When you desire to change it, press ITEM SELECTION key ⑩ (▲)(▼) and select the No. you desire to sew. When you purchase the sewing machine, pattern No. 1 to 10 described in **11.Changing sewing data** have been registered. Select the pattern No. you sesire to sew from among these numbers. (The No. with which the pattern has not been registered is not displayed.)
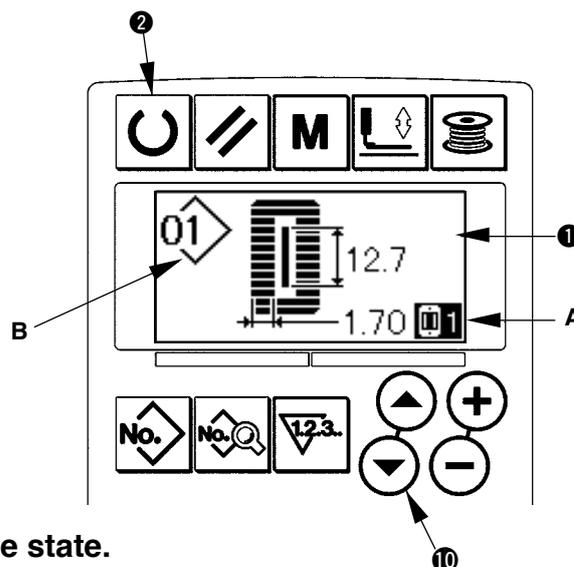
3) Set the sewing machine to sewing possible state.

Press READY key ❷ |U| and the back-light of LCD display ❶ changes from blue color to green color, and sewing is possible.

4) Start sewing.

Set the sewing product to the presser portion, and operate the pedal to start the sewing machine, and sewing starts. When you purchase the sewing machine, 2-pedal type has been set. However, pedal operating procedure can be selected from among three ones. Select the operating procedure you desire and use the sewing machine. → **3. How to use the pedal**

3. How to use the pedal

This sewing machine can be used by selecting the pedal operating procedure from among 3 types below. Select the operating procedure you desire for working efficiency and use the sewing machine.

(1) Setting procedure of the pedal type

1) Call the pedal type setting parameter.

Press MODE key ❶ |M| for as long as three seconds in the state of the input mode and memory switch (level 2) edit screen A is displayed. When the pedal type selection parameter ▮K01▮ is not displayed, press ITEM SELECTION key ⑩ (▲)(▼) to select the pedal type.

2) Select the pedal type

Press DATA CHANGE key ⑪ (+)(−) and the picture is changed as shown in the illustration below. Select the pedal type B you desire.

2-pedal   1-pedal   1-pedal
(Without intermediate position)   (With intermediate position)

(2) Explanation of pedal motion

2-pedal type	1-pedal (Without intermediate position)	1-pedal (With intermediate position)
Initial position Presser : Intermediate position ② or Sewing position ③ **1) Setting of sewing product** (Presser goes up as high as the pedal toe down amount of the left side pedal.) **2) Start of Sewing** (Sewing starts when the right side pedal is depressed.) **3) End of sewing** (Presser automatically goes up to Intermediate position ②.)	**Initial position** Presser : Maximum position ① **1) Setting of sewing product** **2) Confirmation of setting of sewing product** (Presser comes down to Cloth setting position ③ when the first step of the right side pedal is depressed.) **3) Start of sewing** (Sewing starts when the second step of the right side pedal is depressed.) **4) End of sewing** (Presser automatically goes up to Maximum position ①)	**Initial position** Presser : Maximum position ① **1) Setting of sewing product** **2) Confirmation of setting of sewing product** (Presser comes down to Intermedite position ② when the first step of the right side pedal is depressed.) **3) Confirmation of start of sewing** (Presser comes down to Cloth setting position ③ when the second step of the right side pedal is depressed.) **4) Start of sewing** (Sewing starts when the third step of the right side pedal is depressed.) **5) End of sewing** (Presser automatically goes up to Maximum position ①.)

Cloth

* Height of the respective positions of ① to ③ described on the left side can be set or changed by the memory switches.

→ **20. Method of changing memory switch data**

・Pedal switch setting

Attach or remove the screw shown in the figure according to the setting of the memory switch.

Remove the screw.

・2-pedal type
・1-pedal (Without intermediate position)

・1-pedal (With intermediate position)

Attach the screw.

(1) Setting procedure of the presser type

1) Call the presser type setting parameter.

Press PRESSER SELECTION key ㉔ [⓿⇄⓿] and

memory switch (level 1) edit screen A is displayed.

2) Select the presser type.

Press DATA CHANGE key ⓫ (+)(−) , and the picture is changed as shown in the illustration below. Set the presser type B actually mounted on the sewing machine referring to **Table of presser type** below.
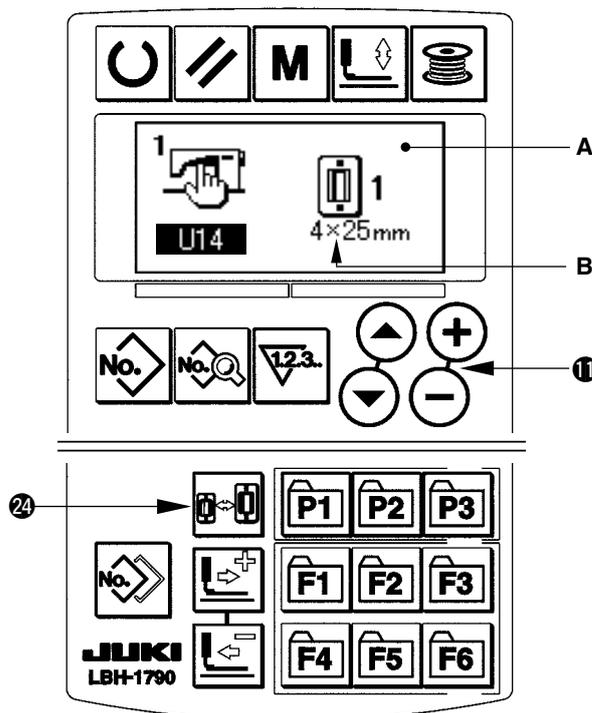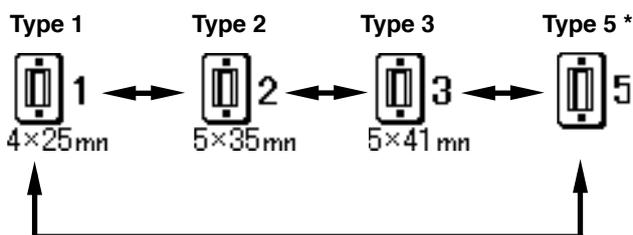
(2) Table of presser type

Set the number in the frame of engraved part number of presser to the type of presser.

	Type	Part No. of presser foot ●
[▯]1 4×25mm	Type 1	B151177[1]000 *
[▯]2 5×35mm	Type 2	B151177[2]000 *
[▯]3 5×41mm	Type 3	B151177[3]000 *
[▯]5	Type 5 *	–
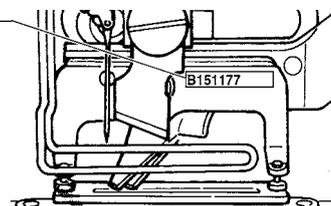
* Set type 5 when using the presser other than type 1 to 3. Change [U15] Presser size width and [U16] Presser size length of the memory switch (level 1) to adjust to the presser to be used.
→ Refer to **20. Method of changing memory switch data.**

* When using type 5 with stitch width of 6 mm or more and 41 mm or more in length, it is necessary to replace components such as presser arm, feed plate, etc.

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5. Performing pattern selection

(1) Selection from the pattern selection screen

1) Set the mode to the input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to change the pattern. When the back-light shows the sewing mode in green color, press READY key ❷

⟳ to change over to the input mode.

2) Call the pattern selection screen.

Press PATTERN No. key ❼ 🔑 , and pattern selection screen A is displayed.
Pattern No. B which is selected at present flashes on and off.

3) Select the pattern.

Press ITEM SELECTION key ❿ ⌃ ⌄ , and the patterns which have been registered are changed over in order and displayed. Here, select the No. you desire to sew.

(2) Selection by means of the register key

This sewing machine can register the pattern No. you desire with the register switch. When the pattern is registered once, pattern selection can be performed by pressing only the switch.

→ Refer to **15. Using pattern register key.**

6. Changing needle thread tension

Needle thread tension can be changed while performing trial sewing since the data related to the needle thread tension can be set by the sewing mode as well.

1) Call thread tension at parallel section setting data.

Press THREAD TENSION AT PARALLEL SECTION key ⑬ 🔲, and sewing data edit screen A is displayed.

2) Change thread tension at parallel section.

Press DATA CHANGE key ⑪ ⊕ ⊖, and set value B goes up or comes down and the thread tension can be changed. The relation between the finish of sewing and the set value is as shown in the illustration below. Set the value referring to the illustration.

3) Call thread tension at bar-tacking section setting data.

Press THREAD TENSION OF BAR-TACKING SECTION key ⑭ 🔲, and sewing data edit screen C is displayed.

4) Changing the needle thread tension at bar-tacking section

Press DATA CHANGE key ⑪ ⊕ ⊖, and set value D goes up or comes down and the thread trension can be changed. The relation between the finish of sewing and the set value is as shown in table below. Set the value referring to the table.

* For the tension other than that at parallel section and bar-tacking section, refer to **11. Changing sewing data** and **20. Method of changinf memory switch data.**
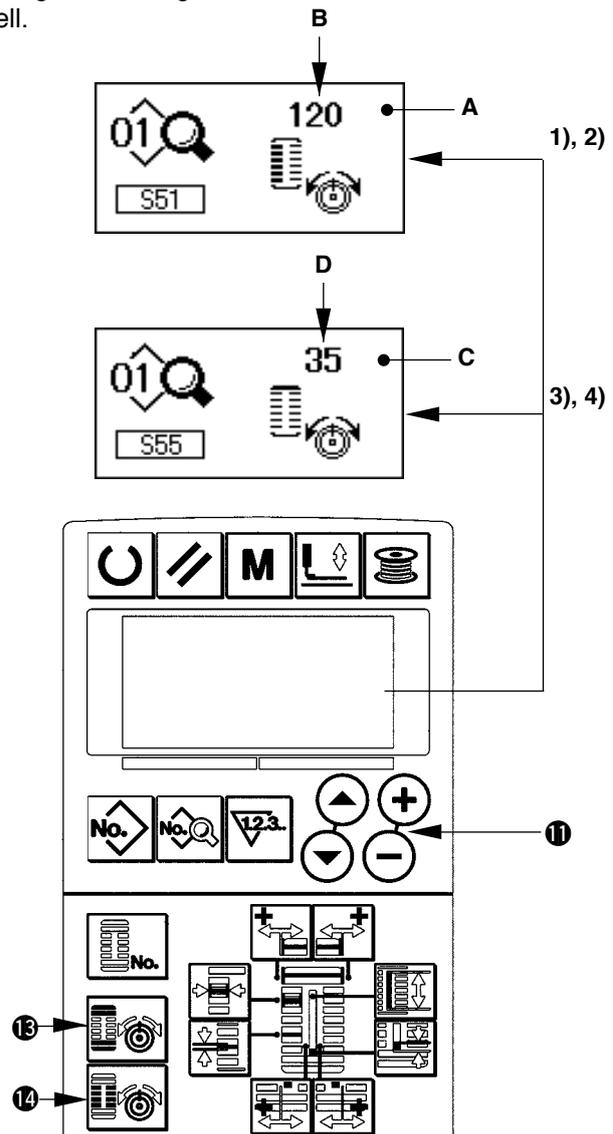
Set value of tension at ① parallel section and ② bar-tacking section

		Set value on panel		
		⊖	Initial value	⊕
Purl stitch	① Tension at parallel section	Crest is lowered.	120	Crest is raised.
	② Bar-tacking tension	Thread tension is decreased.	35	Thread tension is increased.
Whip stitch	③ Tension at parallel section	Thread tension is decreased.	60	Thread tension is increased.
	④ Bar-tacking tension	Thread tension is decreased.	60	Thread tension is increased.

For the eyelet radial shape, set the bar-tacking tension first to approximately 120 and make the balance of stitches.

Purl stitch and Whip stitch
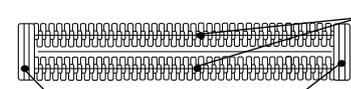
Purl stitch
When applying higher tension to the needle thread to permit it to pass straight through fabric, the purl stitch is formed by the bobbin thread which is pulled over from both sides to the center line.
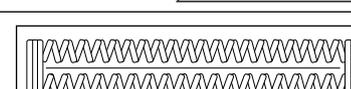
Whip stitch
The whip stitch is formed in zigzag showing the needle thread only on top of fabric, and the bobbin thread on the bottom.

7. Performing re-sewing

When stop switch A is pressed during sewing operation, the sewing machine interrupts sewing and stops. At this time, error display screen B is displayed to inform that the stop switch is pressed.

A

B

E050

Error No.   **Error pictograph**

❸

E ─────
D ─────▶

C

㉕

㉖

JUKI
LBH-1790
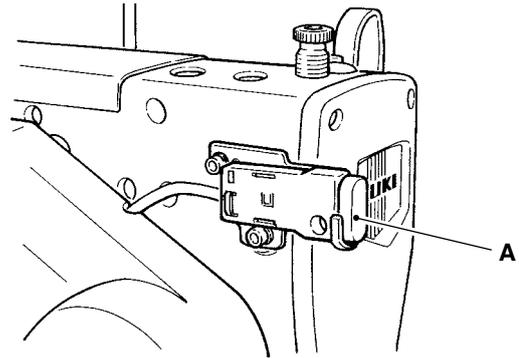
To continue performing sewing from some point in sewing

Sewing motion stop status

Error display screen B is displayed.

1) Release the error.

Press RESET key ❸ to release the error.

Then step motion screen C is displayed.

2) Return the presser.

Press BACKWARD key ㉖ and the presser returns stitch by stitch.

Press FORWARD key ㉕ and the presser advances stitch by stitch. Return the presser to the re-sewing position.

3) Start sewing again.

Depress the right side pedal and sewing starts again.
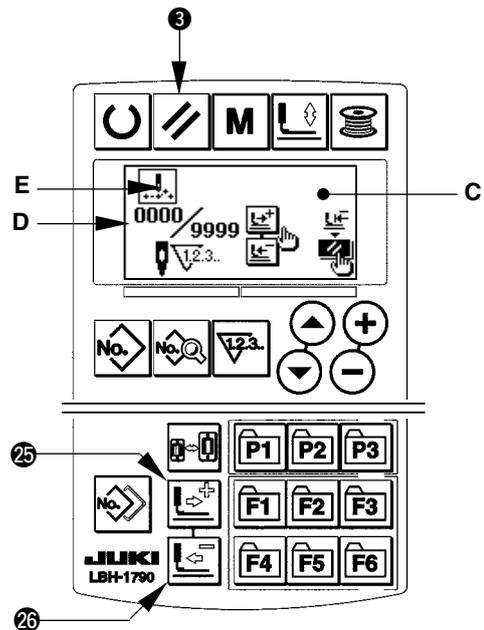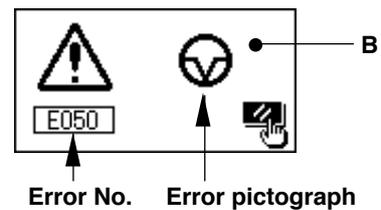
To perform re-sewing from the start

Sewing motion stop status

Error display screen B is displayed.

1) Release the error.

Press RESET key ❸ to release the error.

Then step motion screen C is displayed.

2) Return the presser to the sewing product setting position.

Press again RESET key ❸ and the presser returns to the sewing product setting position.

3) Perform again the sewing work from the start.

* Existing **number of stitches/total number of stitches** are displayed in section D.

* Existing sewing command is displayed in section E.

Kinds of commands are :

| Sewing command | Jump feed command |
| Thread trimmer command | Knife command |

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8. Winding bobbin thread

(1) Winding the bobbin

1) Set the bobbin.

Fit a bobbin fully onto the bobbin winder shaft. Take the thread from the spool and pass it through the guides in the numerical order as shown in the figure, and wind the end of the thread several times around the bobbin. Then push the bobbin winder trip latch ① in the direction of the arrow mark.
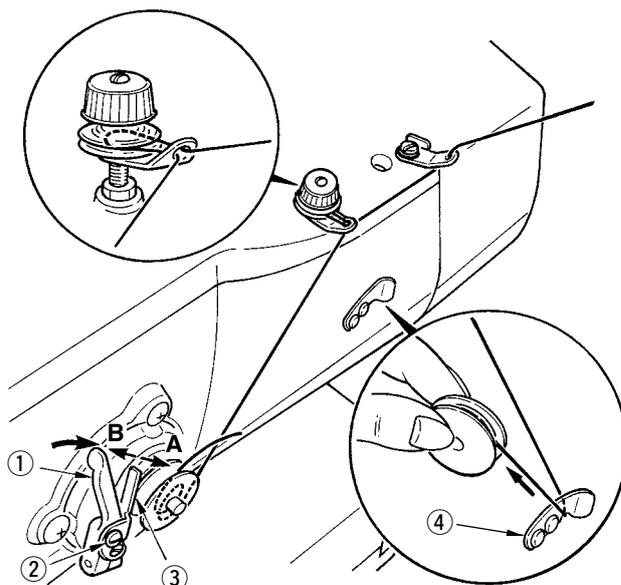
2) Set the mode to the bobbin winding mode.

Press WINDER key ❻ 🖾 from either input status or sewing status to enter the bobbin winding mode, and bobbin winding screen C is displayed.

3) Start bobbin winding.

Depress the right-hand side pedal, and the sewing machine rotates and starts winding bobbin thread.

4) Stop the sewing machine.

Once the bobbin is wound with the predetermined amount of thread, bobbin thread guide ① is released. Press WINDER key ❻ 🖾 or depress the right-hand side pedal to stop the sewing machine. Then remove the bobbin and cut bobbin thread with thread trimmer retaining plate ④.

- Press WINDER key ❻ 🖾 , and the sewing machine stops and returns to the normal mode.
- Depress the right-hand side pedal and the sewing machine stops while the bobbin thread winding mode stays as it is. Use this way when winding bobbin thread around plural bobbins.
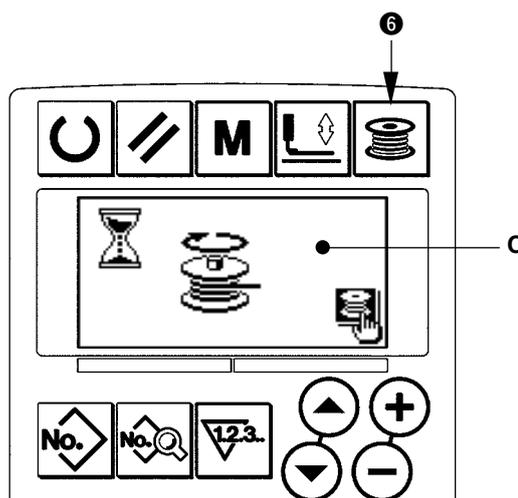
(2) Adjusting the amount to be wound on a bobbin

To adjust the winding amount of the bobbin thread, loosen the setscrew ② and move the bobbin winder adjusting plate ③ to the direction of A or B. Then, tighten the setscrew ②.

        To the direction of A : Decrease
        To the direction of B : Increase

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(1) Setting procedure of the counter value

1) Call counter setting screen.

Press COUNTER key ❾ 🗒 under the input mode, and counter screen A is displayed. Then setting is possible. Setting of the counter value can be performed only with the input mode (back-light of LCD display ❶ is blue). In case of the sewing mode (back-light of LCD display ❶ is green), press READY key ❷ ○ to set the mode to the input mode.
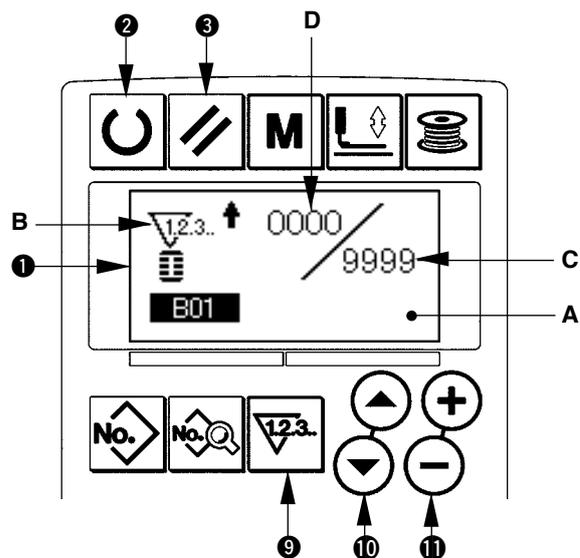
2) Selection of kinds of counters

Press ITEM SELECTION key ❿ ⏶⏷ to make pictograph B showing the kind of counter flash on and off. Press DATA CHANGE key ⓫ ⊕⊖, and select the counter you desire from among the kinds of counters below.

3) Change of counter set value

Press ITEM SELECTION key ❿ ⏶⏷ to make counter set value C flash on and off.Press DATA CHANGE key ⓫ ⊕⊖ and input the set value until count-up is reached.

4) Change of existing counter value

Press ITEM SELECTION key ❿ ⏶⏷ to make existing counter value D flash on and off.
Press RESET key ⓫ ⫽ and the value on the way of counting can be cleared.
In addition, it is possible to edit the numerical value with DATA CHANGE key ⓫ ⊕⊖ .

(2) Kind of counter

① Sewing UP counter

Every time the sewing of one shape is performed, the existing value is counted up.
When the existing value is equal to the set value, count-up screen is displayed.

② Sewing DOWN counter

Every time the sewing of one shape is performed, the existing value is counted down.
When the existing value is reached to "0", count-up screen is displayed.

③ No. of pcs. UP counter

Every time one cycle or one continuous stitching is performed, the existing value is counted up.
When the existing value is equal to the set value, count-up screen is displayed.

④ No. of pcs. DOWN counter

Every time one cycle or one continuous stitching is performed, the existing value is counted down. When the existing value is reached to "0", count-up screen is displayed.

⑤ Counter not used

(3) Count-up releasing procedure

When count-up condition is reached during sewing work, the whole count-up screen E flashes on and off. Press RESET key ❸ ⫽ to reset the counter, and the mode returns to the sewing mode. Then the counter starts counting again.
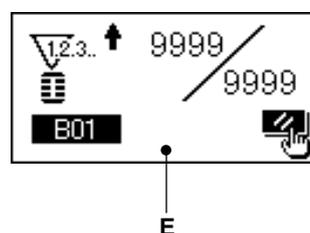
10. Using the initial value pattern

This sewing machine has the initial value to perform the optimum sewing for the sewing shapes (30 shapes).
→ Refer to **XI. INITIAL VALUE DATA FOR EACH SHAPE TABLE.**
When creating sewing data newly, it is convenient to create it by copying the initial value pattern.

1) Set the mode to the input mode.

When the back-light of LCD display ❶ shows input mode in blue color, it is possible to change the pattern. When the back-light shows the sewing mode in green color, Press READY key ❷ [○] to change over to the input mode.

2) Call initial value pattern.

Press PATTERN NO. key ❼ [No.◇] , and pattern

selection screen A is displayed.
Pattern No. B which is selected at present flashes on and off on the display. Press ITEM SELECTION key ❿ (▲)(▼) to select initial value

pattern [◇].

3) Select shape.

Press SHAPE key ⓬ [≣No.] , and shape selection

screen C is displayed. Shape D which is selected at present flashes on and off on the display. Select shape D to sew with DATA CHANGE key

⓫ (+)(−). It is possible to select the shape from

among 12 shapes at the time of your purchase. However, it is possible to select the shape from among maximum 30 shapes by increasing the shape selection level (K04).
→ Refer to **20. Method of changing memory switch data.**

4) Perform trial sewing.

Press READY key ❷ [○] to set the mode to the

sewing mode (back-light of LCD display ❶ is green). Then it is possible to perform sewing and the selected shape can be sewn.
* Initial value pattern can edit the needle thread tension data only. However, it returns to the initial value when changing the shape or performing re-call of the pattern. So, be careful.

5) Copy initial value pattern.

Copy the pattern which has been selected and confirmed through the steps above to the normal pattern and use it.
Copying procedure → Refer to **14. copying sewing pattern.**
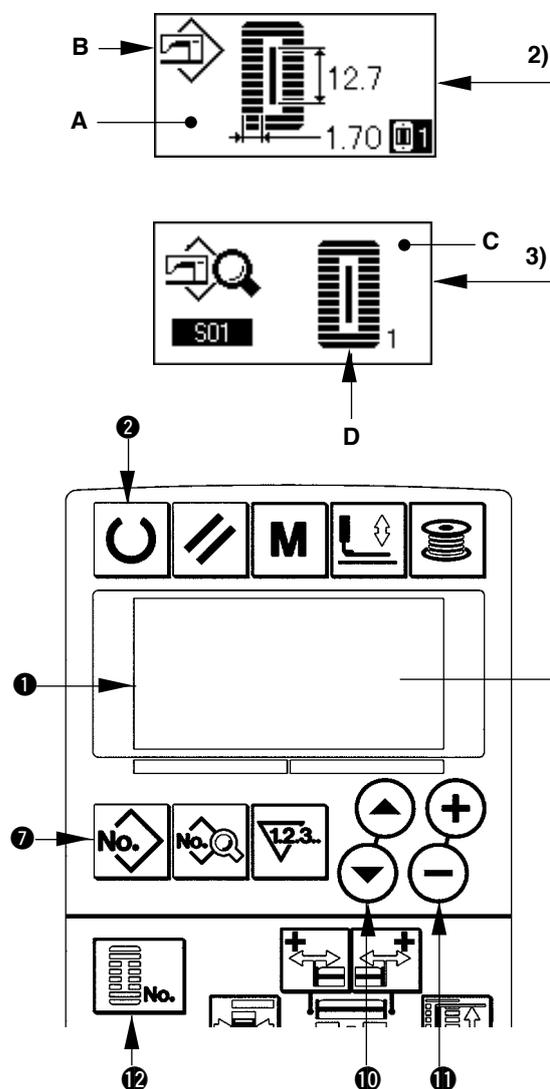
(1) Initial sewing data at the time of your purchase

Patterns from 1 to 10 have been already registered at the time of your purchase. Initial values of the square type, the cloth cutting length of which only is different from each other, have been inputted in the sewing data. → Refer to **XI. INITIAL VALUE DATA FOR EACH SHAPE TABLE.**

Pattern No.	Cloth cutting length 📶	S02
1	6.4mm	(1/4")
2	9.5mm	(3/8")
3	11.1mm	(7/16")
4	12.7mm	(1/2")
5	14.3mm	(9/16")
6	15.9mm	(5/8")
7	17.5mm	(11/16")
8	19.1mm	(3/4")
9	22.2mm	(7/8")
10	25.4mm	(1")

(2) Changing procedure of sewing data

1) Set the mode to the input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to change the sewing mode.
When the back-light of shows the sewing mode in green color, press READY key ❷ 🔄 to change over to the input mode.

2) Call sewing data edit screen.

Press DATA key ❽ 🔍, and sewing data edit screen A of the pattern No. which is selected at present is displayed.

3) Select sewing data to be changed.

Press ITEM SELECTION key ❿ ⏶⏷, and select the data item you desire to change.
Data item which is not used according to the shape and data item which is set without function are skipped and not displayed. So, be careful.
→ Refer to **12. Method of setting sewing data with/without edit**

Pattern which is selected at present ❷

Pictograph showing data item

A

❶

Data item No. ❽ ❿ ⓫

4) Change data.

For the sewing data, there are data item which changes numerical value and that which selects pictograph.
No. such as S02 is attached to the data item which changes numerical value. Increase or decrease the set value with DATA CHANGE key ⓫ ⊕⊖ to change the value.

No. such as S01 is attached to the data item which selects pictograph. Pictograph can be selected with DATA CHANGE key ⓫ ⊕⊖.

→ For the details of sewing data, refer to **13. Sewing data table.**

12. Method of setting sewing data with/without edit

This sewing machine has been set so as not to be capable of editing sewing data items which are less frequently used at the time of your purchase. When you desire to set the data more closely in accordance with the sewing products, set the sewing data item to the edit possible state and use the machine.

For the setting of sewing data with/without edit, when S52, right parallel section tension is set to without edit, sewing is performed with the data of S51 left parallel section tension. When S56, 2nd bar-tacking tension is set to without edit, sewing is performed with the data of S55, 1st bar-tacking section.
When the sewing data items other than the above ones are set to without edit, the data to be referred are the initial value data.

1) Set the mode to the input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to set. When the back-light shows the sewing mode in green color, press READY key ❷ ⭕ to change over to the input mode.

2) Call sewing data with/without edit changeover screen.

Press DATA key ❽ for as long as three seconds, and data with/without edit changeover screen A or B is displayed.

3) Select sewing data you desire to change over.

Press ITEM SELECTION key ❿ ▲ ▼ , and select sewing data item C you desire to change over. At this time, changeover possible item only can be selected.

4) Changeover of with/without edit

Press DATA CHANGE key ⓫ ⊕ ⊖, and pictograph display C of sewing data repeats reverse/non-reverse.
Non-reverse display : With edit
Reverse display : Without edit
Return to step 3), and plural sewing data items can be changed over.

5) Save data which have been set.

Press READY key ❷ ⭕ , and the data in the state of being changed over can be saved. After two seconds, the screen returns to the former one.
Press RESET key ❶ ⁄ , and the screen returns to the former one without saving the data.

A

S52

(With edit)

C

B

S52

(Without edit)

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13. Sewing data list

☆ Sewing data are those that can be inputted to 99 patterns from pattern 1 to 99 and can be inputted to each pattern. The sewing machine has been set in the state that the data which is necessary to set "With/without edit" cannot be selected at the time of your purchase. Change over the function to "With edit" if necessary for the use. → Refer to **12. Method of setting sewing data with/without edit.**

No.	Item	Setting range	Edit unit	Remarks
S01	**Sewing shape** This item selects the shape from among the sewing shapes of 30 different kinds which the sewing machine has. **Refer to Ⅱ-3. Standard sewing shape list.** * Only 12 kinds of standard sewing shapes can be selected at the time of your purchase. When increasing the kinds of shapes, perform setting of **K04 Sewing shape selection level** of memory switch data. → Refer to 21**. Memory switch list.**	1 to 30	1	–
S02	**Cloth cut length** This item sets the length of cloth that is cut by cloth cutting knife. However, in case of bar-tack shape (Nos. 27, 28, 29, and 30 of S01), sewing length is set. By making effective **U19 Function of plural motions of cloth cutting knife** of memory switch data, make the plural motions of knife by the knife size set in the item **U18 Cloth cutting knife size**, and the sewing product is cut. → Refer to **21. Memory switch list.**	3.0 to 119.6	0.1mm	–
S03	**Knife groove width, right** This item sets the clearance between cloth cutting knife and right parallel section.	-2.00 to 2.00	0.05mm	–
S04	**Knife groove width , left** This item sets the clearance between cloth cutting knife and left parallel section.	-2.00 to 2.00	0.05mm	–
S05	**Overedging width, left** This item sets the overedging width of left parallel section.	0.10 to 5.00	0.05mm	–
S06	**Ratio of right and left shapes** This item sets enlargement/reduction ratio of right side shape making the knife position as the center.	50 to 150	1%	–
S07	**Pitch at parallel section** This item sets sewing pitch of left and right parallel sections.	0.200 to 2.500	0.025mm	–
S08	**2nd bar-tacking length** This item sets length of bar-tacking on the front side. Bottom of square type / Bottom of straight bar-tacking / Bottom of taper	0.2 to 5.0	0.1mm	–
S09	**1st bar-tacking length** This item sets length of bar-tacking on the rear side. Top of square type	0.2 to 5.0	0.1mm	–
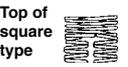
* 1 : Displayed according to the shape

* 2 : Displayed when it is set to with edit. Refer to 12. Method of setting sewing data with/without edit.

* 3 : Displayed when the function is selected.

No.	Item	Setting range	Edit unit	Remarks
S10	**Compensation of bar-tacking width, right** This item adjusts right side outer shape of bar-tacking section in terms of overedging section. Top of square type / Bottom of square type / Bottom of straight bar-tacking	-1.00 to 1.00	0.05mm	–
S11	**Compensation of bar-tacking width, left** This item adjusts left side outer shape of bar-tacking section in terms of overedging section. Top of square type / Bottom of square type / Bottom of straight bar-tacking	-1.00 to 1.00	0.05mm	–
S12	**Taper bar-tacking offset, left** This item sets length to form bar-tacking section of taper bar-tacking shape.	0.00 to 3.00	0.05mm	*1
S13	**Taper bar-tacking offset, right** This item sets length to form bar-tacking section of taper bar-tacking shape.	0.00 to 3.00	0.05mm	*1
S14	**Eyelet shape length** This item sets upper side length from center of eyelet of eyelet shape.	1.0 to 10.0	0.1mm	*1
S15	**Number of stitches of eyelet shape** This item sets number of stitches in the upper 90° of eyelet shape.	1 to 8	1	*1
S16	**Eyelet width** This item sets crossuise size of the inside of eyelet shape. Actual needle entry point is the dimension to which **S04 Knife groove width, left** is added.	1.0 to 10.0	0.1mm	*1
S17	**Eyelet length** This item sets lengthwise size of the inside of eyelet shape.	1.0 to 10.0	0.1mm	*1
S18	**Round type shape length** This item sets upper length from the center of round type shape. Top of round type / Top of Radial type / Top of semilunar type Bottom of round type / Bottom of radial type / Bottom of semilunar type	1.0 to 5.0	0.1mm	*1
S19	**Number of stitches of radial shape** This item sets number of stitches in the upper 90° of radial shape.	1 to 8	1	*1
S20	**Reinforcement of radial shape** This item sets with/without reinforcement stitching of radial shape. : With : Without	–	–	*1, *2
S21	**Pitch at bar-tacking section** This item sets sewing pitch of bar-tacking section. Top of square type / Top of round type / Top of semilunar type / Bottom of straight bar-tacking / Bottom of taper bar-tacking Bottom of square type / Bottom of round type / Bottom of semilunar type	0.200 to 2.500	0.025mm	–

No.	Item	Setting range	Edit unit	Remarks
S22	**1st clearance** This item sets the clearance between 1st bar-tacking and knife groove. This item is applied to all shapes.	0.0 to 4.0	0.1mm	–
S23	**2nd clearance** This item sets the clearance between 2nd bar-tacking and knife groove. This item is applied to all shapes.	0.0 to 4.0	0.1mm	–
S31	**Single/double stitching** This item selects single or double stitching. Single stitching Double stitching	–	–	–
S32	**Double stitching cross selection** This item selects overlapping stitching or cross stitching at the needle entry of parallel section when setting double stitching. : Double stitching : Cross stitching	–	–	*3
S33	**Compensation of double stitching width** This item sets amount to narrow overedging width of 1st cycle when setting double stitching.	0.0 to 2.0	0.1mm	*3
S34	**Number of times of basting** This item sets number of times of basting. : Without basting : With basting (Setting of number of times)	0 to 9	1 time	–
S35	**Basting pitch** This item sets pitch at the time of performing basting.	1.0 to 5.0	0.1mm	*3
S36	**Rolling length of basting** This item sets rolling length of needle thread when performing basting.	2.0 to 20.0	0.1mm	*3
S37	**Rolling pitch of basting** This item sets rolling pitch of needle thread when performing basting.	0.2 to 5.0	0.1mm	*3
S38	**Rolling width of basting** This item sets rolling width of needle thread when performing basting.	0.0 to 4.0	0.1mm	*3
S39	**Lengthwise compensation of needle entry of basting** This item sets the amount to move needle entry position back and forth when performing basting more than two cycles.	0.0 to 2.5	0.1mm	*2, *3
S40	**Crosswise compensation of needle entry of basting** This item sets the amount to move needle entry position to the right or left when performing basting more than two cycles.	0.0 to 1.0	0.1mm	*3
S41	**Compensation of left side position of basting** This item sets the amount to move the sewing reference position of basting from the center of left overedging to the right or left.	-2.0 to 2.0	0.1mm	*2, *3
S42	**Compensation of right side position of basting** This item sets the amount to move the sewing reference position of basting from the center of right overedging to the right or left.	-2.0 to 2.0	0.1mm	*2, *3

No.	Item	Setting range	Edit unit	Remarks
S44	**Speed setting of basting** This item sets speed of basting.	400 to 4200	100sti/min	***3**
S51	**Left parallel section tension** This item sets needle thread tension at left parallel section.	0 to 200	1	–
S52	**Right parallel section tension** This item sets needle thread tension at right parallel section.	0 to 200	1	***2**
S53	**Left parallel section tension (1st cycle of double stitching)** This item sets needle thread tension at left parallel section of 1st cycle at the time of double stitching.	0 to 200	1	***2, *3**
S54	**Right parallel section tension (1st cycle of double stitching)** This item sets needle thread tension at right parallel section of 1st cycle at the time of double stitching.	0 to 200	1	***2, *3**
S55	**Tension at 1st bar-tacking section** This item sets needle thread tension at 1st bar-tacking section.	0 to 200	1	–
S56	**Tension at 2nd bar-tacking section** This item sets needle thread tension at 2nd bar-tacking section.	0 to 200	1	***2**
S57	**Setting of needle thread tension at the start of sewing** This item sets needle thread tension of tie stitching at the start of sewing.	0 to 200	1	–
S58	**Setting of needle thread tension of basting** This item sets needle thread tension of basting.	0 to 200	1	***3**
S59	**ACT timing adjustment at the start of 1st bar-tacking** This item adjusts needle thread tension output start timing at 1st bar-tacking section.	-5 to 5	1 stitch	***2**
S60	**ACT timing adjustment at the start of right overedging** This item adjusts needle thread tension output start timing at right overedging section.	-5 to 5	1 stitch	***2**
S61	**ACT timing adjustment at the start of 2nd bar-tacking** This item adjusts needle thread tension output start timing at 2nd bar-tacking section.	-5 to 5	1 stitch	***2**
S62	**Number of stitches of tie stitching at the start of sewing** This item sets number of stitches of tie stitching at the start of sewing.	0 to 8	1 stitch	–
S63	**Sewing pitch of tie stitching at the start of sewing** This item sets sewing pitch pf tie stitching at the start of sewing.	0.00 to 0.70	0.05mm	***2**
S64	**Tie stitching width at the start of sewing** This item sets tie stitching width at the start of sewing.	0.0 to 3.0	0.1mm	–

No.	Item	Setting range	Edit unit	Remarks
S65	**Lengthwise compensation of tie stitching at the start of sewing** This item sets start position of tie stitching in lengthwise direction at the start of sewing.	0.0 to 5.0	0.1mm	***2**
S66	**Crosswise compensation of tie stitching at the start of sewing** This item sets start position of tie stitching in crosswise direction at the start of sewing.	0.0 to 2.0	0.1mm	***2**
S67	**Tie stitching width at the end of sewing** This item sets tie stitching width at the end of sewing.	0.1 to 1.5	0.1mm	–
S68	**Number of stitches of tie stitching at the end of sewing** This item sets number of stitches of tie stitching at the end of sewing.	0 to 8	1	–
S69	**Lengthwise compensation of tie stitching at the end of sewing** This item sets start position of tie stitching in lengthwise direction at the end of sewing.	0.0 to 5.0	0.1mm	***2**
S70	**Crosswise compensation of tie stitching at the end of sewing** This item sets start position of tie stitching in crosswise direction at the end of sewing.	0.0 to 2.0	0.1mm	***2**
S81	**Knife motion** This item sets "With/without motion" of normal cloth cutting knife. : Normal knife motion OFF : Normal knife motion ON	–	–	–
S83	**Knife motion at 1st cycle of double stitching** This item sets "With/without motion" of cloth cutting knife at 1st cycle when double stitching is performed. : Normal knife motion OFF : Normal knife motion ON	–	–	***2, *3**
S84	**Maximum speed limitation** This item sets max. speed limitation of the sewing machine. The maximum value of data edit is equal to the number of revolutions of **K07 Maximum speed limitation** of the memory switch data. → Refer to **21. Memory switch list**	400 to 4200	100sti/min	–
S86	**Pitch of going** This item sets sewing pitch of going side of bar-tacking shape (Shape Nos. 27, 28, 29 and 30 of S01).	0.200 to 2.500	0.025mm	–
S87	**Width of going** This item sets width of going side of bar-tacking shape (Shape Nos. 27, 28, 29 and 30 of S01).	0.1 to 10.0	0.05mm	–
S88	**Pitch of coming** This item sets sewing pitch of coming side of bar-tacking shape (Shape Nos. 27, 28, 29 and 30 of S01).	0.200 to 2.500	0.025mm	–
S89	**Width of coming** This item sets width of coming side of bar-tacking shape (Shape Nos. 27, 28, 29 and 30 of S01).	0.1 to 10.0	0.05mm	–

14. Copying sewing pattern

Data of pattern No. which has been already registered can be copied to pattern No. which has not been used. Overwriting copy of the pattern is prohibited. When you desire to overwrite, perform it after erasing the pattern once.

1) Set the mode to input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to copy. When the back-light shows the sewing mode in green color, press READY key ❷ ⟳ to change over to the input mode.

2) Select pattern No. of copy source.

Select pattern No. of copy source from the pattern selection screen.
→ Refer to **5. Performing pattern selection**
When creating pattern data quite newly. it is convenient to copy the initial value pattern.
→ Refer to **10. Using initial value pattern**

3) Call copy screen.

Press COPY key ㉓ , and copy screen A is displayed.

4) Select pattern No. of copy destination.

Pattern No. B which is not used flashes on and off in the display. Press DATA CHANGE key ⓫ (+) (−), and select the No. you desire to copy. When you desire to erase the pattern, select the garbage can 🗑 .

5) Start copying.

Press READY key ❷ ⟳ to start copying. After two seconds, the pattern No. which is created by copying returns to the input screen in the state of being selected.

Press RESET key ❸ ⫽ , and the screen returns to the former one without copying.
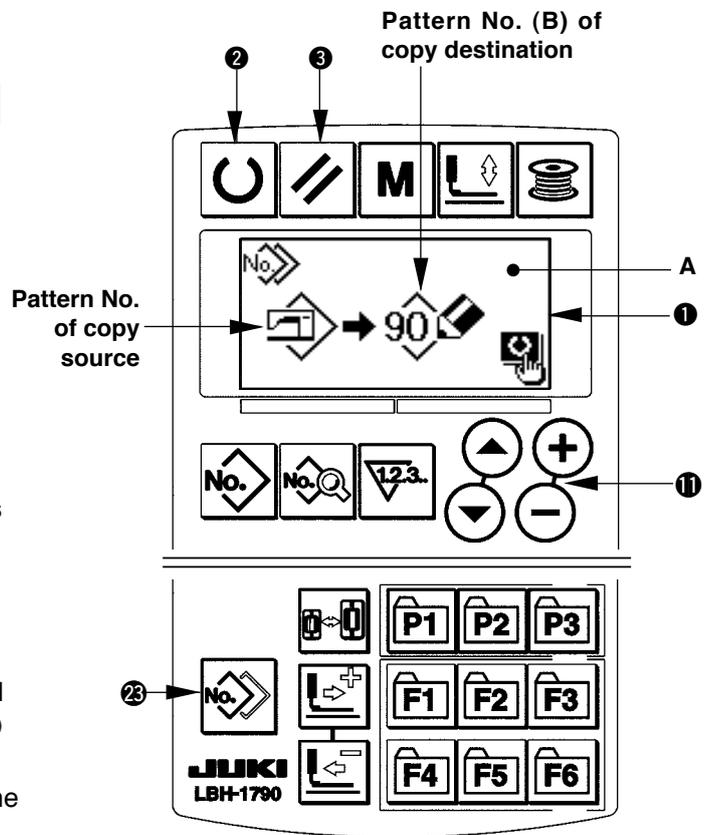
* In addition, cycle data and continuous stitching data can be copied by the same method.

Register pattern Nos. which are frequently used with the pattern register key and use them.
Patterns which have been registered can be selected by pressing only the pattern register key under the input mode.

(1) Method of register

1) Set the mode to the input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to register patterns.
When the back-light shows the sewing mode in green color, press READY key ❷ 🔵 to change over to the input mode.

2) Call pattern register screen.

Press key (P1 to P3) ㉗ P1 to P3 which you desire to register pattern No. for as long as 3 seconds, and pattern register screen A is displayed.

3) Select pattern No.

Pattern No. B which can be used at present flashes on and off in the display. Press ITEM SELECTION key ❿ ⊙⊙ , and select the pattern No. you desire to register.
When trash can 🗑 is selected, register can be released.

4) Start register.

Press READY key ❷ 🔵 to start register and the screen returns to the input screen after two seconds.
Press RESET key ❸ ⫽ , and the screen returns to the former one without registering.
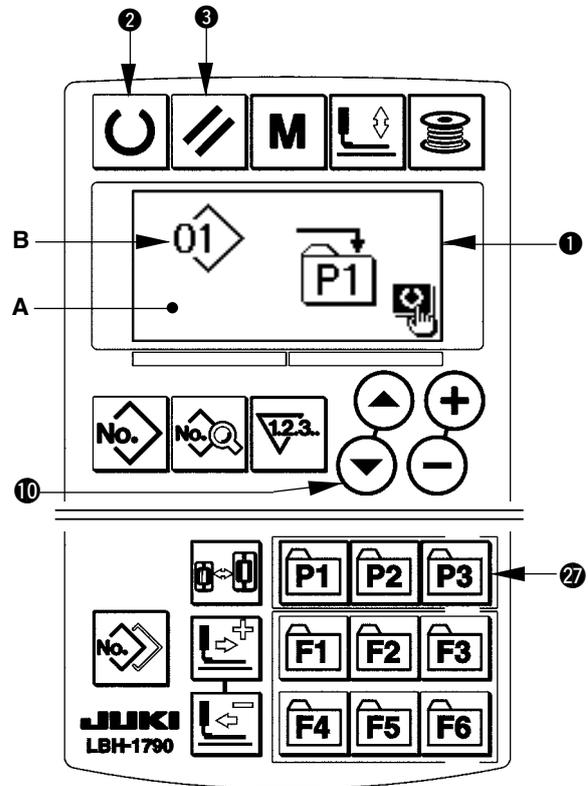
(2) Register status at the time of your purchase

Register key	Registered pattern No.
P1	Pattern No. 1
P2	Pattern No. 2
P3	Pattern No. 3

16. Using parameter register key

Register parameters which are frequently used with parameter register key and use them. Parameters which have been registered can be selected by pressing only the parameter register key under the input mode. In addition, this key can use the same method as that of **15. Using pattern register key** since this key can register not only the parameters but also pattern Nos.

(1) Method of register

1) Set the mode to the input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to register parameters. When the back-light shows the sewing mode in green color, press READY key ❷ ⟦Ｏ⟧ to change over to the input mode.

2) Call parameter register screen.

Press key (F1 to F6) ㉘ ⟦F1⟧ to ⟦F6⟧ which you desire to register the parameter for as long as 3 seconds, and parameter register screen A is displayed.

3) Select parameter.

Item B which can be registered with the key flashes on and off. Press ITEM SELECTION key ❿ ⟐ ⟐ to select the item you desire to register. Items which can be registered are sewing data, parameters of memory switches (level 1) and pattern Nos. In addition, when trash can ⟦▥⟧ is selected, register can be released.

4) Start register.

Press READY key ❷ ⟦Ｏ⟧ to start register and the screen returns to the input screen after two seconds.

Press RESET key ❸ ⟦╱╱⟧ , and the screen returns to the former one without registering.
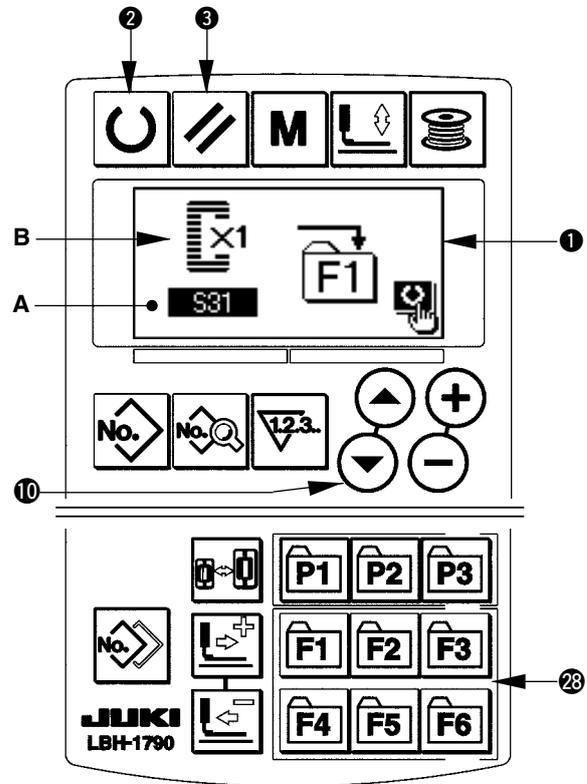
(2) Register status at the time of your purchase

Register key	Registered parameter	
F1	Changeover of single/double stitching	▤×1 S31
F2	Basting (off/number of times)	◯ S34
F3	Basting needle thread tension setting	S58
F4	Plural motions of cloth cutting knife Ineffective/effective	U19
F5	Cloth cutting knife size	U18
F6	Setting of needle thread tension at the start of sewing	S57

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17. Performing continuous stitching

This sewing machine can perform continuous stitching which is capable of continuously sewing plural sewing pattern data without lifting the presser foot. It is possible to automatically sew up to maximum 6 shapes in one cycle.

In addition, registration of as many as 20 data can be performed. Copy and use the data to fill the needs.
→ Refer to **14. Copying sewing pattern**

* **It is necessary to change the parts from the state at tht time of your purchase according to the setting conditions.**

(1) Selection of continuous stitching data

1) Set the mode to the input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to select continuous stitching data. When the back-light shows the sewing mode in green color, press READY key ❷ to change over to the input mode.

2) Call pattern selection screen.

Press PATTERN NO. key ❼, and pattern selection screen A is displayed.
Pattern No. B which is selected at present flashes on and off.

3) Select continuous stitching.

Press ITEM SELECTION key ❿, and patterns which have been registered are changed over and displayed in order. Cycle data No. and continuous stitching data No. which have been registered after the last registered pattern No. are displayed. Here, select the continuous stitching data No. which you desire to sew.

4) Perform sewing.

Press READY key ❷ in the state that continuous stitching data is selected, and the back-light of LCD display ❶ shows green and it is possible to sew. Continuous stitching data No. 1 only has been registered at the time of your purchase. However, sewing status cannot be obtained since the sewing pattern has not been inputted. Perform inputting of sewing pattern referring to **2) Method of editing continuous stitching data** on the next page.
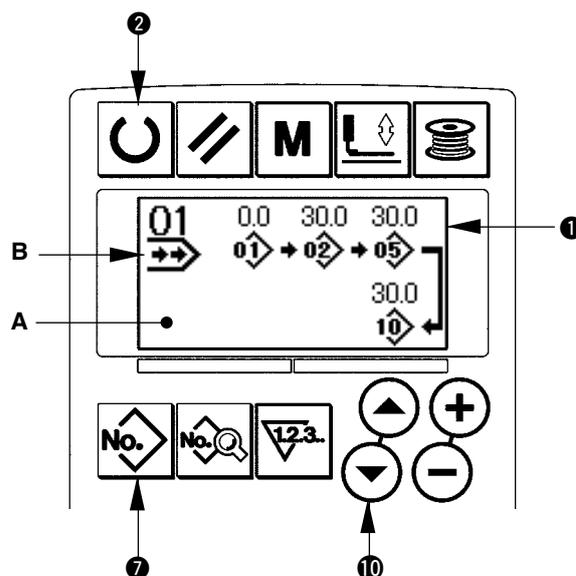
(2) Method of editing continuous stitching data

1) Set the mode to the input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to select continuous stitching data. When the back-light shows the sewing mode in green color, press READY key ❷ [○] to change over to the input mode.

2) Call continuous stitching data No. to edit.

Press PATTERN No. key ❼ [No.] to call pattern selection screen, and pattern No. B which is selected at present flashes on and off. Press ITEM SELECTION key ❿ (▲)(▼), and patterns which have been registered are changed over and displayed in order. Cycle data No. and continuous stitching data No. which have been registered after the last pattern No. are displayed. Here, select the continuous stitching No. which you desire to sew.
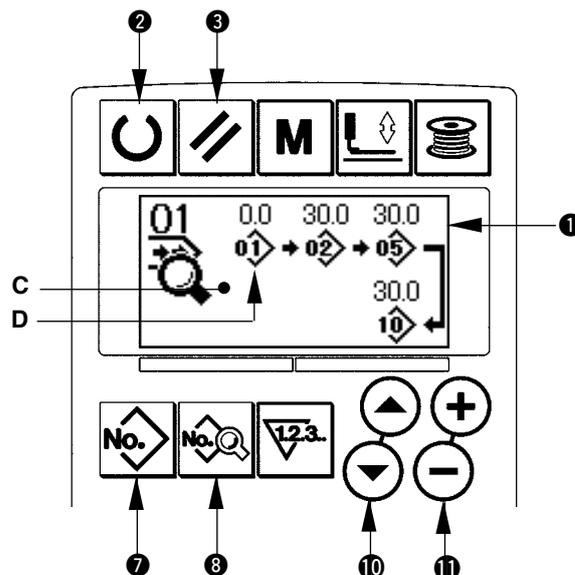
3) Set continuous stitching data to editing status.

Press DATA key ❽ [No.Q], and continuous stitching data editing display C appears. Pattern No. D which is sewn first flashes on and off. In this state, it is possible to edit the data.

4) Select editing point.

Press ITEM SELECTION key ❿ (▲)(▼), and editing point moves in order of "pattern No. → jump feed mount → pattern No. → jump feed amount" and flashes on and off. When moving the editing point up to the last data, additional indication pictograph ⅍ is displayed.

5) Change data of selected editing point.

Press DATA CHANGE key ⓫ (+)(−), and data of editing point can be changed.
When the editing point is at the pattern No. :
   Pattern No. which has been registered is displayed and it is possible to select.
When the editing point is at the jump feed :
   It is possible to edit numerical value within the range of ±120 mm. In addition, press RESET key ❸

   [⫽] and the pattern data of editing point can be deleted.

Repeat steps 4) and 5) to perform editing data.

* **Input is completed by the steps above. For the continuous stitching, however, input all data within the range of the presser size. Error message will be shown when the data exceeds the range. Be sure to precisely input the presser size.**
   → Refer to 4. Inputting presser type

This sewing machine can perform sewing of plural sewing pattern data in one cycle in the order of the data. Use this stitching when sewing plural different button holes on the sewing product since as many as 15 different kinds of patterns can be inputted.

In addition, registration of as many as 20 cycles can be performed. Copy and use the data to fill the needs.
→ Refer to **14. Copying sewing pattern**

(1) Selection of cycle data

1) Set the mode to the input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to select cycle data. When the back-light shows the sewing mode in green color, press READY key ❷ to change over to the input mode.

2) Call pattern selection screen.

Press PATTERN No. key ❼ , and pattern selection screen A is displayed.
Pattern No. B which is selected at present flashes on and off.

3) Select cycle stitching data.

Press ITEM SELECTION key ❿ , and patterns which have been registered are changed over and displayed in order. Cycle data No. and continuous stitching data No. which have been registered after the last registered pattern No. are displayed. Here, select the cycle data No. which you desire to sew.

4) Perform sewing.

Press READY key ❷ in the state that the cycle data is selected, and the back-light of LCD display ❶ shows green and it is possible to sew. Cycle data No. 1 only has been registered at the time of your purchase. However, sewing status cannot be obtained since the sewing pattern has not been inputted. Perform inputting of sewing pattern referring to **2) Method of editing cycle data** on the next page.
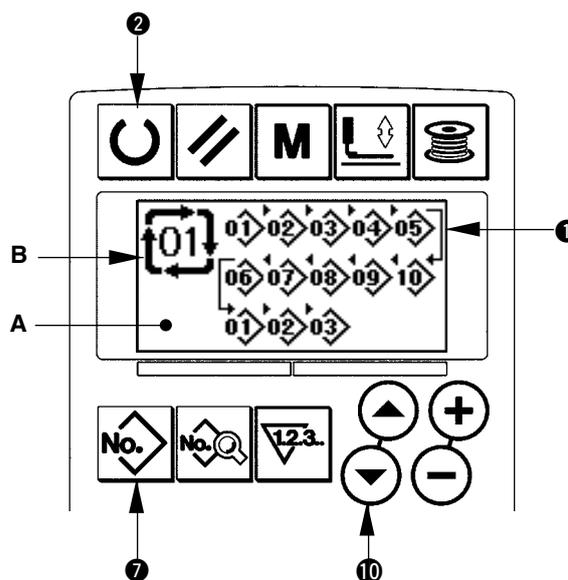
(2) Method of editing cycle data

1) Set the mode to input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to input the cycle data. When the back-light is the sewing mode in green color, press READY key ❷ to change over to the input mode.

2) Call cycle data No. to edit.

Press PATTERN No. key ❼ to call pattern selection screen, and pattern No. B which is selected at present flashes on and off. Press ITEM SELECTION key ❿ , and patterns which have been registered are changed over and displayed in order. Cycle data No. and continuous stitching data No. which have been registered after the last registered pattern No. are displayed. Here, select the cycle data No. which you desire to sew.

3) Set cycle data to editing status.

Press DATA key ❽ , and cycle data editing display C appears. Pattern No. D which is sewn first flashes on and off. In this state, it is possible to edit the data.

4) Select editing point.

Press ITEM SELECTION key ❿ , and editing point moves in order and flashes on and off. When moving the editing point up to the last data, additional indication pictograph is displayed.

5) Change data of selected editing point.

Press DATA CHANGE key ⓫ and data of editing point can be changed.
Pattern No. which has been registered is displayed and it is possible to select.
In addition, press RESET key ❸ , and the pattern data of editing point can be deleted.
Repeat steps 4) and 5) to perform editing data.
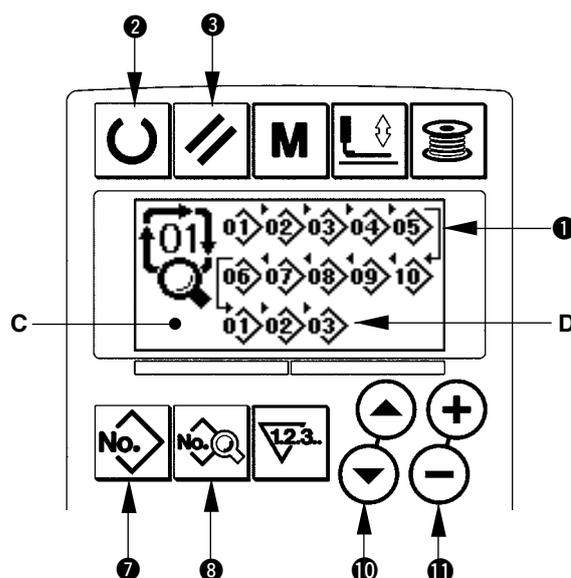
19. Explanation of plural motions of knife

This sewing machine can automatically actuate the knife plural times and sew a buttonhole larger than the size of knife by setting the size of knife attached from the operation panel. Set and use this function when sewing various sewing shapes without replacing the knife.

(1) Setting of plural motions of knife

1) Set the mode to the input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to edit the memory switch data. When the back-light shows the sewing mode in green color, press READY key ❷ 〇 to change over to the input mode.

2) Input the size of cloth cutting knife

Press MODE key ❹ M to display memory switch data (level 1) edit screen A. Press ITEM SELECTION key ❿ ⊙⊙ to call U18 Cloth cutting knife size B. Then set size C of knife attached with DATA CHANGE key ⓫ ⊕⊖. => For the details, refer to **21. Memory switch data list.**

3) Set the function of the plural motions of cloth cutting knife to effective.

Next, press again ITEM SELECTION key ❿ ⊙ ⊙ to call U19 Function of the plural motions of cloth cutting knife D. Then set the plural motions of cloth cutting knife to the effective status with DATA CHANGE key ⓫ ⊕⊖ . For the details, refer to **21. Memory switch data list.**

4) Perform sewing.

Press READY key ❷ 〇 , and the back-light of LCD display ❶ becomes green. Then it is possible to sew. At this time, when S02 Cloth cutting length is set to a size larger than U18 Cloth cutting knife size which has been set above, the plural motions of knife is automatically performed for sewing.

* If a buttonhole smaller than the size of knife attached is desired to be sewn, error 489 will be displayed.

Sewing data
S02 Cloth cut length

1st time

2nd time

3rd time

Memory switch data list (level 1)
U18 Cloth cutting knife size
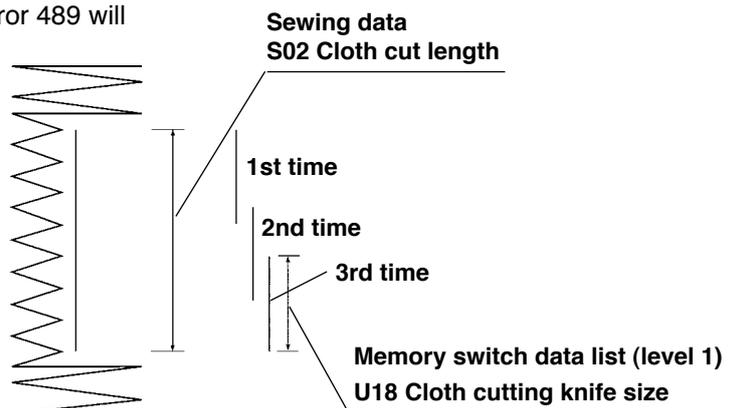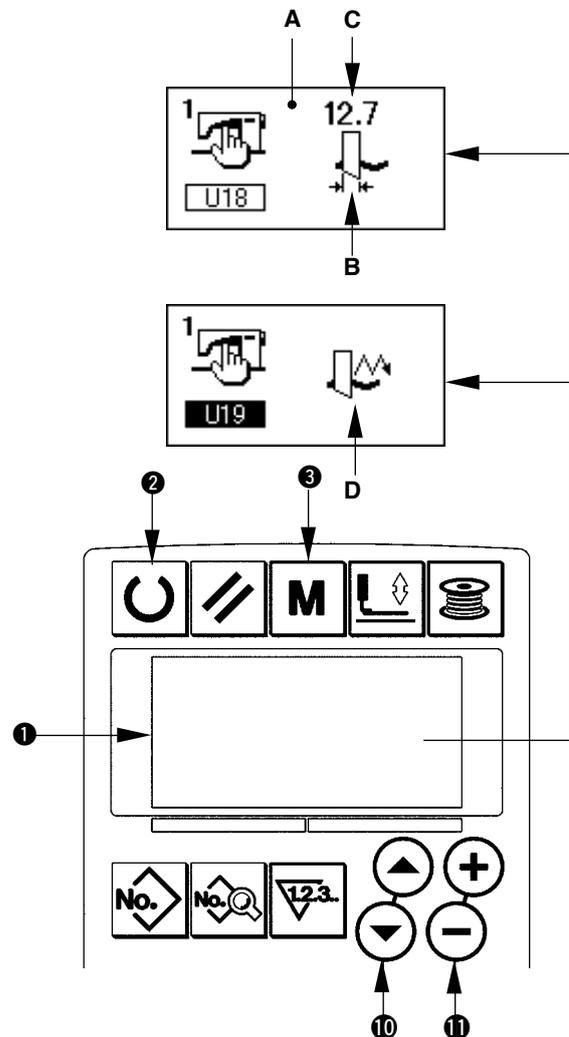
20. Method of changing memory switch data

1) Set the mode to input mode.

When the back-light of LCD display ❶ shows the input mode in blue color, it is possible to change the memory switch data. When the back-light shows the sewing mode in green color, press READY key ❷ $\boxed{\circlearrowleft}$ to change over to the input mode.

2) Call memory switch data edit screen.

Press MODE key ❹ $\boxed{\text{M}}$, and memory switch data (level 1) edit screen A is displayed. Further hold pressing the key for 3 seconds, and memory switch data (level 2) edit screen B is displayed.

3) Select memory switch data to change.

Press ITEM SELECTION key ❿ $\bigodot \bigodot$ and select the data item which you desire to change.

4) Change data.

There are one data item to change the numerical value and the other data item to select the pictograph in the memory switch data.

No. such as $\boxed{\text{U01}}$ is attached to the data item to change the numerical value. Set value can be changed by increasing/decreasing the value with DATA CHANGE key ⓫ $\boxed{+}\boxed{-}$.

No. such as $\boxed{\text{K01}}$ is attached to the data item to select the pictograph. Pictograph can be selected with DATA CHANGE key ⓫ $\boxed{+}\boxed{-}$.

→ For the details of memory switch data, refer to **21. Memory switch data list.**

level 1

Data item No. **Pictograph showing data item**
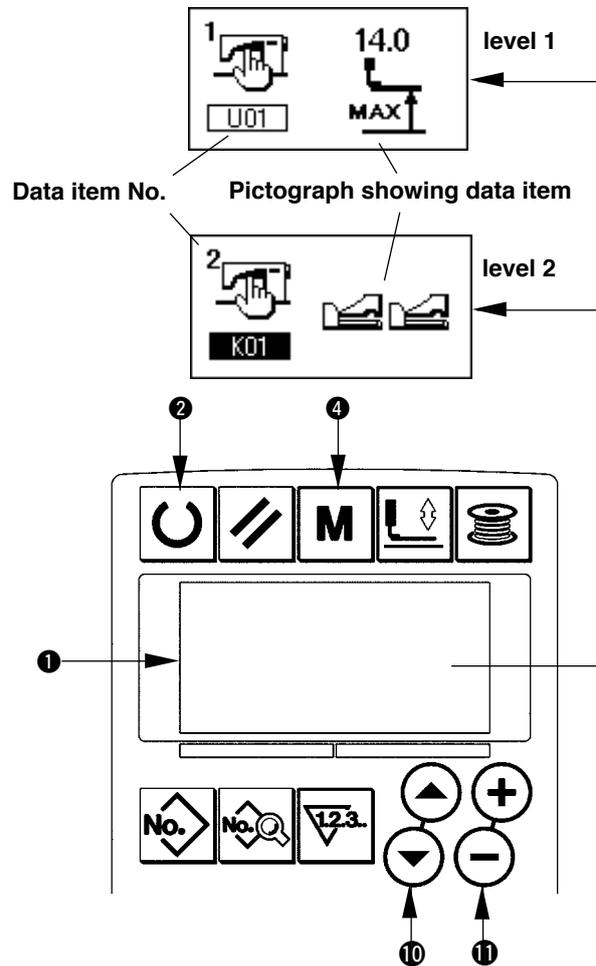
level 2

21. Memory switch data list

(1) Level 1

☆ Memory switch data (level 1) are the motion data that the sewing machine has in common and the data that operate on all sewing patterns in common.

No.	Item	Setting range	Edit unit	Initial value
U01	**Presser lifter maximum position** Height of maximum position of pedal operation is set.	0 to 17.0	0.1mm	14.0mm
U02	**Presser lifter intermediate position** Height of intermediate position of pedal operation is set.	0 to 14.0	0.1mm	6.0mm
U03	**Presser lifter cloth setting position** Height of cloth setting position of pedal operation is set.	0 to 14.0	0.1mm	0.0mm
U04	**Pedal toe down position of 2-pedal (%)** Operation feeling at the time of 2-pedal is set. Refer to the item below.	5 to 95	1%	80%
U05	**Lifting position of presser foot of 2-pedal (%)** Operation feeling at the time of 2-pedal is set. Pedal toe down amount Presser lifting amount U04 Pedal toe don position of 2-pedal (%) U01 Presser lifter maximum position U05 Lifting position of presser foot of 2-pedal (%)	5 to 95	1%	50%
U06	**Needle thread tension at sewing end setting**	0 to 200	1	35
U07	**Needle thread tension at thread trimming setting**	0 to 200	1	35
U08	**Needle thread tension of basting for sewing together setting**	0 to 200	1	60
U09	**Soft-start speed setting 1st stitch**	400 to 4200	100sti/min	800sti/min
U10	**Soft-start speed setting 2nd stitch**	400 to 4200	100sti/min	800sti/min
U11	**Soft-start speed setting 3rd stitch**	400 to 4200	100sti/min	2000sti/min
U12	**Soft-start speed setting 4th stitch**	400 to 4200	100sti/min	3000sti/min
U13	**Soft-start speed setting 5th stitch**	400 to 4200	100sti/min	4000sti/min
U14	**Kind of presser** Set the kind of the presser. → **4. Inputting presser type** 1 (4×25㎜) 2 (5×35㎜) 3 (5×41㎜) 5	–	–	Type 1 (1790S · 1792K) Type 5 (1795S)
U15	**Presser size width** When type 5 of U14 Kind of presser is set, input the width of the presser.	3.0 to 10.0	0.1mm	3.0mm (1790S · 1792K) 5.0mm (1795S)
U16	**Presser size length** When type 5 of U14 Kind of presser is set, input the length of the presser.	10.0 to 120.0	0.5mm	10.0mm (1790S · 1792K) 120.0mm (1795S)
U17	**Sewing start position (Feed direction)** Sewing start position in terms of presser is set. Set this item when starting position is desired to be shifted due to overlapped section or the like.	2.5 to 110.0	0.1mm	2.5mm
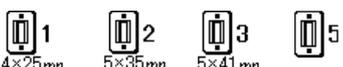
No.	Item	Setting range	Edit unit	Initial value
U18	**Cloth cutting knife size** Input knife size used.	3.0 to 32.0	0.1mm	32.0mm
U19	**Function of plural motions of cloth cutting knife Ineffective/effective** Ineffective Effective	–	–	Ineffective
U20	**Function of thread breakage detection Ineffective/effective** Ineffective Effective	–	–	Effective
U21	**Selection of presser position at the time of ON of READY key (Up/Down)** Presser foot position when READY key is pressed is set. Presser up Presser down	–	–	Presser Up
U22	**Selection of the position of presser foot at the time of the end of sewing (Up/Down)** This item sets the position of presser foot at the time of the end of sewing. (Effective only at the time of 1-pedal settin Presser up Presser down	–	–	Presser Up
U23	**Needle thread trimming motion start distance** Distance from the start of sewing to the start of needle thread trimmer release motion is inputted.	0 to 15.0	0.1mm	1.0mm
U24	**Bobbin thread trimming motion start distance** Distance from the start of sewing to the start of bobbin thread trimmer release motion is inputted.	0 to 15.0	0.1mm	1.5mm
U25	**Counter updating unit** Unit to update sewing counter is set.	1 to 30	1	1
U26	**Total number of stitches Non-display/Display** Non-display Display	–	–	Non-display
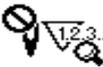
(2) Level 2

☆ Press MODE switch for as long as three seconds and it is possible to edit.

NO.	Item	Setting range	Edit unit	Initial value
K01	**Pedal selection** Pedal type is set. → **3. How to use the pedal** 2-pedal 1-pedal 1-pedal (Without intermediate position) (With intermediate position)	–	–	2-pedal
K02	**Parameter setting change Permitted/Prohibited** Prohibition of change of sewing data and memory switch data is set. Change permitted Change prohibited	–	–	Change permitted
K03	**Function of prohibition of selection of kind of presser Permitted/Prohibited** Prohibition of change of U14 Kind of presser is set. Change permitted Change prohibited	–	–	Change permitted
K04	**Sewing shape selection level** Number of sewing shapes which can be sewn can be increased. (Max. 30 shapes) 12 shapes 20 shapes 30 shapes	–	–	12 shapes
K05	**Cloth cutting knife power** Output power of cloth cutting knife is set. 0 : Min. power → 3 : Max. power	0 to 3	1	1
K06	**Selection of machine type** Type of sewing machine head is set. 0 : Standard type 1 : Dry head type	0 to 1	1	0 (Standard type)
K07	**Max. speed limitation speed setting** Max. speed of sewing machine can be limited. When K06 Selection of machine type is set to dry head type, max. speed is automatically limited to 3,300 sti/min.	400 to 4200	100sti/min	3600 sti/min
K08	**Compensation of unsteady needle thread tension** Output value of needle thread tension is wholly offset and compensated.	-30 to 30	1	0
K09	**Output time of needle thread tension changed value** When data related to needle thread tension is changed, the changed value is output as long as the set-up time. Without output Output of set-up time	0 to 20	1s	0s
K10	**Function of origin retrieval each time** Origin retrieval is performed after completion of sewing or completion of cycle. Without After end of sewing After end of cycle	–	–	Without
K11	**Needle up by reverse run Permitted/Prohibited** When U01 Presser lifter maximum position is set to 14.0 mm or more, motion of needle up by reverse run is automatically performed and the machine stops. Prohibition of the motion can be set. Needle up by reverse run prohibited Needle up by reverse run permitted	–	–	Permitted
K12	**Knife solenoid lowering time setting**	25 to 100	5ms	35
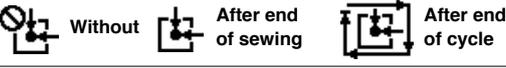
No.	Item	Setting range	Edit unit	Initial value
K13	**Knife solenoid lifting time setting**	5 to 100	5ms	15
K14	**Knife cylinder lowering time (Optional)**	5 to 300	5ms	50
K15	**Y-feed motor origin compensation**	-120 to 400	1 pulse (0.025mm)	0
K16	**Needle-rocking motor origin compensation**	-10 to 10	1 pulse (0.05mm)	0
K17	**Presser lifter motor origin compensation**	-100 to 10	1 pulse (0.05mm)	0
K18	**Pattern selection function under sewing mode Ineffective/effective** Ineffective Effective	–	–	Ineffective
K19	**Thread trimming on the way in continuous stitching Permitted/Prohibited** Permitted Prohibited	–	–	Permitted
K20	**Cloth cutting knife return power** This item sets output power at the time of returning the cloth cutting knife.	0 to 3	1	0
K21	**Release amount of bobbin thread trimmer at the start of sewing** This item sets the amount of releasing the bobbin thread trimmer at the statrt of sewing.	0 to 15	1 pulse	8
K22	**Presser lifter speed** This item sets presser lifter speed.	1 to 3	–	2
K51	**Needle thread trimming adjustment mode start** Needle thread trimming adjustment motion starts with READY key ON.	–	–	–
K52	**Bobbin thread trimming adjustment mode start** Bobbin thread trimming adjustment motion starts with READY key ON.	–	–	–
K53	**Sensor check mode start** Sensor check starts with READY key ON.	–	–	–
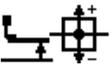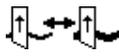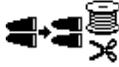
Ⅵ. MAINTENANCE

1. Adjusting the needle-to-hook relation

⚠️ **WARNING :**
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.
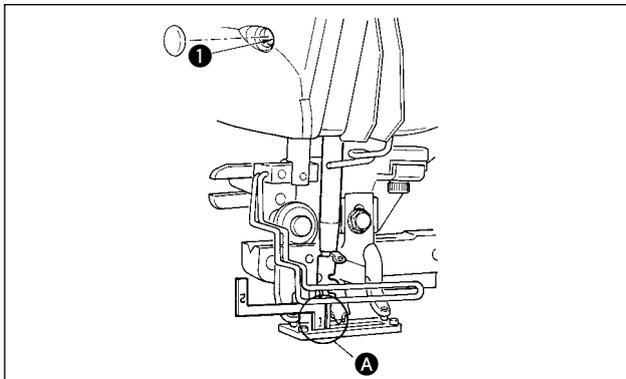
Adjust the needle-to-hook relation when the needle enters the center of the needle hole in the throat plate.

(1) Needle bar height

1) Bring down the needle bar to the lowest point.
2) Insert the part [1] Ⓐ of timing gauge into the gap between the bottom end of needle bar and throat plate, where the bottom end of the needle bar touches the top of the part [1] Ⓐ of the timing gauge.
3) Loosen needle bar connection screw ❶, and adjust the height of the needle bar.
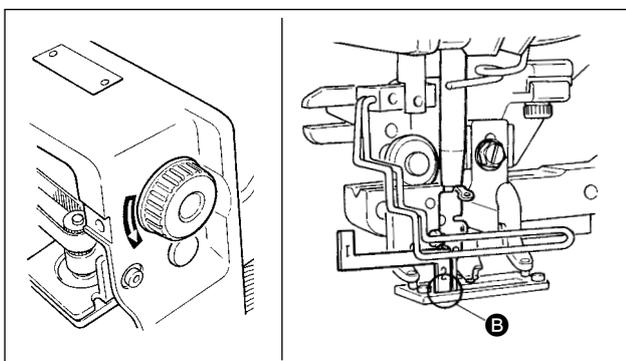
(2) Set the needle to hook relation in the following way :

1) Rotate the hand pulley in the correct direction until the needle starts to go up from its lowest point.
2) Insert the part [2] Ⓑ of the timing gauge into the gap between the bottom end of the needle bar and the throat plate, where the bottom end of the needle bar touches the top of the part [2] Ⓑ of the timing gauge.
3) Loosen setscrew Ⓒ of the hook sleeve, and align blade point of the sewing hook with the center of needle hole. Make adjustment so that a clearance of approx. 0.05 mm is provided between the needle and the blade point of the hook.

0.05 mm
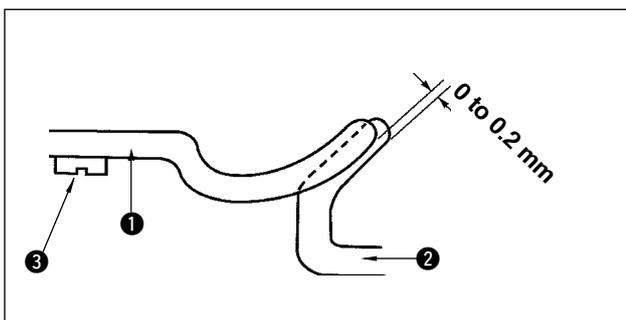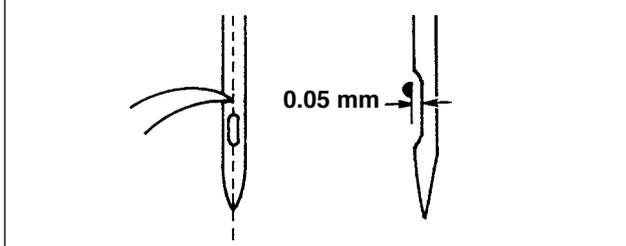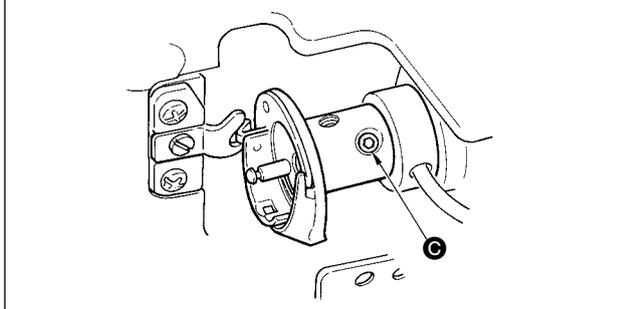
(3) Adjusting the bobbin case positioning stopper

Adjust with setscrew ❸ so that the contact of the top end of bobbin case positioning stopper ❶ and the end of inner hook ❷ is 0 to 0.2 mm.

0 to 0.2 mm

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2. Adjusting the needle thread trimmer

> **WARNING :**
> To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.
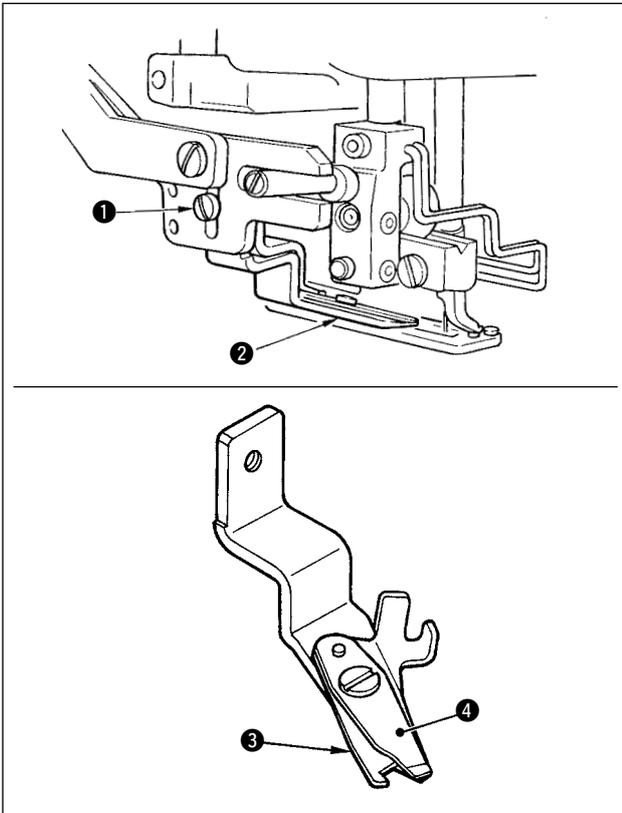
(1) Adjusting the thread grasping force of the needle thread trimmer

If the needle thread trimmer fails to provide consistent thread grasping force, the needle thread can slip off at the beginning of sewing.

1) If the thread grasping force of the needle thread trimmer has reduced, loosen setscrews ❶ and detach needle thread trimmer ❷.

2) Slightly bend the top end of thread presser spring ❸ so that it comes in contact with thread trimming blade of upper knife ❹ over the length with no clearance and so that the needle thread trimmer securely holds the thread regardless of the position of the thread trimming blade at which the thread is trimmed.
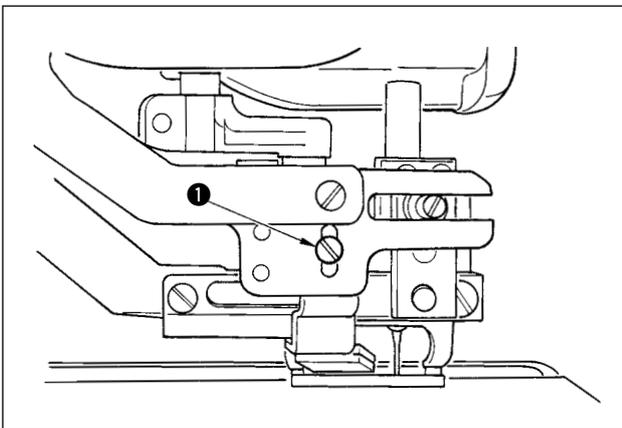
(2) Adjusting the height of the needle thread trimmer

To adjust the height of the needle thread trimmer, loosen setscrew ❶. Set the height of trimmer as low as possible, provided that it does not touch work clamp check, in order to minimize the length of remaining thread on the needle after trimming.

Note that the work clamp check tilts when sewing a multi-layered portion of the material, attach the needle thread trimmer to slightly raise the installing position of the trimmer.

> **When replacing the needle thread trimmer, make sure that the trimmer normally works under the needle thread trimmer adjusting mode (memory switch level 2 : K51).**

3. Adjusting the presser bar pressure

WARNING :
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.
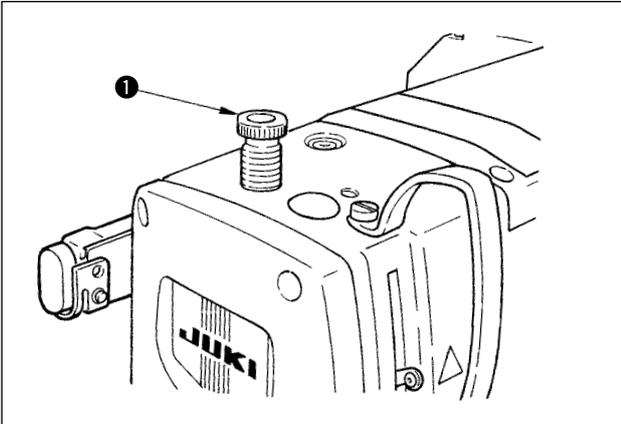
To adjust the pressure applied by the presser bar to fabric, turn presser spring regulator ❶. When the pressure is not enough to prevent fabric from puckering, turn regulator ❶ clockwise.

4. Adjustment of the bobbin presser unit

WARNING :
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.
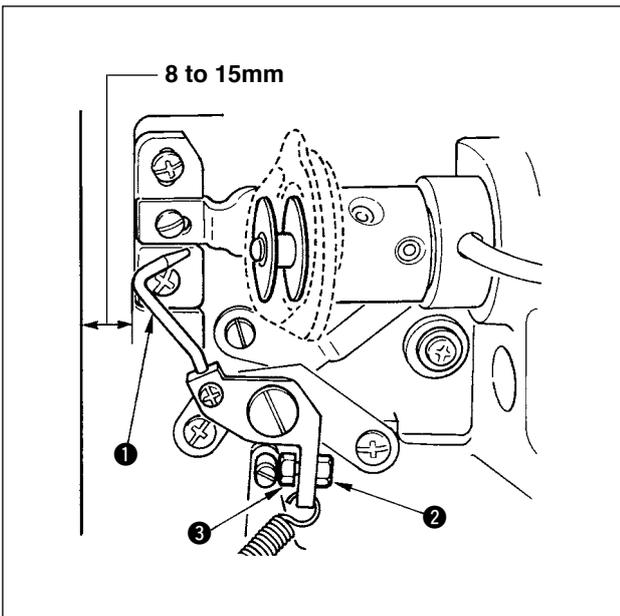
8 to 15mm

Loosen nut ❶ and adjust the position with stopper spring ❷ so that the distance from the front end of machine bed to bobbin presser ❸ is 8 to 15 mm when the sewing machine stops. Then tighten nut ❷.

5. Thread tension
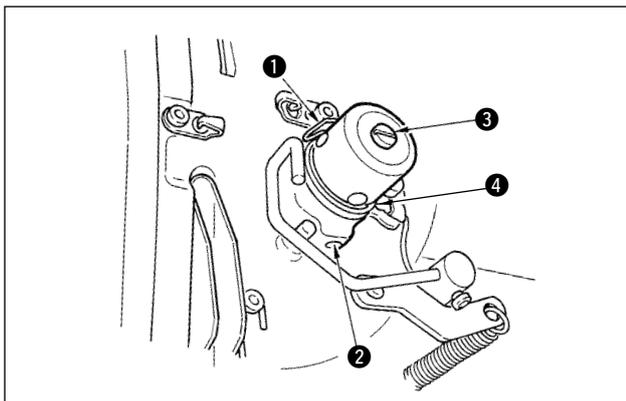
(1) Thread take-up spring (purl stitch)

1) The thread take-up amount of thread take-up spring ❶ is 8 to 10 mm, and the appropriate pressure at the start is approximately 0.06 to 0.1N.

2) To change the stroke of the thread take-up spring, loosen screw ❷, insert a thin screwdriver into the slot of thread tension post ❸, and turn it.

3) To change the pressure of the thread take-up spring, insert a thin screwdriver into the slot of thread tension post ❸ while screw ❷ is tightened, and turn it. Turning it clockwise will increase the pressure of the thread take-up spring.
Turning it counterclockwise will decrease the pressure.
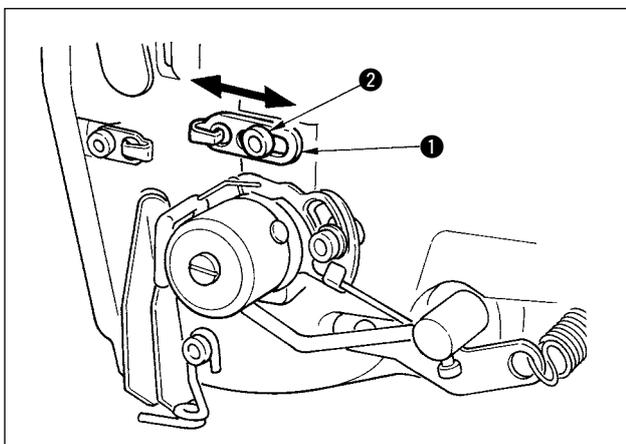
(2) Adjusting the thread take-up amount of the thread take-up lever

The thread take-up amount of the thread take-up lever should be adjusted in accordance with the thickness of the sewing products so as to obtain well-tightened stitches.

a. For heavy-weight materials, loosen setscrew ❷ in thread guide ❶, and move the thread guide to the left. The thread take-up amount of the thread take-up lever will be increased.

b. For light-weight materials, move thread guide ❶ to the right. The thread take-up amount of the thread take-up lever will be reduced.

6. Cleaning the filter
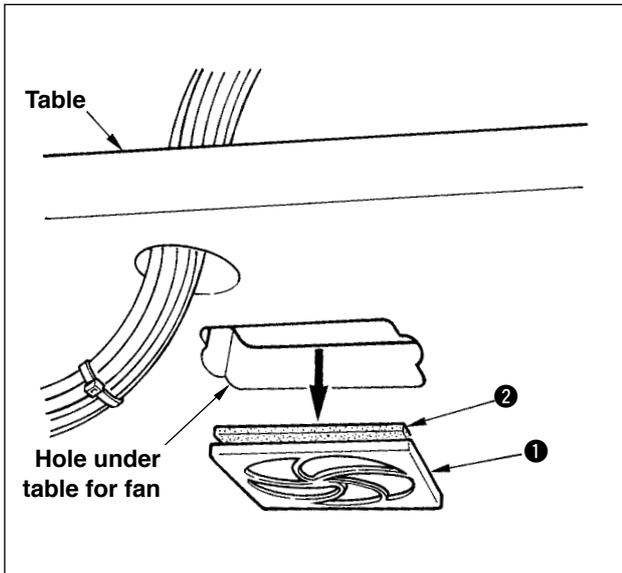
Clean filter ❷ of the fan located on the bottom surface of the machine table (bed base) once every week.

1) Pull the screen kit ❶ in the direction of the arrow to remove it.
2) Wash the filter ❷ under running water.
3) Reinstall the filter ❷ and the screen kit ❶.

Table

Hole under table for fan

❷

❶

7. Replacing the fuse
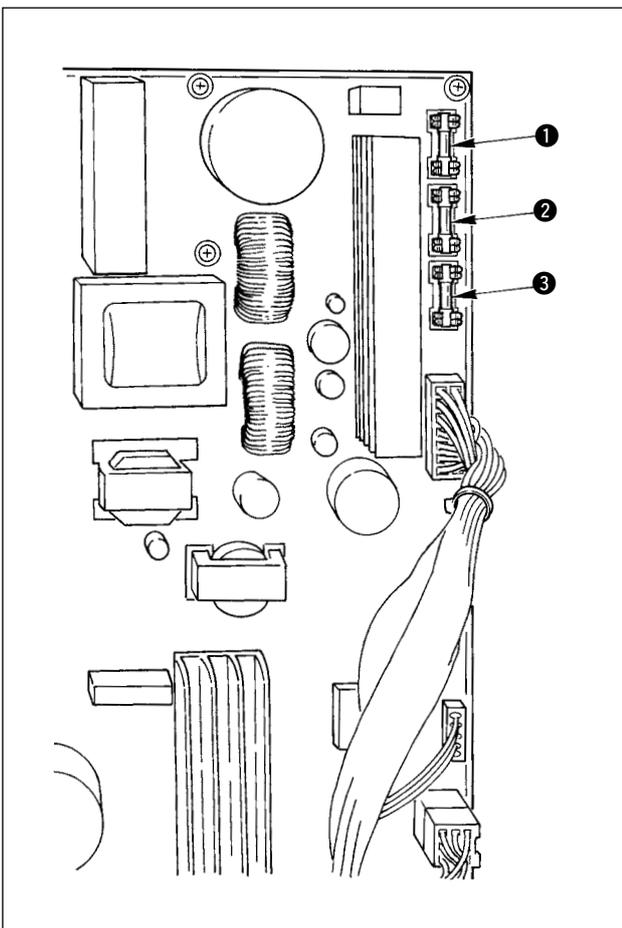
The machine uses the following three fuses :

❶ For pulse motor power supply protection
5A (time-lag fuse)
❷ For solenoid and pulse motor power supply protection
3.15A (time-lag fuse)
❸ For control power supply protection
2A (fast-blow type fuse)

❶

❷

❸

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Ⅶ. GAUGE COMPONENTS

1. Cloth cutting knife
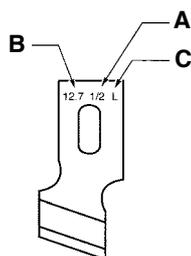
A Knife size (inch)	B Knife size (mm)	C Mark	D Part No.
1/4	6.4	F	B2702047F00
3/8	9.5	K	B2702047K00A
7/16	11.1	I	B2702047I00
1/2	12.7	L	B2702047L00A
9/16	14.3	V	B2702047V00
5/8	15.9	M	B2702047M00A
11/16	17.5	A	B2702047A00
3/4	19.1	N	B2702047N00
7/8	22.2	P	B2702047P00
1	25.4	Q	B2702047Q00A
1-1/4	31.8	S	B2702047S00A

2. Throat plate
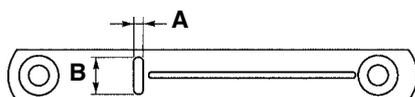
Type \ Stitch width	5mm (Marking・AxB)	6mm (Marking・AxB)
Standard (S)	40004350 (S5・1.4x6.2)	40004351 (S6・1.4x7.4)
For knits (K)	40004352 (K5・1.2x6.2)	40004353 (K6・1.2x7.4)

3. Presser

Stitch width 5 mm

Type \ Size (AxB)	1 (4x25)	2 (5x35)	3 (5x41)	5(5x120,5x70)
Standard (S)	B1552781000A	B1552782000	B1552783000	40008658(5x120) 14523708(5x70)
For knits (K)	D1508771K00A	D1508772K00	D1508773K00	-

Stitch width 6 mm

Type \ Size (AxB)	3 (6x41)
Standard (S)	14524409

Sewing area (AxB)
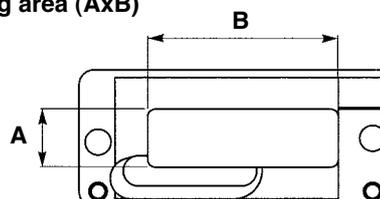
Ⅷ. ERROR CODE LIST

Error code		Description	How to recover	Place of recovery
E001		**Contact of initialization of EEP-ROM of MAIN CONTROL p.c.b.** When data is not written in EEP-ROM or data is broken, initialization of the data is automatically informed.	Turn OFF the power.	
E007		**Main shaft motor-lock** When large needle resistance sewing product is sewn	Turn OFF the power	
E018		**Type of EEP-ROM is wrong.** When the type of mounted EEP-ROM is wrong	Turn OFF the power.	
E023		**Detection of step-out of presser lifting motor** When step-out of motor is detected at the time when presser lifting motor passes origin sensor or starts operation.	Possible to re-start after pressing reset key.	Standard screen
E024		**Pattern data size over** When sewing cannot be performed since total size of continuous stitching data or size of downloaded data is too large.	Possible to re-start after pressing reset key.	Standard screen
E025		**Detection of step-out of needle thread trimmer motor** When step-out of motor is detected at the time when needle thread trimmer motor passes origin sensor or starts operation.	Possible to re-start after pressing reset key.	Standard screen
E026		**Detection of step-out of bobbin thread trimmer motor** When step-out of motor is detected at the time when bobbin thread trimmer motor passes origin sensor or starts operation.	Possible to re-start after pressing reset key.	Standard screen
E030		**Needle bar upper position failure** When needle does not stop at UP position even with needle UP operation at the time of starting sewing machine.	Possible to re-start after pressing reset key.	Standard screen
E050		**Stop switch** When stop switch is pressed during machine running.	Possible to re-start after pressing reset key.	Step screen
E052		**Thread breakage detection error** When thread breakage has occurred during machine running.	Possible to re-start after pressing reset key.	Step screen.
E061		**Memory switch data error** When memory switch data is broken or revision is old.	Turn OFF the power.	
E062		**Sewing data error** When sewing data is broken or revision is old.	Turn OFF the power.	
E099		**Interference of knife lowering command with thread trimming motion** When inserting position of knife command is improper and knife command interferes with thread trimming motion in case of motion by data from external input device.	Possible to re-start after pressing reset key.	Standard screen
E302		**Confirmation of tilt of machine head** When tilt of machine head sensor is OFF.	Possible to re-start after pressing reset key.	Standard screen
E303		**Z phase sensor error of main shaft motor** Z phase sensor of sewing machine motorencoder is abnormal.	Turn OFF the power.	
E304		**Cloth cutting knife sensor error** When sensor is not OFF while knife is lowered.	Turn OFF the power.	
E486		**Eyelet knife length error** Eyelet knife length is too short to form the shape in case of eyelet shape.	Possible to re-enter after pressing reset key.	Sewing data edit screen [S17] Eyelet knife length
E487		**Eyelet shape length error** Eyelet shape length is too short to form the shape in case of eyelet shape.	Possible to re-enter after pressing reset key.	Sewing data edit screen [S14] Eyelet shape length
E488		**Taper bar-tacking compensation error** When bar-tacking length is too short to form the shape in case of taper bar-tacking shape.	Possible to re-enter after pressing reset key.	Sewing data edit screen [S08] 2nd bar-tacking length
E489		**Knife size error (at the time of plural motions of knife)** When knife size is larger than cloth cutting knife size.	Possible to re-enter after pressing reset key.	Sewing data edit screen [S02] Cloth cut length

Error code		Description	How to recover	Place of recovery
E492		**Presser size over of basting** When stitching data of basting exceeds presser size.	Possible to re-enter after pressing reset key.	Sewing data edit screen [S40] Basting needle entry compensation
E493		**Presser size over of tie stitching at sewing end** When stitching data of tie stitching at sewing end exceeds presser size.	Possible to re-enter after pressing reset key.	Sewing data edit screen [S67] Tie stitching at sewing end width
E494		**Presser size over of tie stitching at sewing start** When stitching data of tie stitching at sewing start exceeds presser size.	Possible to re-enter after pressing reset key.	Sewing data edit screen [S64] Tie stitching at sewing start width
E495		**Presser size error (Width direction : right only)** When stitching data exceeds the size of right only of width direction of presser.	Possible to re-enter after pressing reset key.	Sewing data edit screen [S03] Knife groove width, right or [S06] Ratio of right and left shapes
E496		**Presser size error (Width direction : left only)** When stitching data exceeds the size of left only of width direction of presser.	Possible to re-enter after pressing reset key.	Sewing data edit screen [S04] Knife groove width, left or [S06] Ratio of right and left shapes
E497		**Presser size error (Length direction : front)** When stitching data exceeds the size of front of length direction of presser.	Possible to re-enter after pressing reset key.	Standard screen
E498		**Presser size error (Width direction : right and left)** When stitching data exceeds the size of both right and left of width direction of presser.	Possible to re-enter after pressing reset key.	Sewing data edit screen [S05] Overedging width, left
E499		**Presser size error (Length direction : rear)** When stitching data exceeds the size of rear of length direction of presser.	Possible to re-enter after pressing reset key.	Sewing data edit screen [S02] Cloth cut length
E703		**Panel is connected to the machine other than supposed. (Machine type error)** When machine type code of system is improper in case of initial communication.	Turn OFF the power.	
E704		**Nonagreement of system version** When version of system software is improper in case of initial communication.	Turn OFF the power.	
E730		**Main shaft motor encoder defectiveness or phase-out** When encoder of sewing machine motor is abnormal.	Turn OFF the power.	
E731		**Main motor hole sensor defectiveness or position sensor defectiveness** When hole sensor or position sensor of sewing machine motor is defective.	Turn OFF the power.	
E733		**Reverse rotation of main shaft motor** When sewing machine motor rotates in reverse direction.	Turn OFF the power	
E801		**Phase-lack of power** When phase-lack of input power occurs.	Turn OFF the power.	
E802		**Power instantaneous cut detection** When input power is instantaneously OFF.	Turn OFF the power.	
E811		**Overvoltage** When input power is 280V or more.	Turn OFF the power.	
E813		**Low voltage** When input voltage is 150V or less.	Turn OFF the power.	
E901		**Abnormality of main shaft motor IPM** When IPM of servo control p.c.b. is abnormal.	Turn OFF the power.	
E902		**Overcurrent of main shaft motor** When current flows excessively to sewing machine motor.	Turn OFF the power.	
E903		**Abnormality of stepping motor power** When stepping motor power of servo control p.c.b. fluctuates ±15% or more.	Turn OFF the power.	

Error code		Description	How to recover	Place of recovery
E904		**Abnormality of solenoid power** When solenoid power of servo control p.c.b. fluctuates ±15% or more.	Turn OFF the power.	
E905		**Abnormality of temperature of heat sink for servo control p.c.b.** When temperature of heat sink of servo control p.c.b. is 85°C or more.	Turn OFF the power	
E907		**Stitch width motor origin retrieval error** When origin sensor signal is not inputted at the time of origin retrieval motion.	Turn OFF the power.	
E908		**Y feed motor origin retrieval error** When origin sensor signal is not inputted at the time of origin retrieval motion.	Turn OFF the power	
E909		**Needle thread trimmer motor origin retrieval error** When origin sensor signal is not inputted at the time of origin retrieval motion.	Turn OFF the power.	
E910		**Presser motor origin retrieval error** When origin sensor signal is not inputted at the time of origin retrieval motion.	Turn OFF the power	
E911		**Bobbin thread trimmer motor origin retrieval error** When origin sensor signal is not inputted at the time of origin retrieval motion.	Turn OFF the power	
E915		**Abnormality of communication between operation panel and main CPU** When abnormality occurs in communication.	Turn OFF the power	
E916		**Abnormality of communication between main CPU and main shaft CPU** When abnormality occurs in communication.	Turn OFF the power.	
E918		**Abnormality of temperature of heat sink for main control p.c.b.** When temperature of heat sink of main control p.c.b. is 85flC or more.	Turn OFF the power	
E943		**Defectiveness of EEP-ROM of main control p.c.b** When data writing to EEP-ROM is not performed.	Turn OFF the power.	
E946		**Defectiveness of writing to EEP-ROM of head relay p.c.b.** When data writing to EEP-ROM is not performed.	Turn OFF the power	
E999		**When cloth cutting knife does not return** • When cloth cutting knife does not return after the lapse of predetermined time. • When sensor is not turned ON while cloth cutting knife is raising (at the time of waiting).	Turn OFF the power	

Ⅸ. TROUBLES AND CORRECTIVE MEASURES

Troubles	Causes	Corrective measures	Page
1. Needle thread break-age	1. Thread tension at parallel section is too high.	○ Decrease the thread tension at parallel section.	P.22
	2. Pressure or stroke of thread take-up spring is too large.	○ Decrease the tension of thread take-up spring or decrease its stroke.	P.50
	3. There is a burr or scratch on the blade point of hook.	○ Buff the blade point of hook. Or, replace the hook.	–
	4. Hook timing is not proper.	○ Adjust again the hook timing with timing gauge.	P.47
	5. There is a scratch on the thread path.	○ Polish the thread path with sand paper and buff it.	–
	6. Attaching needle is wrong.	○ Adjust again the direction, height, etc.	P.12
	7. Needle is too thin.	○ Replace the needle with a thicker one.	–
	8. Needle tip is damaged.	○ Replace the needle.	–
2. Needle thread slips off.	1. Needle thread trimmer opens too early.	○ Delay the opening timing of the needle thread trimmer.	P.48
	2. Whip stitching is not formed at the start of sewing.(Tension at the start of sewing is too high.)	○ Decrease tension at the start of sewing.	P.32
	3. Threading needle thread is wrong.	○ Thread properly again.	P.13
	4. Speed at the start of sewing is too fast.	○ Set the soft-start function.	P.43
3. Wobbling at parallel section	1. Thread tension at parallel section is too low.	○ Increase the thread tension at parallel section.	P.22
	2. Bobbin thread tension is too high.	○ Decresase bobbin thread tension. (Purl stitching : 0.05 to 0.1N)	P.14
	3. Pre-tension is too low.	○ Increase pre-tension.	–
4. Wobbling at the start of sewing	1. Thread tension at parallel section is too low.	○ Increase the thread tension at parallel section.	P.22
	2. Position of needle thread trimmer is too high.	○ Lower the needle thread trimmer to such an extent that it does not come in contact with the presser.	P.48
	3. Stroke of thread take-up spring is too large.	○ Decrease the stroke of thread take-up spring.	P.50
5. Needle thread ap-pears on the wrong side of material at bar-tacking section in dumpling condition.	1. Bar-tacking thread tension is too low.	○ Increase the bar-tacking thread tension.	P.22
	2. Bobbin thread tension is too high.	○ Decresase the bobbin thread tension. (0.05 to 0.1N)	P.14
	3. Number of stitches of radial shape is too many.	○ Decrease the number of stitches.	P.30
	4. Tension at the end of sewing is too low.	○ Increase tension at the end of sewing.	P.43
6. Stitches float.	1. Bobbin thread tension is too low.	○ Increase the bobbin thread tension.	P.14
	2. Bobbin thread comes off bobbin case.	○ Perform proper threading the bobbin case.	P.13
		○ Take care that the winding amount of bob-bin thread is not excessive.	P.24
7. Stitch skipping	1. Button hole is small in terms of the size of presser.	○ Replace the presser with a smaller one.	–
	2. Material flops because of light-weight.	○ Delay the hook-to-needle timing. (Lower the needle bar by 0.5 mm.)	P.47
	3. Attaching needle is wrong.	○ Adjust again the direction, height, etc.	P.12
	4. Needle is bent.	○ Replace the needle.	–
	5. There is a burr or scratch on the blade point of hook.	○ Buff the blade top of hook. Or, replace the hook.	–
8. Thread frays.	1. Number of stitches of tie stitching is too small.	○ Increase the number of stitches of tie stitching at the end of sewing.	P.33
	2. Width of tie stitching is too wide.	○ Narrow the width of tie stitching at the end of sewing.	P.33
9. Length of needle thread remaining at the end of sewing is too long.	1. Width of tie stitching is too narrow.	○ Widen the width of tie stitching at the end of sewing.	P.33
	2. Tension of tie stitching is too low.	○ Increase tension at the end of sewing.	P.43
10. Needle thread breaks at the start of sewing, or the wrong side of seam is dirty.	1. Tension at the start of sewing is too low.	○ Increase tension at the start of sewing.	P.32

Troubles	Causes	Corrective measures	Page
11. Knife drops even when needle thread is cut.	1. Check whether the thread breakage detector plate is properly adjusted.	○ Adjust the detector plate. (Refer to the Engineer's Manual.)	–
12. Needle breaks.	1. Check whether needle is bent. 2. Check whether needle comes in contact with the blade point of hook. 3. Check whether needle thread trimmer comes in contact with needle when it opens. 4. Check whether needle comes in the center of the needle hole of throat plate. 5. Needle stop position is too low and needle comes in contact with needle thread trimmer when it closes.	○ Replace the needle. ○ Adjust the needle-to-hook timing. ○ Adjust the installing position of needle thread trimmer. ○ Re-adjust the installing position of throat plate base.	P.13 P.47 P.48 –
13. Knife drops plural times.	1. Check whether the cloth cutting knife dropping is set to plural dropping.	○ Release the plural time setting.	P.41

Ⅹ. DRAWING OF THE TABLE

Z-Z (1 : 1)
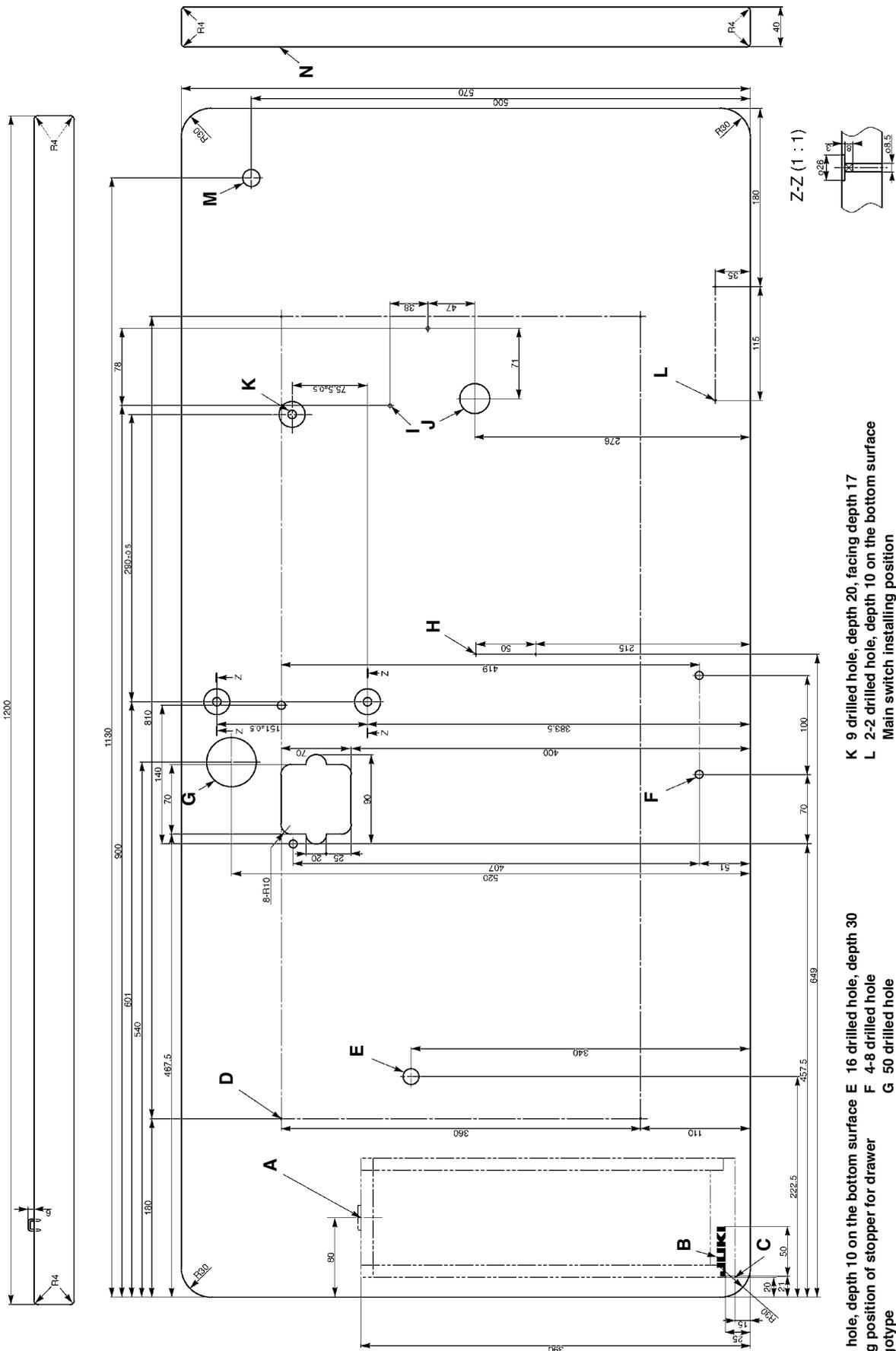
A 2 drilled hole, depth 10 on the bottom surface
   Installing position of stopper for drawer
B JUKI logotype
C 2 drilled hole, depth 10 on the bottom surface
   Installing position of drawer
D 4-2 drilled hole depth 10 on the bottom surface
   Stand installing hole

E 16 drilled hole, depth 30
F 4-8 drilled hole
G 50 drilled hole
H 2-2 drilled hole, depth 10 on the bottom surface
   Pedal switch installing position
J 2-3.5 drilled hole, depth 14
   30 drilled hole

K 9 drilled hole, depth 20, facing depth 17
L 2-2 drilled hole, depth 10 on the bottom surface
   Main switch installing position
M 17 drilled hole
N Right side

XI. INITIAL VALUE DATA FOR EACH SHAPE TABLE

Shape selection Level 1 = shapes 1–12; Shape selection Level 2 (20 shapes) = shapes 1–20; Shape selection Level 3 (30 shapes) = shapes 1–30. The column headers below (1–30) correspond to the sewing-shape icons shown in row S01.

No.	Item	Unit	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
S01	Sewing shape		▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯	▯
S02	Cloth cutting length	mm	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	12.7	13.0	19.1	19.1	19.1
S03	Knife groove width, right	mm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	–	–	0.10	0.10
S04	Knife groove width, left	mm	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	–	0.10	0.10
S05	Overedging width, left	mm	1.70	1.70	1.70	1.70	1.70	1.70	1.4	1.4	1.4	1.4	1.70	1.70	1.70	1.70	1.70	1.4	1.4	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	–	–	–	–
S06	Left/right shape ratio (right side in terms of left side)	%	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	–	–	–	–
S07	Pitch at parallel section	mm	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	–	–	–	–
S08	2nd bar-tacking length	mm	1.0	–	1.0	–	1.5	3.0	1.0	–	1.5	3.0	–	1.0	1.0	1.5	3.0	–	–	–	1.5	3.0	–	–	–	1.5	3.0	–	–	–	–	–
S09	1st bar-tacking length	mm	1.0	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1.0	1.0	1.0	1.0	1.0	–	–	–	–	–	–	–	–
S10	Bar-tacking width, right compensation	mm	0.0	–	0.0	–	0.0	–	0.0	–	0.0	–	–	0.0	0.0	0.0	–	–	–	0.0	0.0	0.0	0.0	0.0	–	–	–	–	–	–	–	–
S11	Bar-tacking width, left compensation	mm	0.0	–	0.0	–	0.0	–	0.0	–	0.0	–	–	0.0	0.0	0.0	–	–	–	0.0	0.0	0.0	0.0	0.0	–	–	–	–	–	–	–	–
S12	Taper bar-tacking offset, left	mm	–	–	–	–	–	0.85	–	–	–	–	0.85	–	–	–	0.85	–	–	–	–	–	0.85	–	–	–	–	–	–	–	–	–
S13	Taper bar-tacking offset, right	mm	–	–	–	–	–	0.85	–	–	–	–	0.85	–	–	–	0.85	–	–	–	–	–	0.85	–	–	–	–	–	–	–	–	–
S14	Eyelet shape length	mm	–	–	–	–	–	–	2.0	2.0	2.0	2.0	–	–	–	–	–	2.0	2.0	–	–	–	–	–	–	–	–	–	–	–	–	–
S15	Number of stitches of eyelet shape	Stitch	–	–	–	–	–	–	3	3	3	3	–	–	–	–	–	3	3	–	–	–	–	–	–	–	–	–	–	–	–	–
S16	Eyelet width	mm	–	–	–	–	–	–	1.0	1.0	1.0	1.0	–	–	–	–	–	1.0	1.0	–	–	–	–	–	–	–	–	–	–	–	–	–
S17	Eyelet length	mm	–	–	–	–	–	–	3.0	3.0	3.0	3.0	–	–	–	–	–	3.0	3.0	–	–	–	–	–	–	–	–	–	–	–	–	–
S18	Round type shape length	mm	–	2.0	2.0	2.0	2.0	2.0	–	2.0	–	–	2.0	2.0	2.0	2.0	2.0	2.0	2.0	–	2.0	2.0	–	–	2.0	2.0	2.0	2.0	–	–	–	–
S19	Number of stitches of radial shape	Stitch	–	–	3	3	3	3	–	3	–	–	–	–	–	–	–	–	3	–	–	–	–	–	3	3	3	–	–	–	–	–
S20	Radial shape reinforcement (with/without)		–	–	Without	Without	Without	Without	–	Without	–	–	–	–	–	–	–	–	Without	–	–	–	–	–	Without	Without	Without	–	–	–	–	–
S21	Pitch at bar-tacking section	mm	0.30	0.30	0.30	–	0.30	0.30	0.30	–	0.30	0.30	0.25	0.30	0.25	0.25	0.25	0.25	0.30	0.30	0.30	0.30	0.30	0.30	0.25	0.30	0.25	0.25	–	–	–	–
S22	1st clearance	mm	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5.	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	–	2.0	2.0	2.0
S23	2nd clearance	mm	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	–	2.0	2.0	2.0
S31	1/2 stitching		Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	Single	–	–	–	Single
S32	Double stitching cross selection		<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	<	–	–	–	<
S33	Double stitching width compensation	mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–	–	–	<
S34	Number of times of basting	Time	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	2	–
S35	Pitch of basting	mm	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	–
S36	Rolling length of basting	mm	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	–
S37	Rolling pitch of basting	mm	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	–
S38	Rolling width of basting	mm	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	–
S39	Compensation before/after needle entry of basting	mm	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	–
S40	Compensation left/right needle entry of basting	mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
S41	Compensation of left side position of basting	mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
S42	Compensation of right side position of basting	mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	–
S44	Speed setting of basting	sti/min	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	2000	–
S51	Left parallel section tension		120	60	120	120	120	120	60	60	60	60	60	60	60	60	60	60	120	60	60	60	60	60	60	60	60	60	60	60	60	60
S52	Right parallel section tension		120	60	120	120	120	120	60	60	60	60	60	60	60	60	60	60	120	60	60	60	60	60	60	60	60	60	60	60	60	60
S53	Left parallel section tension (1st cycle of double stitching)		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	–	–	–	–
S54	Right parallel section tension (1st cycle of double stitching)		60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	–	–	–	–
S55	1st bar-tacking section tension		35	60	120	35	35	35	60	60	60	60	60	60	60	60	60	60	30	60	60	60	60	60	60	60	60	60	–	–	–	–
S56	2nd bar-tacking section tension		35	60	35	35	35	35	60	60	60	60	60	60	60	60	60	60	60	60	120	60	60	60	60	60	60	60	–	–	–	–
S57	Setting of needle thread tension at sewing start		25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25	25
S58	Setting of needle thread tension of basting		80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	---
S59	ACT timing adjustment at 1st bar-tacking start	Stitch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	–	–	–	–
S60	ACT timing adjustment at the start of right overedging	Stitch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
S61	ACT timing adjustment at 2nd bar-tacking start	Stitch	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	–	–	–	–
S62	Number of stitches of tie stitching at the start of sewing	Stitch	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
S63	Sewing pitch of tie stitching at the start of sewing		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
S64	Tie stitching width at sewing start	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
S65	Lengthwise compensation of tie stitching at the start of sewing	mm	0.0	1.5	0.0	1.5	0.0	0.0	0.0	1.5	0.0	0.0	1.5	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5	1.5	0.0	0.0	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.0
S66	Crosswise compensation of tie stitching at the start of sewing	mm	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S67	Tie stitching width at sewing end	mm	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
S68	Number of stitches of tie stitching at sewing end	Stitch	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
S69	Lengthwise compensation of tie stitching at the end of sewing	mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
S70	Crosswise compensation of tie stitching at the end of sewing	mm	0.9	0.9	0.9	0.9	0.0	0.7	0.9	0.9	0.0	0.7	0.9	0.9	0.9	0.0	0.7	0.9	0.9	0.9	0.9	0.9	0.0	0.7	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
S81	Knife motion (With/without)		With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	With	–	With	With	With
S83	Knife at 1st cycle of double stitching (Without/with)		Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	Without	–	–	–	Without
S84	Max. speed limitation	sti/min	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600	3600
S86	Pitch of going	mm	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.80	0.80	0.80	0.80
S87	Width of going	mm	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1.7	1.7	1.7	1.7
S88	Pitch of returning	mm	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.80	0.80	0.80	0.80
S89	Width of returning	mm	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	1.7	1.7	1.7	1.7