

***ENGLISH***

**MO-6800S(D)/DD10 Series  
INSTRUCTION MANUAL**

# CONTENTS

|   |           |
|---|-----------|
| <b>1. SPECIFICATION .....</b>   | <b>1</b>  |
| 1-1. Specifications of the sewing machine head .....  | 1         |
| 1-2. Specifications of the control box .....  | 1         |
| <b>2. NAMES OF MAJOR PARTS.....</b>   | <b>2</b>  |
| <b>3. INSTALLATION.....</b>   | <b>3</b>  |
| 3-1. Installing the table and the table stand .....   | 3         |
| 3-2. Installing the pedal sensor .....  | 4         |
| 3-3. Attaching the connecting rod .....   | 5         |
| 3-4. Connecting the connector .....   | 6         |
| 3-5. How to install the power plug .....  | 7         |
| 3-6. Power switch .....   | 7         |
| <b>4. LUBRICATION AND DRAINAGE .....</b>  | <b>8</b>  |
| 4-1. Lubrication oil .....  | 8         |
| 4-2. Drainage and refill the oil.....   | 8         |
| 4-3. Exclusive grease replenishment (only for the MO-6800S).....  | 10        |
| <b>5. PREPARATION BEFORE SEWING .....</b>   | <b>11</b> |
| 5-1. Threading .....  | 11        |
| 5-2. Adjusting the thread tension .....   | 14        |
| 5-3. Replace the needle .....   | 15        |
| 5-4. Adjusting the stitch length.....   | 16        |
| 5-5. Adjusting the differential feed ratio .....  | 16        |
| 5-6. Replace the knives .....   | 17        |
| 5-7. Adjusting the overedge width.....  | 18        |
| 5-8. Adjusting the needle height.....   | 18        |
| 5-9. Adjusting the presser foot .....   | 19        |
| 5-10. Adjusting the feed dog.....   | 21        |
| 5-11. The relationship between the needle and the looper .....  | 22        |
| 5-12. Adjusting the amount of travel of the double chainstitch looper .....   | 24        |
| <b>6. OPERATION PROCEDURE .....</b>   | <b>25</b> |
| 6-1. Operation panel .....  | 25        |
| 6-2. Font comparison table .....  | 26        |
| 6-3. Function setting.....  | 27        |
| 6-4. Function setting table .....   | 28        |
| 6-5. Details of setting of the main functions .....   | 32        |
| 6-6. Initialization of the function setting data.....   | 34        |
| 6-7. Hand LED light.....  | 35        |
| 6-8. About the USB.....   | 36        |
| <b>7. MAINTENANCE .....</b>   | <b>37</b> |
| <b>8. ADJUSTMENT DIMENSION VALUES .....</b>   | <b>38</b> |
| 8-1. Dimensions use to adjusting the looper and the needle guard .....  | 38        |
| 8-2. Dimensions related to the position of the thread take-up and the looper thread cam<br>(standard adjustment)..... | 39        |
| <b>9. ERROR CODE LIST .....</b>   | <b>41</b> |
| <b>10. TABLE DRAWING .....</b>  | <b>42</b> |

# 1. SPECIFICATION

## 1-1. Specifications of the sewing machine head

|                         | MO-6804(D)/DD  | MO-6814S(D)/DD | MO-6816S(D)/DD                  |
|-------------------------|--|----------------|---------------------------------|
| Sewing speed            | Max. 7,000 sti/min (Excluding some subclass models)  |                |                                 |
| Stitch length           | 0.6 to 3.8 (4.5) mm  |                |                                 |
| Needle gauge            | -  | 2.0 mm         | 3.0, 5.0 mm                     |
| Overedge width          | * <sup>1</sup> 1.5, 4.0 mm   | 3.0, 4.0 mm    | 4.0, 5.0, * <sup>1</sup> 6.0 mm |
| Differential feed ratio | Gathering stitch1 : 2(Max. 1 : 4)<br>Stretching stitch1 : 0.7(Max. 1 : 0.6)  |                |                                 |
| Needle                  | DC × 27 (Standard)   |                |                                 |
| Motor                   | DD motor   |                |                                 |
| Presser foot lift       | 5 to 7 mm  |                |                                 |
| Lubricating oil         | JUKI MACHINE OIL #18   |                |                                 |
| * <sup>2</sup> Grease   | Exclusive grease Part number: 23640204 (100 g tube)<br>Part number: 40006323 (10 g tube)   |                |                                 |
| Weight                  | 28 kg  |                |                                 |
| Noise                   | <ul style="list-style-type: none"> <li>- Equivalent continuous emission sound pressure level (<math>L_{pA}</math>) at the workstation:<br/>A-weighted value of 83.0 dB; (Includes <math>K_{pA} = 2.5</math> dB); according to ISO 10821-C.6.2 - ISO 11204 GR2 at 6,500 sti/min.</li> <li>- Sound power level (<math>L_{WA}</math>);<br/>A-weighted value of 88.0 dB; (Includes <math>K_{WA} = 2.5</math> dB); according to ISO 10821-C.6.2 - ISO 3744 GR2 at 6,500 sti/min.</li> </ul> |                |                                 |

\*<sup>1</sup> Only for the MO-6800S

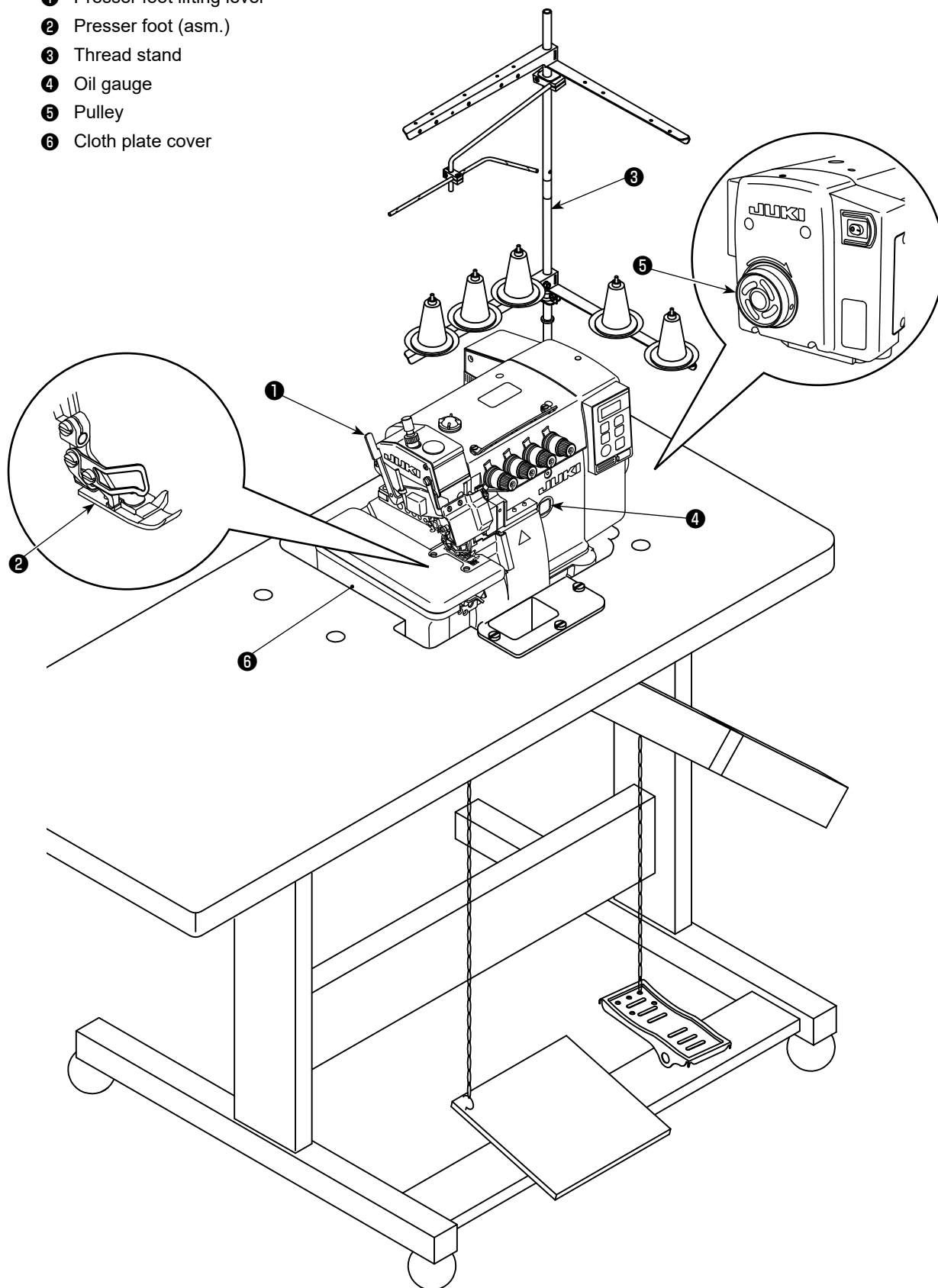
\*<sup>2</sup> Only for the MO-6800D

## 1-2. Specifications of the control box

|                       |   |
|-----------------------|---|
| Supply voltage        | Single phase<br>220 to 240V                       |
| Frequency             | 50Hz/60Hz   |
| Operating environment | Temperature : 0 to 35°C<br>Humidity : 90% or less |
| Input                 | 350VA   |

## 2. NAMES OF MAJOR PARTS

- ❶ Presser foot lifting lever
- ❷ Presser foot (asm.)
- ❸ Thread stand
- ❹ Oil gauge
- ❺ Pulley
- ❻ Cloth plate cover



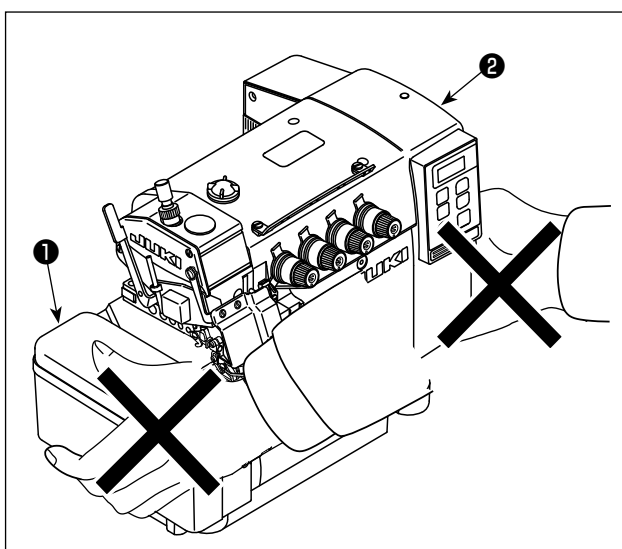
### 3. INSTALLATION

#### WARNING :

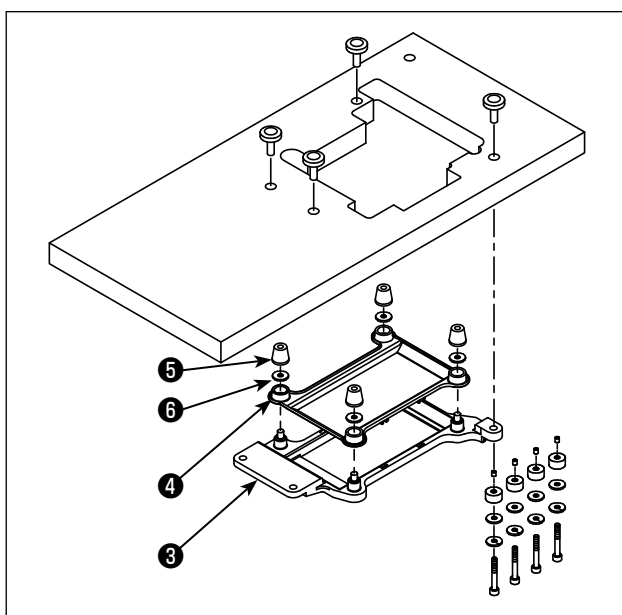
- Machine installation should only be carried out by a qualified technician.
- Contact your dealer or a qualified electrician for any electrical work that may need to be done.
- The sewing machine weighs 28 kg. The installation should be carried out by two or more people.
- Do not connect the power cord until installation is complete. The machine may operate if the treadle is depressed by mistake, which could result in injury.
- Use both hands to hold the machine head when tilting it back or returning it to its original position. If only using one hand, the weight of the machine head may be too heavy to hold, and may cause human physical injuries.
- 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.



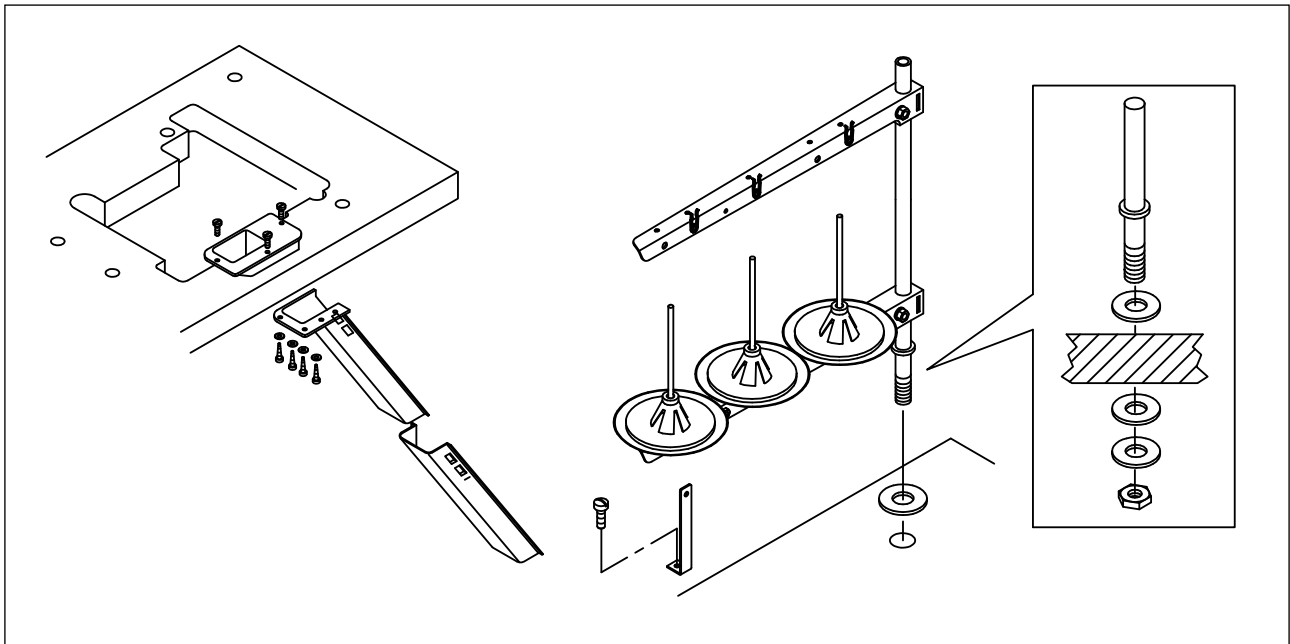
#### 3-1. Installing the table and the table stand



1. After unpacking, do not carry the sewing machine holding the lower section of cloth plate cover ①.
2. Do not hold the bottom section of the electrical box cover ②.

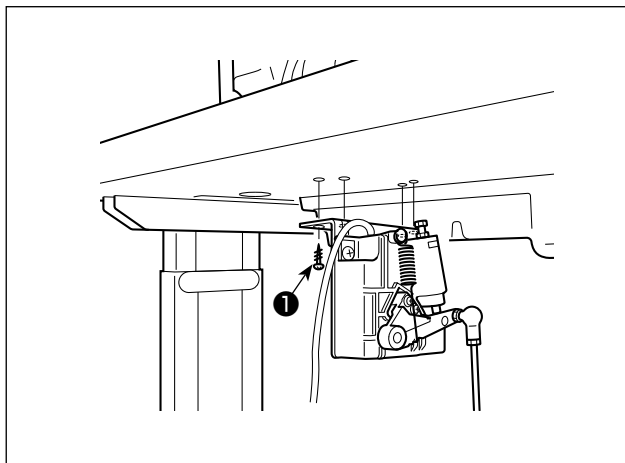


- 1) Install, air-blower case ④, rubber washer ⑥, and rubber cushion ⑤ to frame support plate ③, referring to the table drawing and parts list.

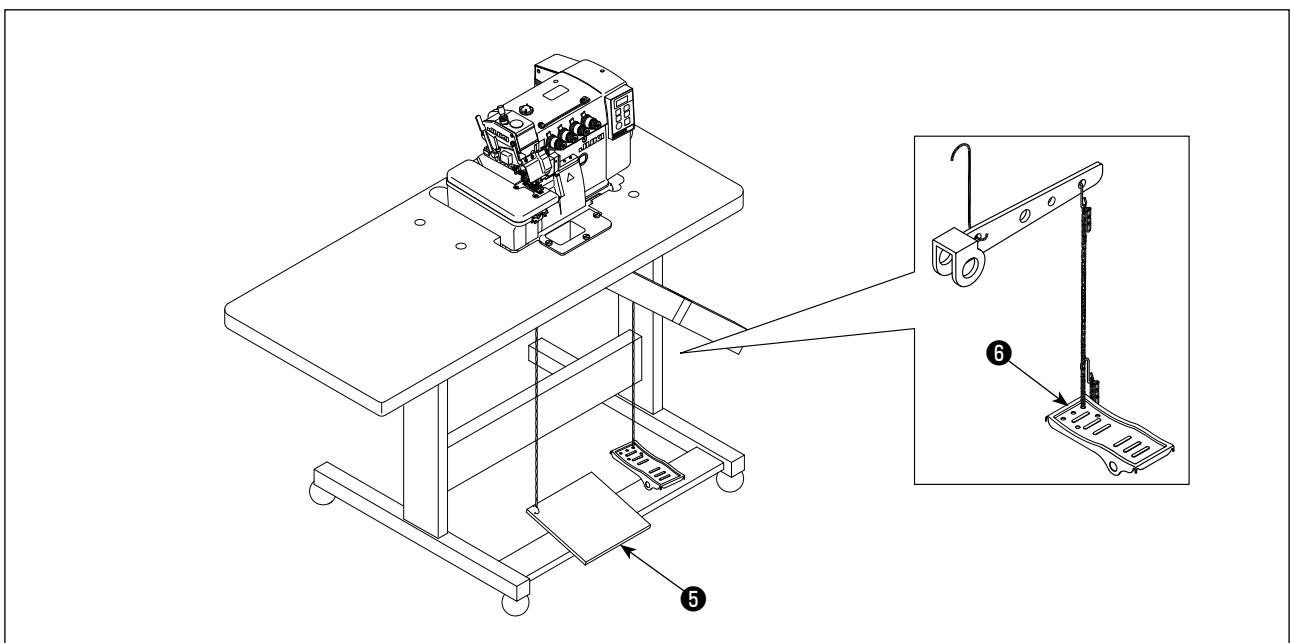


2) Assemble the waste disposal set and the thread stand.

### 3-2. Installing the pedal sensor



- 1) Install the pedal sensor to the table with mounting screws ❶ supplied with the unit. It is necessary to install the pedal sensor at such a position that the connecting rod is perpendicular to the table.
- 2) After the completion of installation of the pedal sensor on the table, place the sewing machine head on the table.

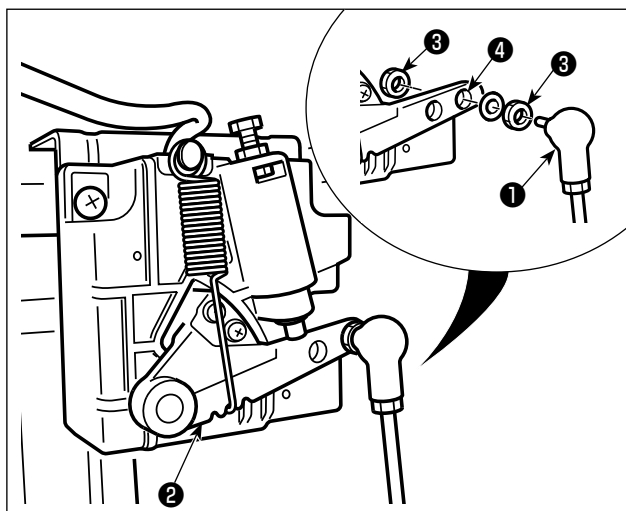


3) Assemble the motor starting pedal ❺ to the left side, and the presser foot pedal ❻ to the right side.

### 3-3. Attaching the connecting rod

**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 a lapse of 5 minutes or more.



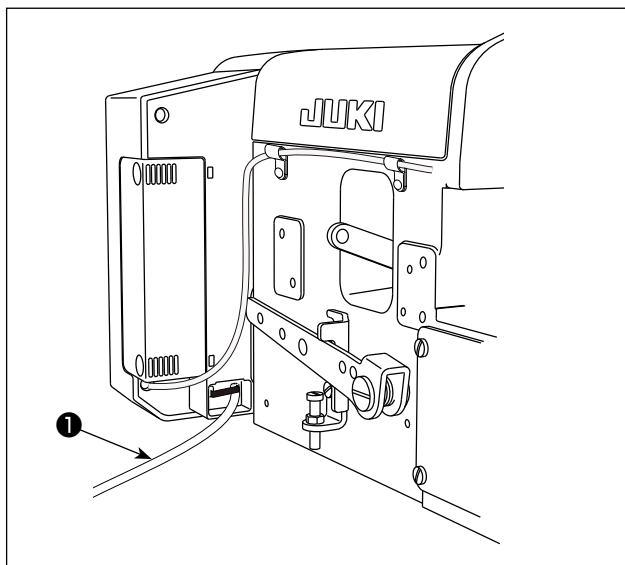
Fix connecting rod ① to installing hole ④ of pedal lever ② with nut ③ .

### 3-4. Connecting the connector


#### WARNING :



- To protect against personal injury resulting from abrupt start of the sewing machine, be sure to turn the power OFF, unplug the machine and wait for five minutes or more before installing the pedal sensor.
- To prevent damage of device caused by maloperation and wrong specifications, be sure to connect all the corresponding connectors to the specified places. (If any of the connectors is inserted into a wrong connector, not only the device corresponding to the connector can break but also it can start abruptly, inviting the risk of personal injury.)
- To prevent personal injury caused by maloperation, be sure to lock the connector with lock.
- Do not connect the power plug until the connection of cords is completed.
- Fix the cords while taking care not to forcibly bend them or excessively clamp them with staples.
- As for the details of handling respective devices, read carefully the Instruction Manuals supplied with the devices before handling the devices.

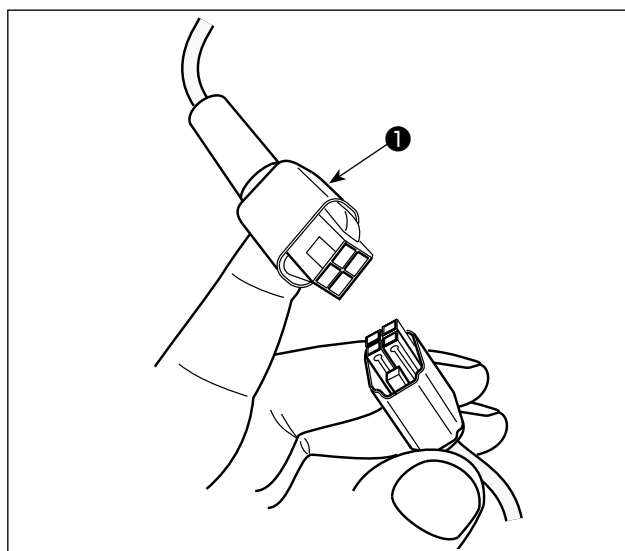


1. Do not insert the power plug into the wall outlet.

 2. Check to be sure that the power switch is turned OFF.

3. Be sure to fully insert the connectors into the corresponding ports until they are locked.

- 1) Draw out pedal sensor cable ❶ coming from the electrical box to the undersurface of the table.



- 2) Connect pedal sensor cable ❶ and the connector under the table.



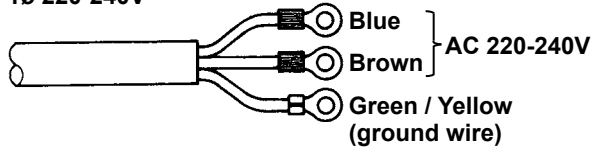
### 3-5. How to install the power plug



#### WARNING :

1. Be sure to attach the ground wire (green/yellow) to the specified location (on the ground side).
2. Take care not to allow terminals to come in contact with each other.

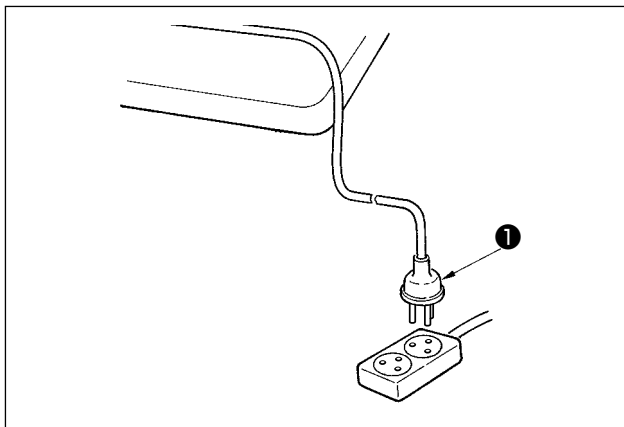
1ø 220-240V



- 1) Connect the power cord to power plug ❶. Connect the blue and brown wires (1ø) to the power supply side and the green/yellow wire to the earth side as illustrated in the figure.



1. Be sure to prepare the power plug ❶ which conforms to the safety standard.
2. Be sure to connect the ground lead (green/yellow) to the grounding side.



- 2) Check that the power switch is in the OFF state. Then, insert the power plug ❶ coming from the power switch into the plug receptacle.

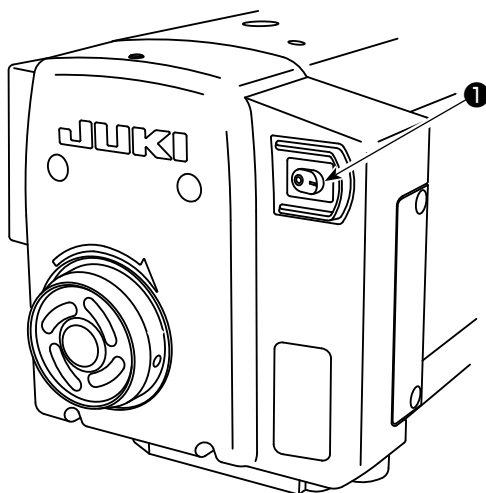


In prior to the connection of the power plug ❶, re-check the supply voltage specification indicated on the control box.

- \* The power plug ❶ is different in shape according to the destination of the sewing machine.

### 3-6. Power switch

Single phase 220 to 240V



- 1) Turning the power ON with the power switch ❶  
The power to the sewing machine is placed in the ON state when the "I" mark side of power switch ❶ (1ø 220 - 240V type) is pressed; or in the OFF state when the "O" mark side is pressed.

1. Do not strongly tap the power switch by hand.

2. If the power indicator LED on the panel does not light up after having turned ON the power switch ❶, immediately turn OFF the power switch and check the supply voltage.



When you want to re-turn ON power switch ❶ after carrying out the aforementioned steps, it is necessary to wait for five minutes or more after you have turned OFF power switch ❶.

3. Do not place your hand or anything under the needle since the needle bar may automatically move according to the memory switch setting when you turn ON the power to the sewing machine.

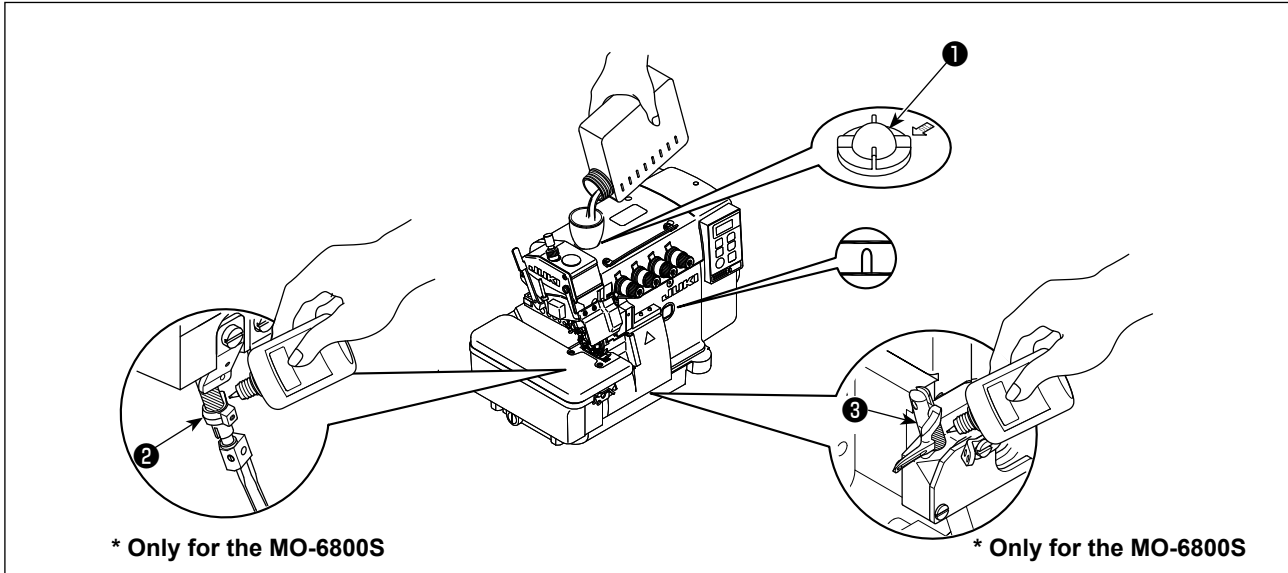
## 4. LUBRICATION AND DRAINAGE



### 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.

### 4-1. Lubrication oil



\* Only for the MO-6800S

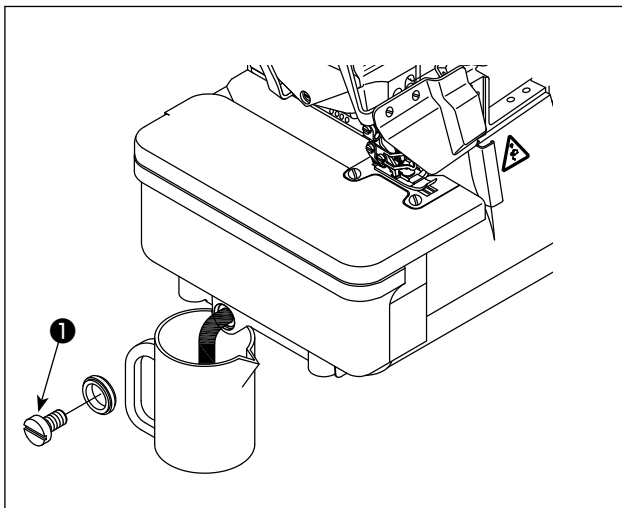
\* Only for the MO-6800S

- 1) Remove oil sight window ❶ from the oil inlet. Add lubricating oil specifically made for machines which run at a super-high speed (JUKI MACHINE OIL #18) supplied with the unit or equivalent through the oil inlet. When the oil surface reaches the space between two marker lines on the oil gauge, tighten oil sight window ❶.
- 2) (Only for the MO-6800S) Before using a new sewing machine for the first time after the purchase or the sewing machine which has not been used for an extended period of time, the shaded sections of needle bar ❷ and upper loop guide ❸ have to be lubricated.

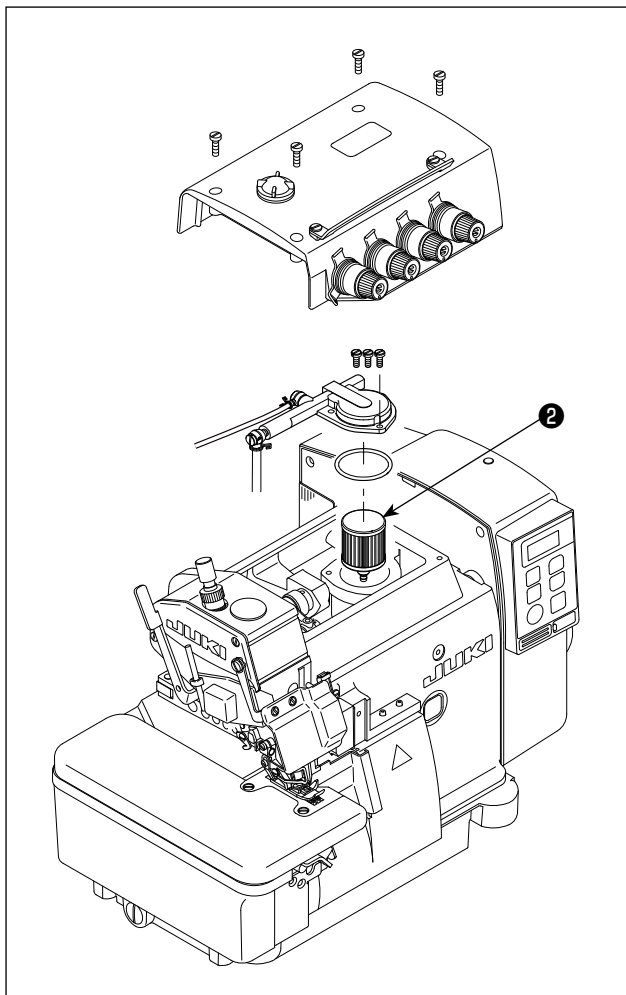


Take care not to pour too much amount of lubricating oil at the time of lubrication. If the machine is lubricated with an excessive amount of oil, oil leakage can be caused.

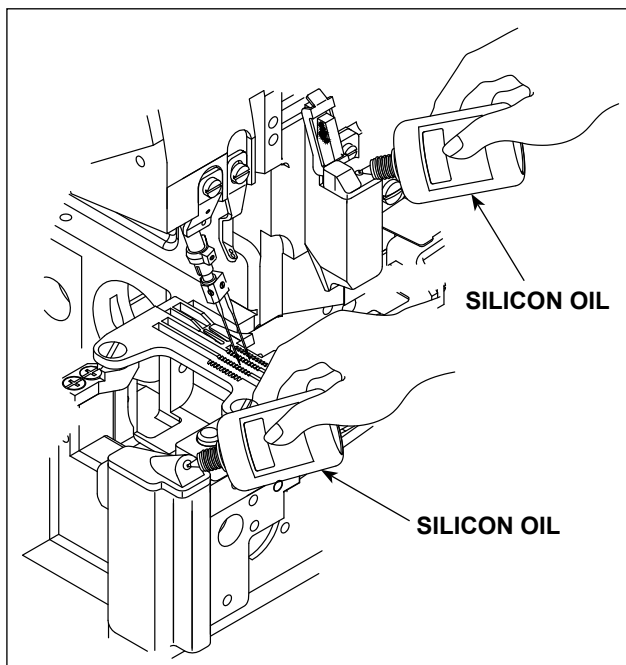
### 4-2. Drainage and refill the oil



- 1) Loosen the screw ❶ and drain all the oil inside the oil tank. Then, tighten the screw ❶ again.
- 2) In order to extend the term of usage, please replace the oil after the first four weeks, and then replace it every four months.



3) To extend the usage term, this machine has equipped an oil filter ② . Clean up this oil filter ② once every month and change it with a new one where necessary.

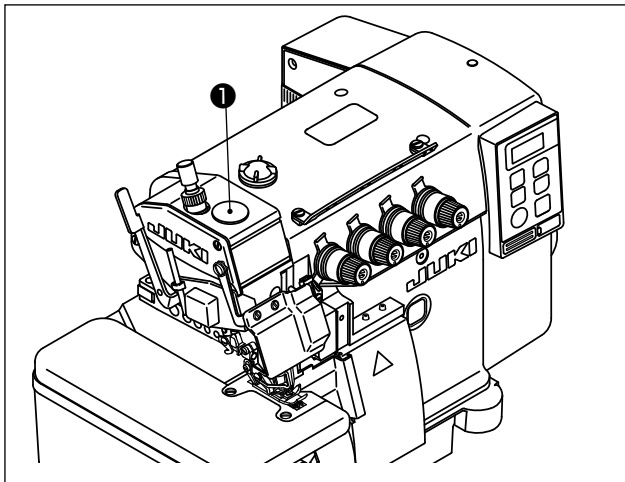


Needle cooling lubrication oil : SILICON OIL

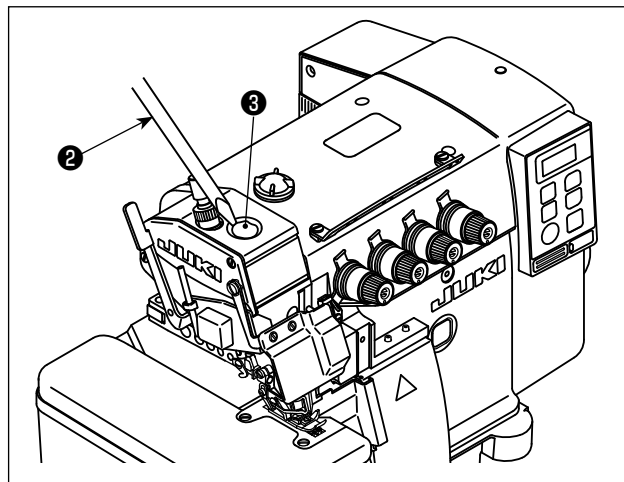
### 4-3. Exclusive grease replenishment (only for the MO-6800S)

- \* Periodical replenishment of the exclusive grease (once every one or two years) will be effective to ensure smooth operation of the machine.

#### 1. How to replenish the needle bar compartment with grease

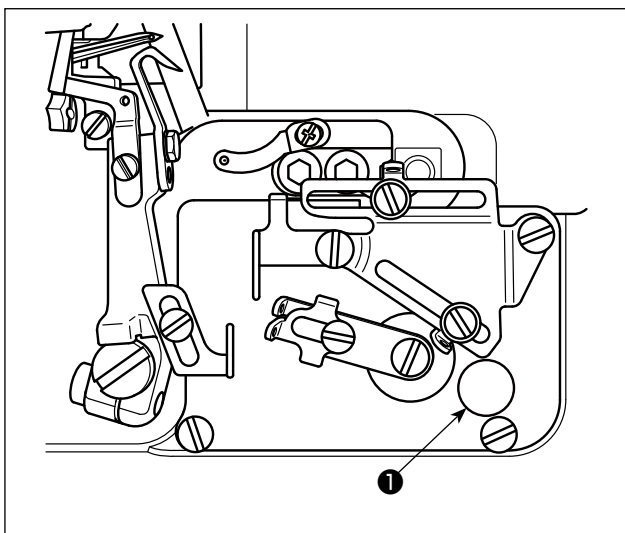


- 1) Remove grease replenishing rubber plug ❶ from the needle bar compartment.

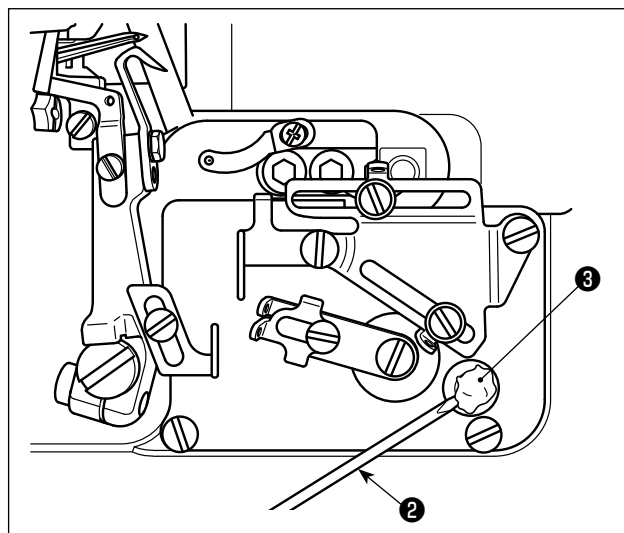


- 2) Replenish grease by means of a tip of screwdriver ❸, ❷ or the like. Use JUKI GREASE A for the replenishment of grease  
JUKI GREASE A: 40006323 (part number)

#### 2. How to replenish the looper compartment with grease



- 1) Remove grease replenishing rubber plug ❶ from the looper compartment.



- 2) Replenish grease by means of a tip of screwdriver ❸, ❷ or the like. Use JUKI GREASE A for the replenishment of grease  
JUKI GREASE A: 40006323 (part number)

## 5. PREPARATION BEFORE SEWING

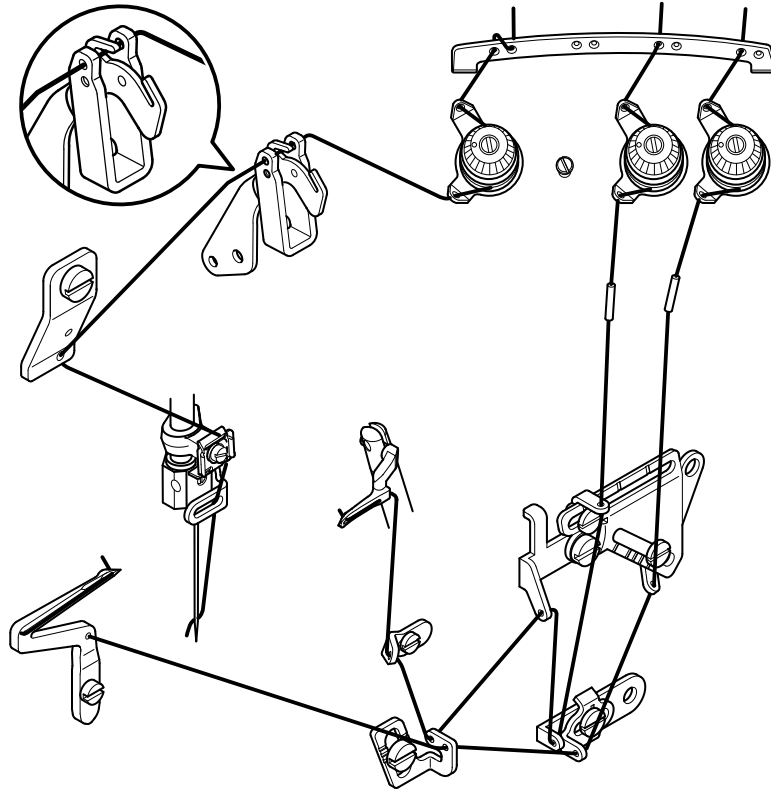
### 5-1. Threading



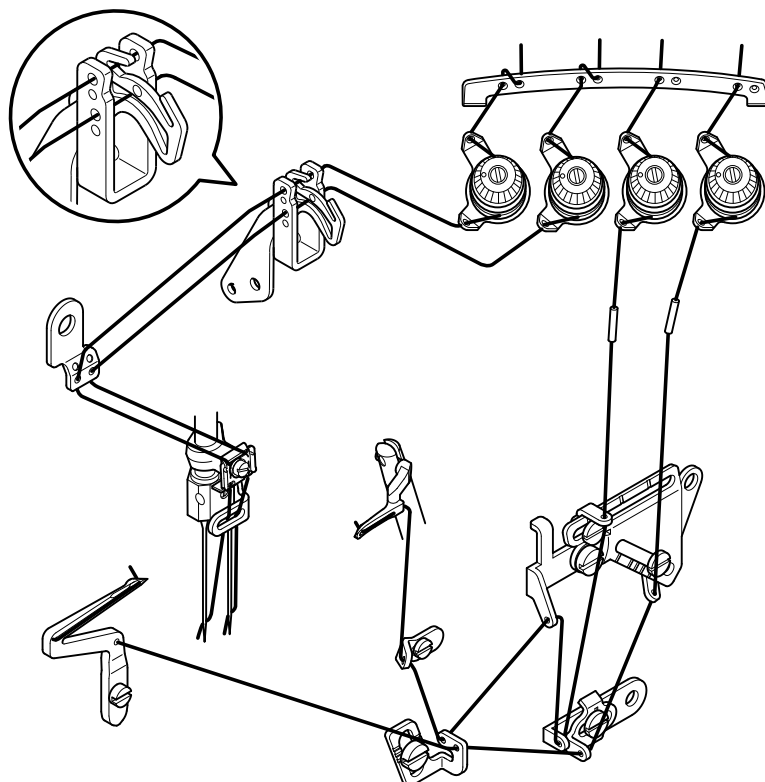
#### **WARNING :**

Follow the procedures for threading. Wrong threading can cause stitching troubles such as thread breakage, stitch skipping and puckering.

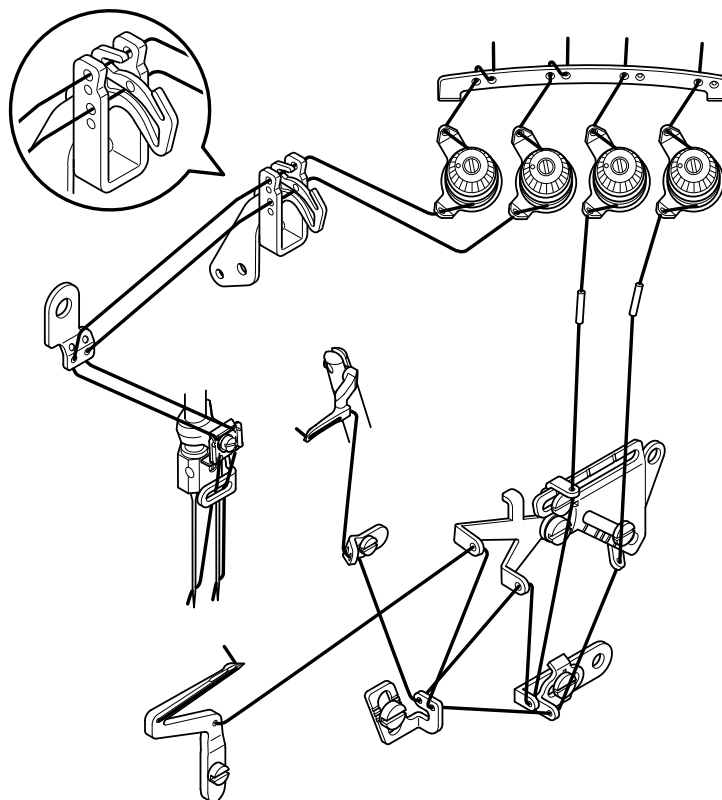
MO-6804



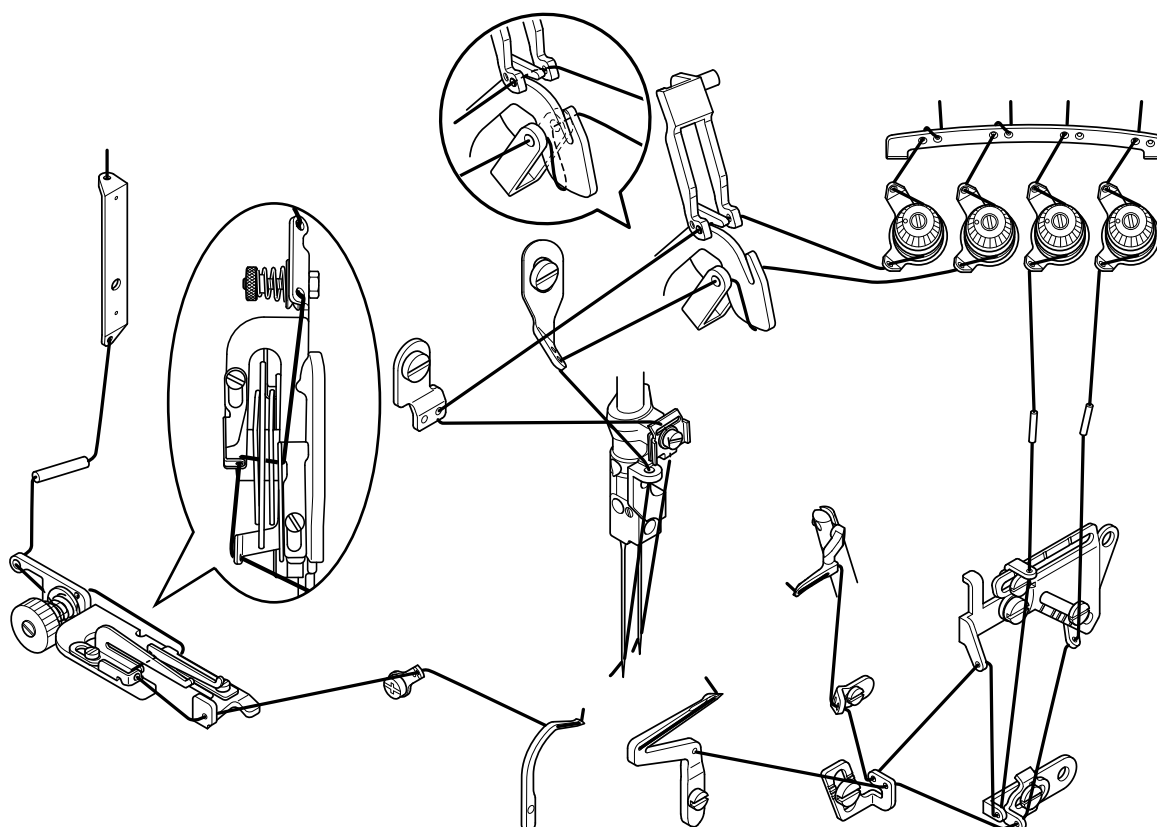
MO-6814



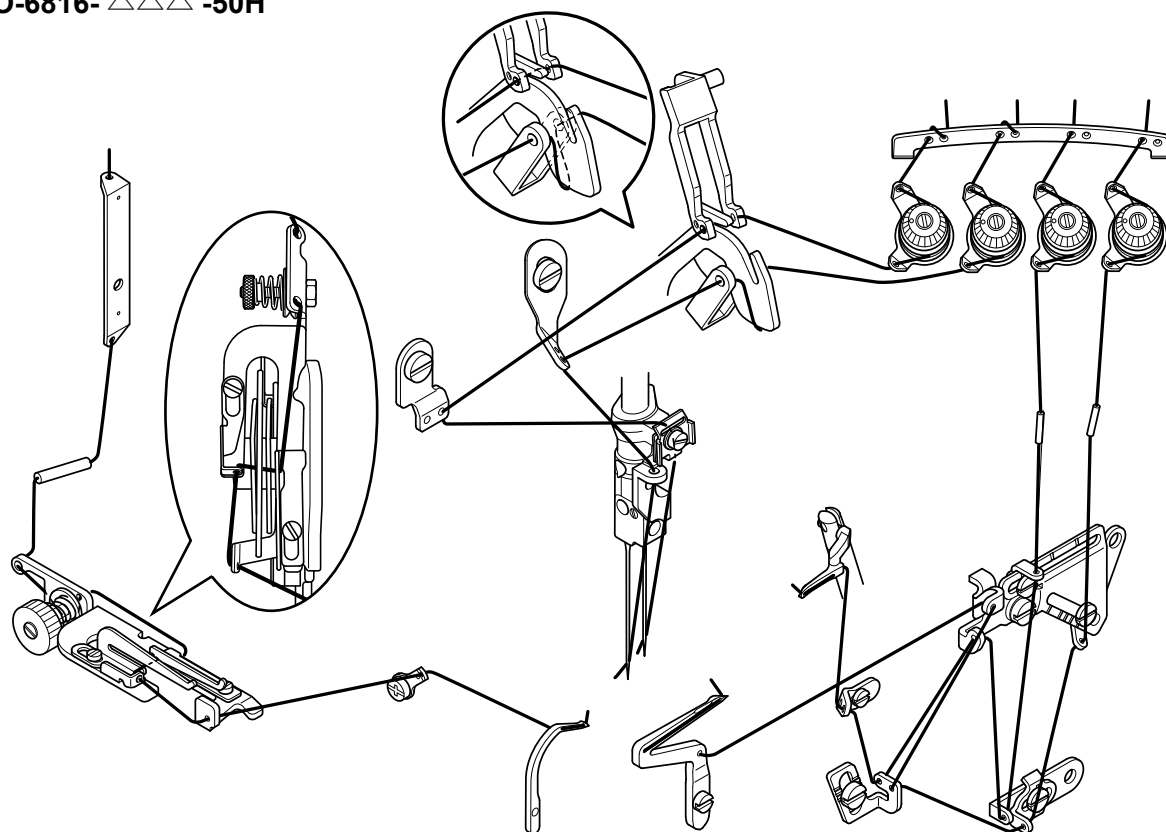
MO-6814- ▲▲▲ -44H



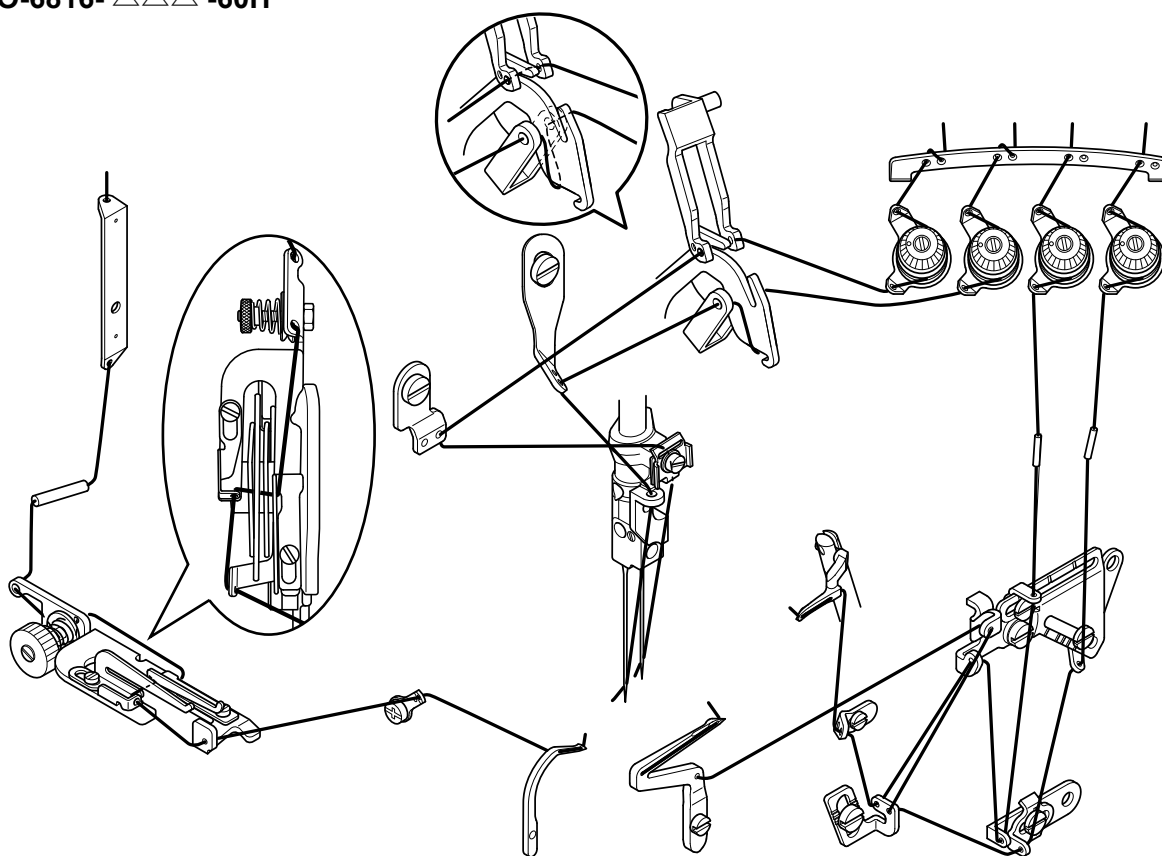
MO-6816



**MO-6816- △△△ -50H**



**MO-6816- △△△ -60H**

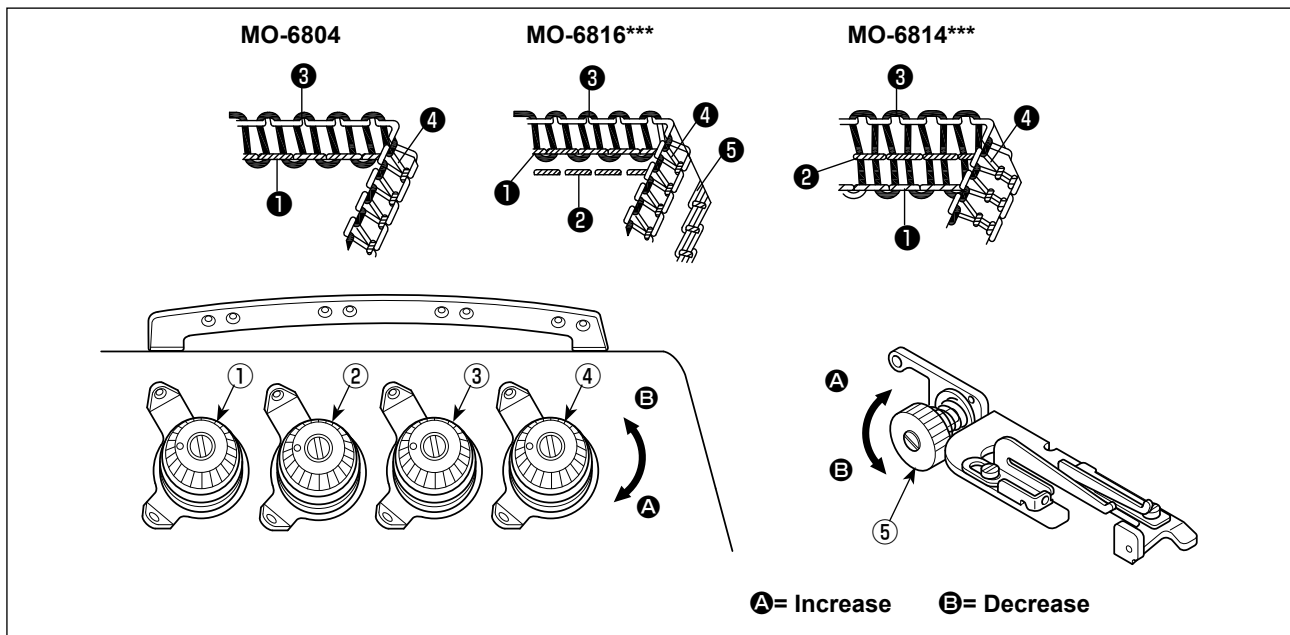


## 5-2. Adjusting the thread tension

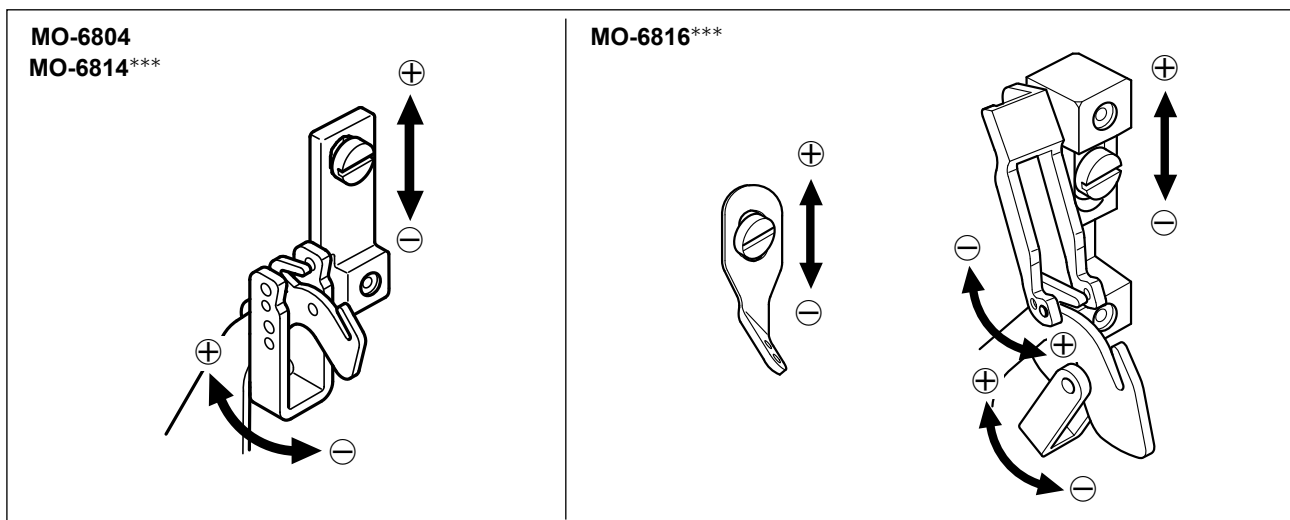
The thread tension should be adjusted properly according to the kinds and the thickness of the materials, stitch length, and seam width, etc. In addition, adjust the nuts case by case individually. Turn the nuts clockwise will increase the thread tension. Otherwise, the thread tension will be decreased.

### (1) Thread tension adjusting nuts

- 1) Tension adjusting nut No. ① controls thread ① .
- 2) Tension adjusting nut No. ② controls thread ② .
- 3) Tension adjusting nut No. ③ controls thread ③ .
- 4) Tension adjusting nut No. ④ controls thread ④ .
- 5) Tension adjusting nut No. ⑤ controls thread ⑤ .



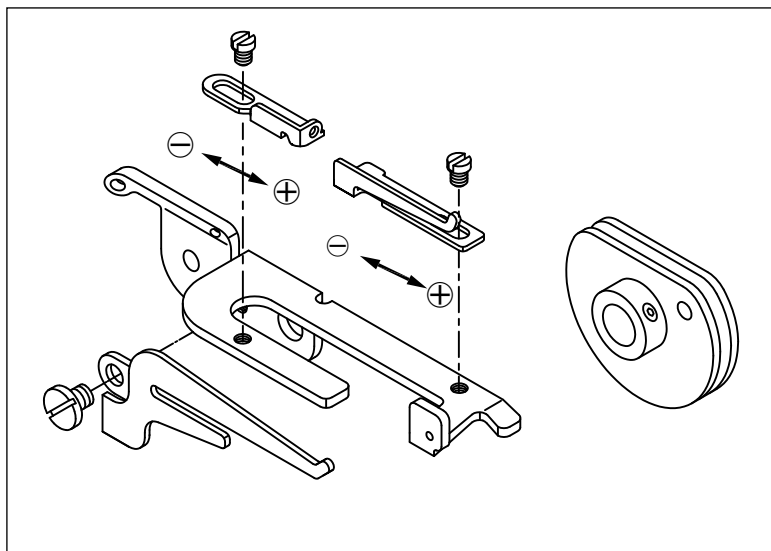
### (2) Adjusting the needle thread length



- 1) Adjust the needle thread length by turning the thread guide in the directions of arrows.
- 2) The ⊕ direction indicates to increase the needle thread length.
- 3) The ⊖ direction indicates to decrease the needle thread length.



### (3) Adjusting the looper thread cam thread guide



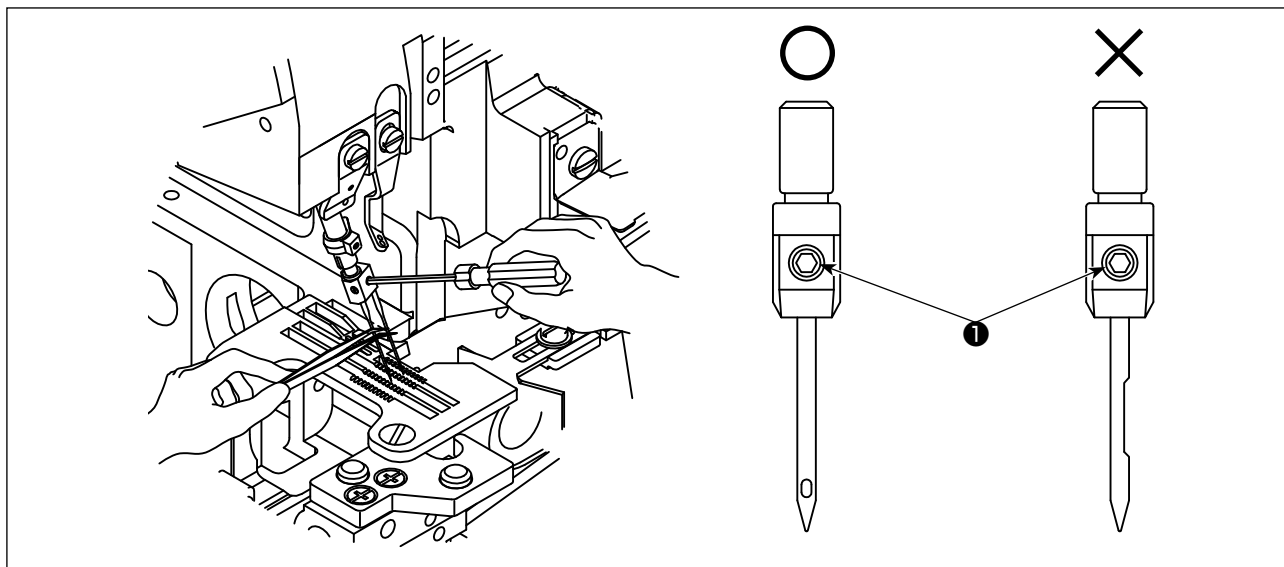
- 1) In the case the looper thread is not appropriately adjusted, thread loops cannot be formed with consistency. (Thread can be excessively loosened or thread loops cannot be formed.)
- 2) ⊕ means to have more thread amount while sewing.
- 3) ⊖ means to have less thread amount while sewing.

### 5-3. Replace 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.



- 1) Please use the needle DC × 27 or the equivalents.
- 2) Loosen the screw ❶ and take off the needle.
- 3) Fully insert the new needle into the needle clamp hole with the needle recess facing backwards as viewed from the operator's side.
- 4) Tighten the screw ❶.

## 5-4. Adjusting the stitch length

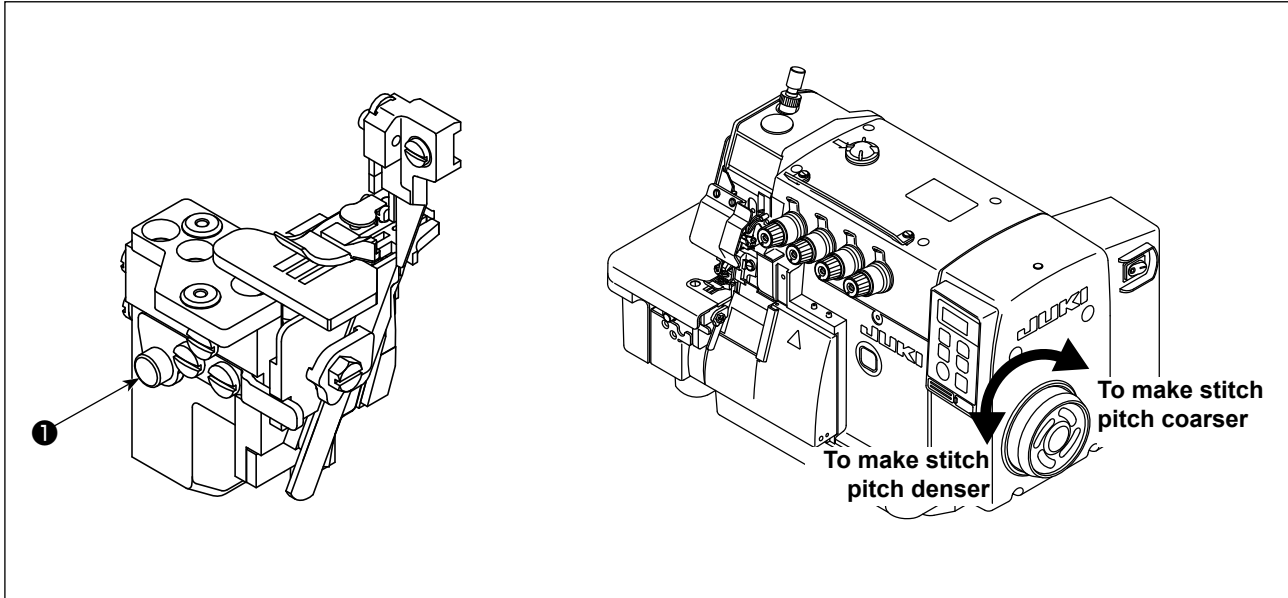


### WARNING :

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.

Change the stitch length appropriately according to the material to be used, differential feed ratio or other relevant factors.

Keep pressing the button ❶ and turn the pulley till the button is locked. Then, release the button after reaching the desired stitch length.

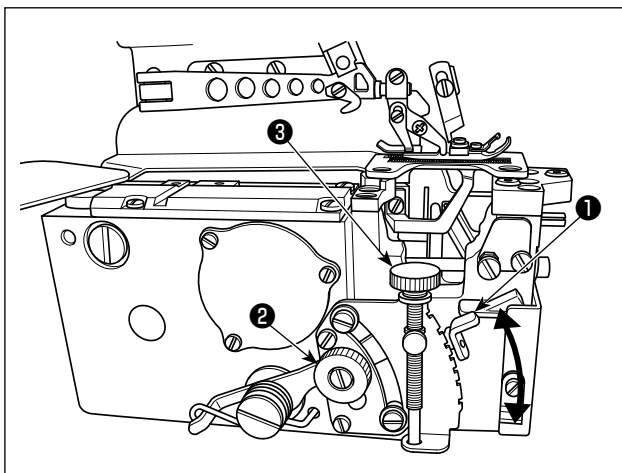


## 5-5. Adjusting the differential feed ratio



### 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.



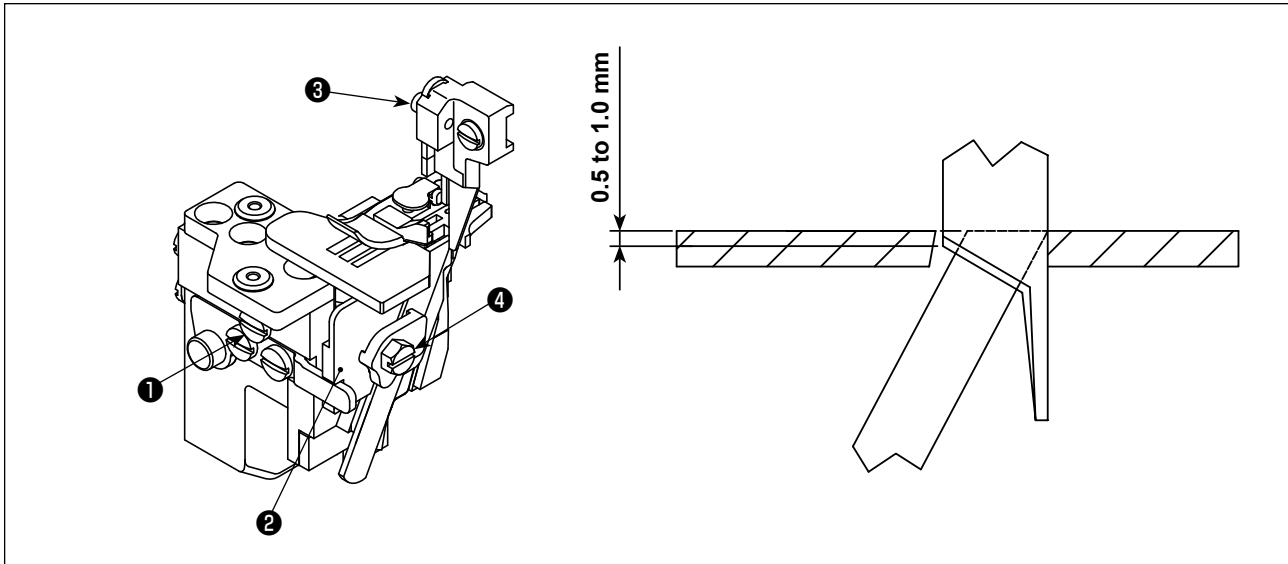
- 1) Loosen differential feed adjusting nut ❷ . Move differential feed adjusting rod ❶ upward to perform stretching sewing, or downward to perform shirring.
- 2) When you want to move the lever ❶ only slightly, use differential feed minute-adjust screw ❸ .
- 3) After the adjustment, securely tighten differential feed adjusting nut ❷ .

## 5-6. Replace the knives



### 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) Replace the upper knife

- 1) Loosen the screw ❶ and move the lower knife holder ❷ to the left. Then, tighten the screw ❶ a little.
- 2) Remove the screw ❸ and put the new upper knife. Then, tighten the screw ❸ a little.
- 3) Turn the pulley to move the upper knife to the lower dead point. Adjust the height of the upper knife so that the upper knife can cross the lower knife about 0.5 to 1.0 mm. After that, tighten the screw ❸.
- 4) Loosen the screw ❶ and return the lower knife holder ❷ to its original position.  
Test if the upper and the lower knife can cut the thread exactly, and then tighten the screw ❶.

### (2) Replace the lower knife

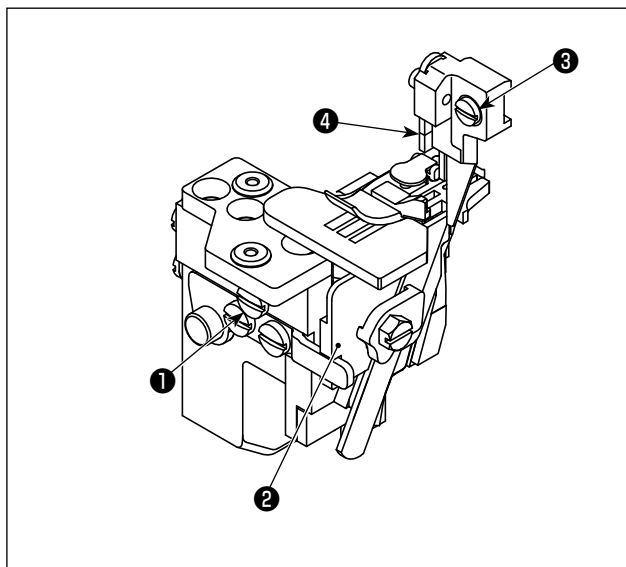
- 1) Loosen the screw ❶ and move the lower knife holder ❷ to the left. Then, tighten the screw ❶ a little.
- 2) Loosen the screw ❹. Take off the lower knife and replace a new one.
- 3) Adjust the edge of the lower knife to be aligned with the surface of the throat plate. Then, tighten the screw ❹.
- 4) Loosen the screw ❶ to return the lower knife holder ❷ to its original position and test if the upper and the lower knife can cut the thread exactly. Then, tighten the screw ❶.

## 5-7. Adjusting the overedge width



### 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.



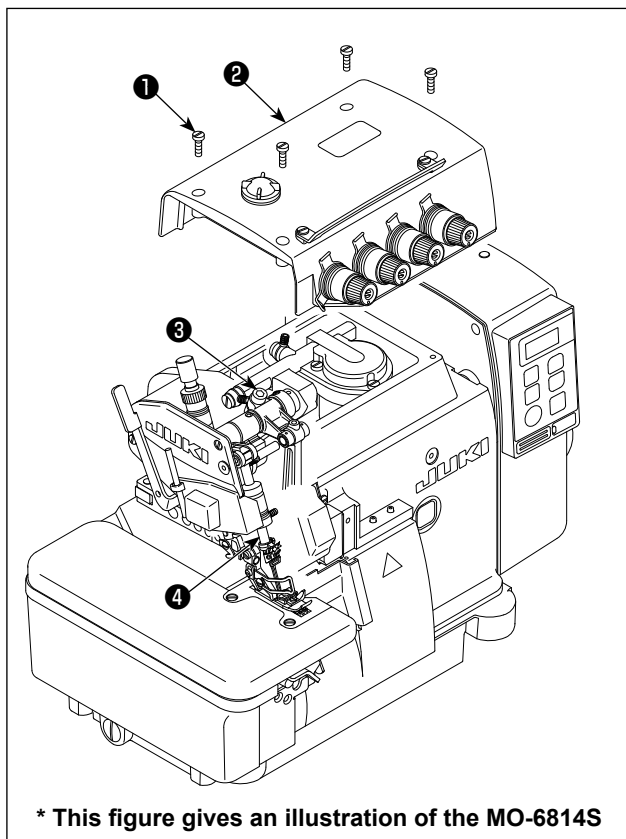
- 1) Turn the pulley to move the upper knife **4** to the lower dead point.
- 2) Loosen the screw **1** and move the lower knife holder **2** to the left, and then tighten the screw **1** a little.
- 3) Loosen the screw **3**, and move the upper knife holder left or right till reaching the desired width. Then, tighten the screw **3**.
- 4) Loosen screw **1**. Move the lower knife holder **2** until the lower knife comes in contact with the upper knife.  
Test if the knives can cut the thread, and then tighten the screw **1**.

## 5-8. Adjusting the needle height



### 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.



Turn the pulley to bring the needle to its upper end. At this time, adjust the distance from the needle tip to the top surface of the throat plate appropriately.

- 1) Loosen four screws **1**. Open top cover **2** and detach it.
- 2) Loosen the screw **3**, and move the needle bar **4** to the desired height. Then, tighten the screw **3**.
- 3) Close top cover **2**. Tighten four screws **1**.



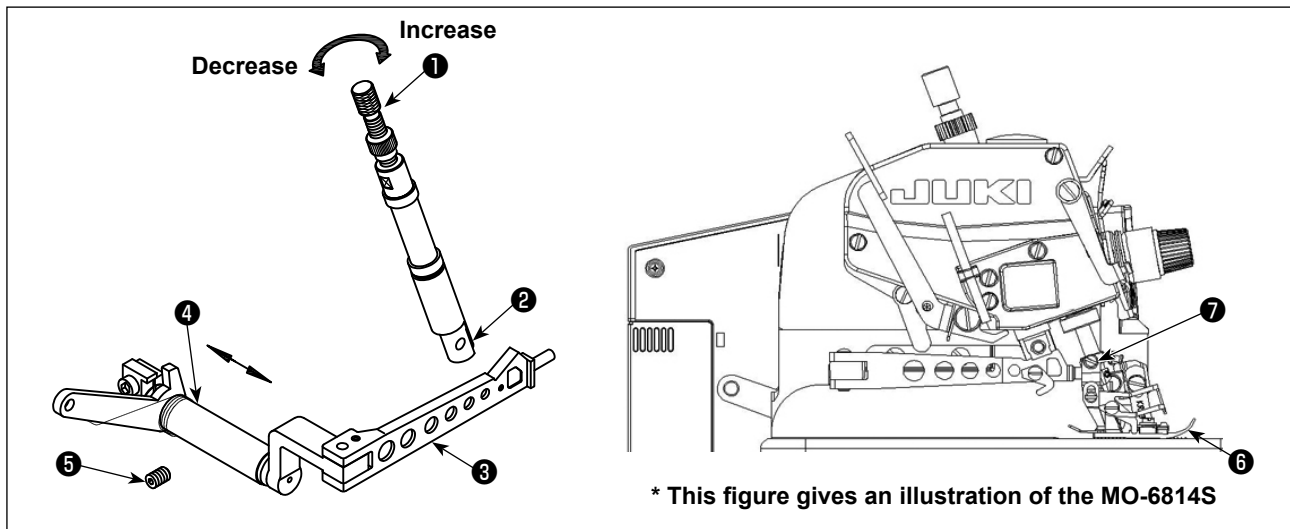
**After the adjustment of the needle bar height, check the relation between the needle and the looper.**



**Refer to "8-1. Dimensions use to adjusting the looper and the needle guard" p.38 for the adjustment values of the needle height.**

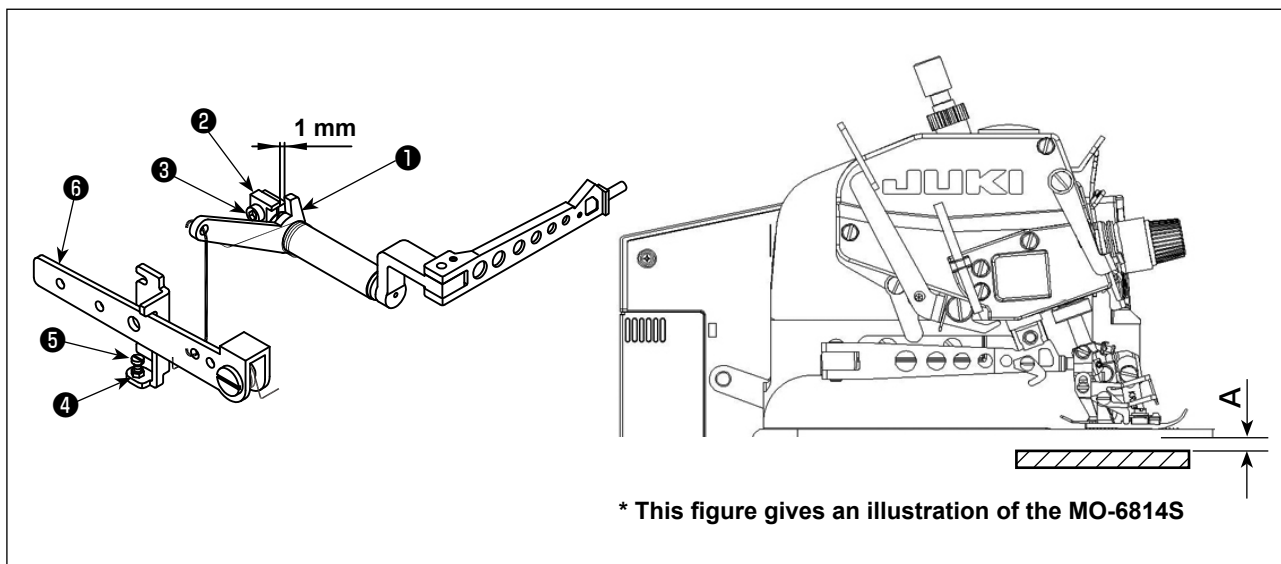
## 5-9. Adjusting the presser foot

### (1) Adjusting the presser foot position



- 1) Loosen adjusting screw ❶ and screw ❷ of the presser foot.
- 2) Move the presser foot ❸ so that the groove of the presser foot can align with the groove of the throat plate. Also the bottom of the presser foot can stand on the throat plate flatly and then tighten the screw ❷.
- 3) Loosen the screw ❺ and move ❹ left and right so that ❸ can match ❷ and ❷ can move upward and downward smoothly. Then, tighten the screw ❺.
- 4) To adjust to a proper pressure: turn the screw ❶ clockwise will increase the pressure, whereas turn it counter clockwise will decrease the pressure.

## (2) Adjusting the lift amount of the presser foot



- 1) Turn the pulley to lower the feed dog until the bottom of the presser horizontally comes in contact with the throat plate.
- 2) Provide a 1 mm clearance between presser foot lifting arm ① and fixing bracket ② . This clearance can be adjusted by slightly loosening screw ③ .
- 3) Loosen nut ④ . Press presser foot lifting lever ⑥ to lift the presser foot from the throat plate surface. The lift of the presser foot differs with the model. Adjust the lift of the presser foot according to the model referring to the table shown below.

Then, adjust screw ⑤ so that it comes in contact with presser foot lifting lever ⑥ . Tighten nut ④ .

- 4) After all the adjustments above, please tighten the screw ③ .

(Unit : mm)

| Model         | Lift amount of the presser foot (A) |
|---------------|-------------------------------------|
| MO-6804       | 6                                   |
| MO-6814-2 △ H | 5.5                                 |
| MO-6814-3 △ H | 5.5                                 |
| MO-6814-4 △ H | 7                                   |
| MO-6814-30P   | 5                                   |
| MO-6816-3 △ H | 5.5                                 |
| MO-6816-50H   | 6.5                                 |
| MO-6816-60H   | 7                                   |
| MO-6816-30P   | 5                                   |

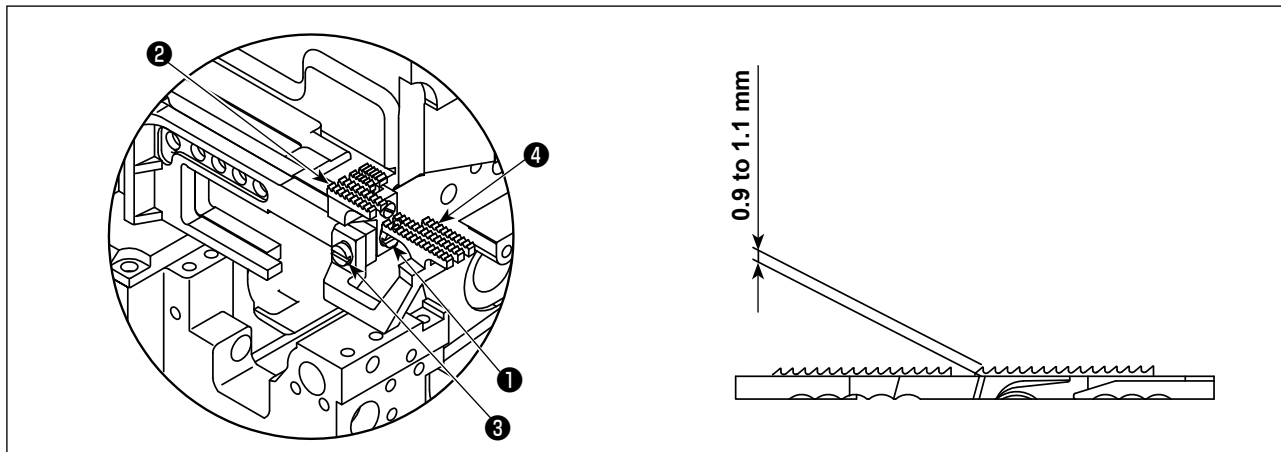
## 5-10. Adjusting the feed dog



### WARNING :

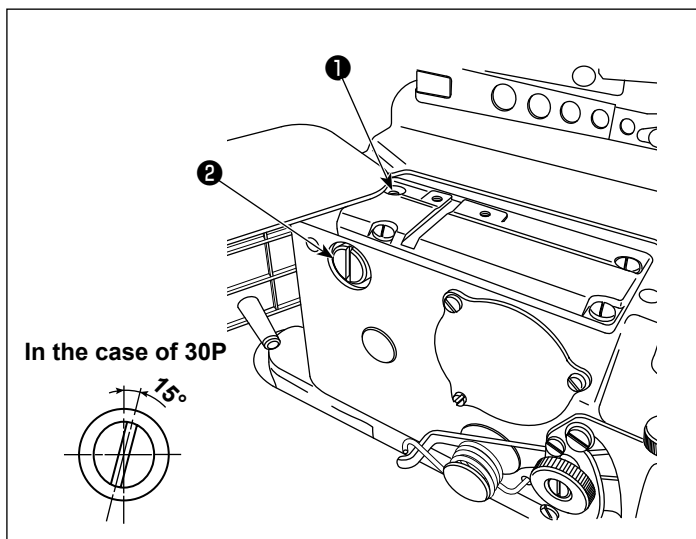
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

### (1) Adjusting the feed dog height



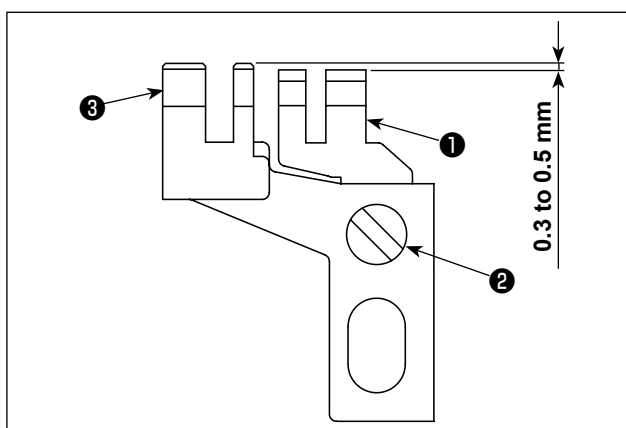
- 1) Turn the pulley to rise the feed dog the highest point.
- 2) Loosen the screw ❶ . and move the main feed dog ❷ up and down in order to keep the teeth side over the throat plate about 0.9 to 1.1 mm (30P: 0.7 to 0.9 mm, 60H: 1.0 to 1.2 mm). Then, tighten the screw ❶ .
- 3) Loosen screw ❸ . Move differential feed dog ❹ up and down to adjust so that it is flush with main feed dog ❷ . Then, tighten screw ❸ .

### (2) Adjusting the inclination of the feed dog



To adjust the inclination of the feed dog, loosen screw ❶ and turn rear support shaft ❷ . When the feed dog is flush with the top surface of the throat plate and the feed dog is levelled (30P: The feed dog is positioned with its front part low), tighten screw ❶ .

### (3) Adjusting the auxiliary feed dog height



The teeth section of auxiliary feed dog ❶ has to be positioned lower than main feed dog ❸ by 0.3 to 0.5 mm (30P: 0.1 to 0.3 mm, 60H: 0.25 to 0.35 mm). The height can be adjusted by loosening the screw ❷ .

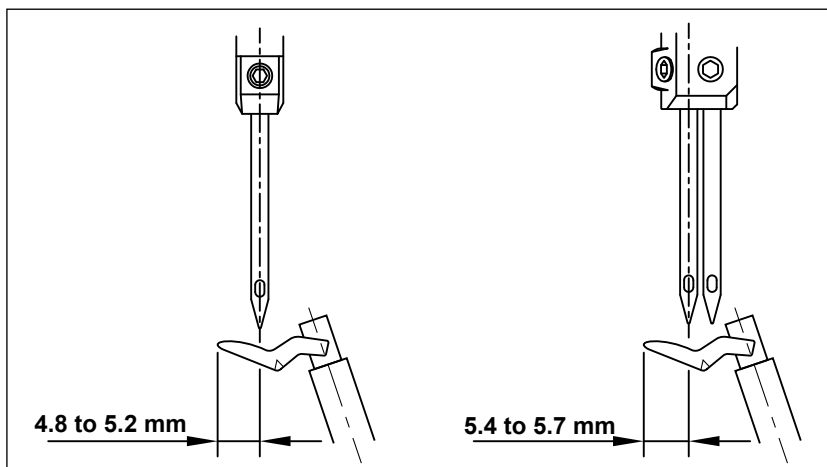
## 5-11. The relationship between the needle and the looper



### WARNING :

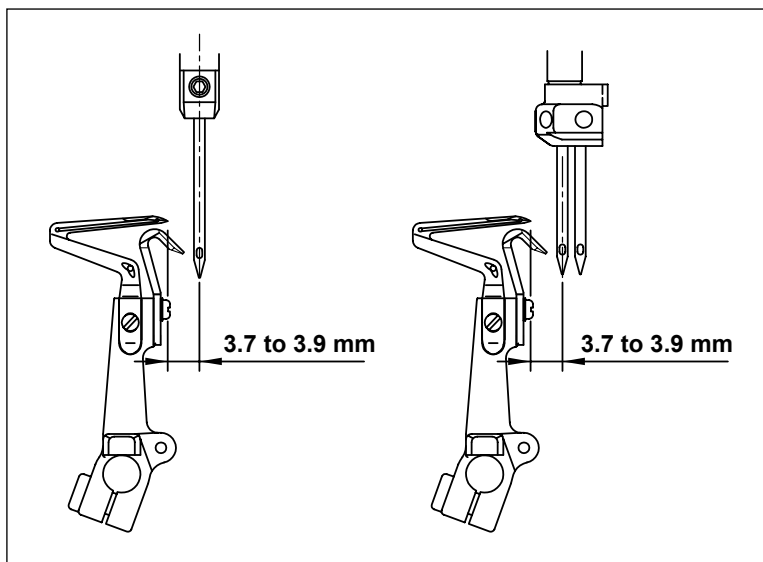
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

### (1) The relationship between the needle and the upper looper

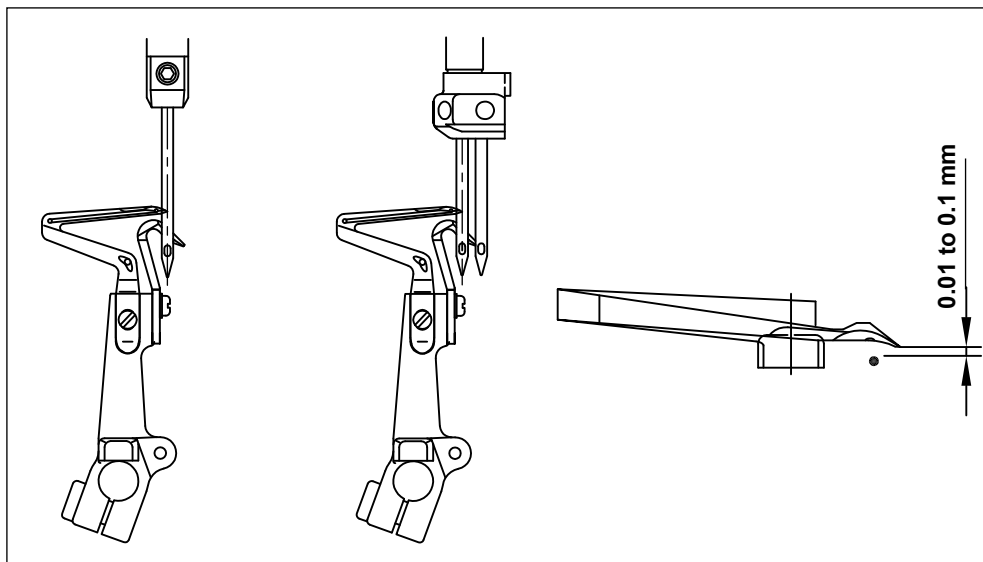


When the upper looper moves to the leftmost point, the distance from the looper tip to the center line of the needle is 4.8 to 5.2 mm. For 2-needle model, the distance from the looper tip to the center line of the left needle is 5.4 to 5.7 mm (60H: 5.0 to 5.5 mm).

### (2) The relationship between the needle and the lower looper



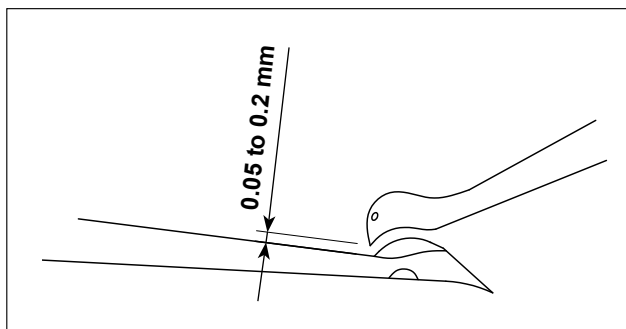
1) When the lower looper moves to the leftmost point, the distance between the looper tip and the center line of the needle should be about 3.7 to 3.9 mm (40H, 44H, 50H and 60H : 4.1 to 4.3 mm). For 2-needle model, the distance is from the lower looper tip to the center line of the left needle.



2) Adjust the distance from the looper tip to the scarf of the needle to 0.01 to 0.1 mm when the lower looper moves to the right toward the center line of the needle (for the 2-needle models, the left needle is used as the reference).



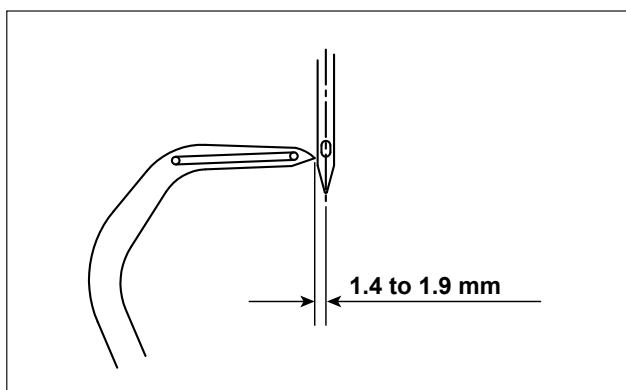
### (3) The relationship between the upper looper and the lower looper



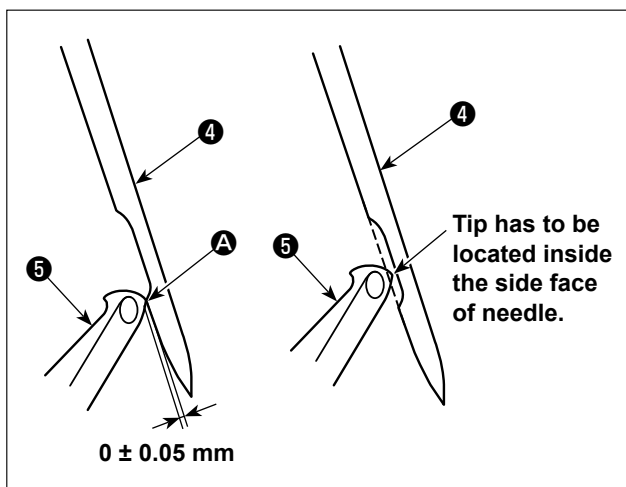
When the upper and the lower loopers cross, keep them as close as possible.

Somehow, the loopers shall not either touch nor collide to each other. The clearance of 0.05 to 0.2 mm should be provided between the upper and lower loopers when they are crossing.

### (4) The relationship between the needle and the double chainstitch looper



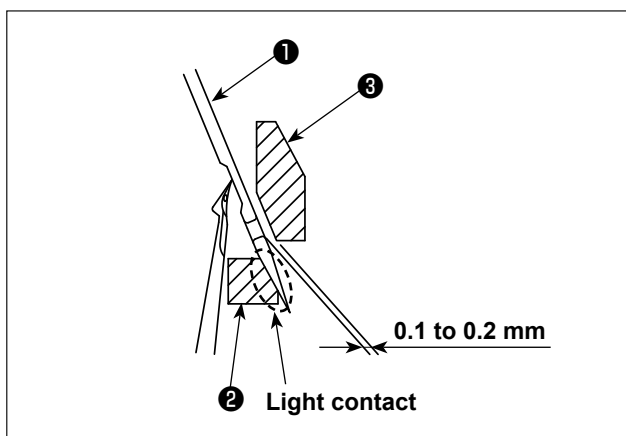
When the double chainstitch looper moves to reach its leftmost position, the distance from the double chainstitch looper to the center line of the needle should be 1.4 to 1.9 mm (50H, 60H: 1.6 to 2.3 mm).



Adjust so that the clearance of  $0 \pm 0.05$  mm is provided between crest **A** of the lower end of scarf of double chainstitch needle **4** and double chainstitch looper **5**.

At this time, the tip of double chainstitch looper **5** should be located inside the side face of double chainstitch needle **4**.

### (5) The relationship between the needle and the needle guard



Adjust so that movable needle guard **2** comes in light contact with the needle when overlock needle **1** (left needle for the 2-needle model) is brought to its lower end position.

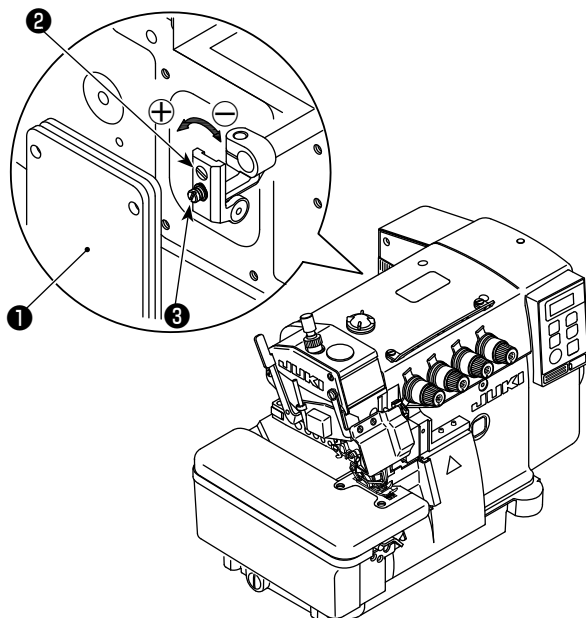
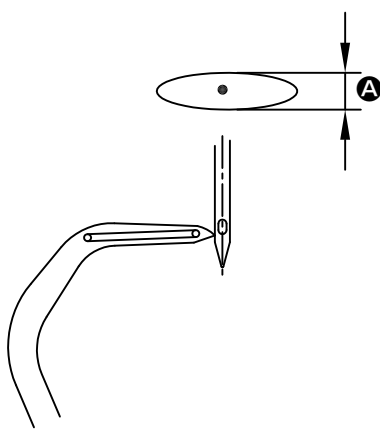
Adjust so that the distance from needle **1** to front needle guard **3** to 0.1 to 0.2 mm.

## 5-12. Adjusting the amount of travel of the double chainstitch looper



### 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.



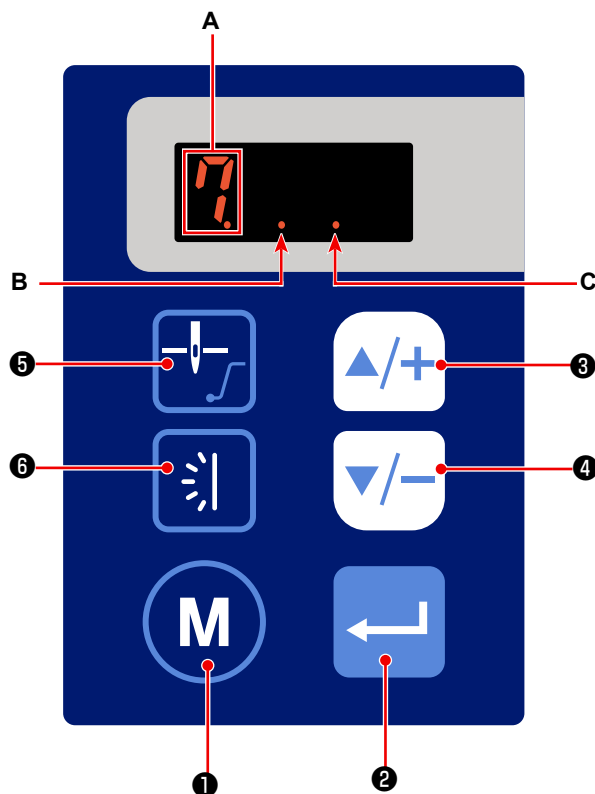
\* This figure gives an illustration of the MO-6814S







The double chainstitch looper makes elliptic movement. Adjust the amount of front/rear travel **A** of the double chainstitch looper following the steps of procedure described below where necessary.

- 1) Open rear cover **1** of the sewing machine.
- 2) Loosen the screw **3** slightly.
- 3) Turn the screw **2** to adjust.  
To increase the amount of travel, turn to  $\oplus$  direction.  
To decrease the amount of travel, turn to  $\ominus$  direction.
- 4) Tighten the screw **3** after the adjustment.
- 5) At the end of the adjustment, close rear cover **1**.

## 6. OPERATION PROCEDURE

### 6-1. Operation panel



| No. |   | How to press the button | Function  |
|-----|---|-------------------------|---|
| ①   |  | Short time              | This button is used for changing over the current mode to the function setting mode.  |
| ②   |  | Short time              | This button is used for confirming the settings you have changed.   |
| ③   |  | Short time              | This button is used for increasing the current numerical value on the function setting screen.  |
|     |   | Long time               | Continuous input is enabled   |
| ④   |  | Short time              | This button is used for decreasing the current numerical value on the function setting screen.  |
|     |   | Long time               | Continuous input is enabled   |
| ⑤   |  | Short time              | This button is used for changing over the position of the needle bar between the upper and lower positions when the sewing machine stops.<br>Dot B lights up: The needle bar stops at its upper position; Dot B goes out: The needle bar stops at its lower position. |
|     |   | Long time               | Keeping this button held pressed changes over the enable / disable of the soft-start function.<br>Dot C lights up: Enabled / goes out: Disabled   |
| ⑥   |  | Short time              | This button is used for changing the brightness of the hand illumination LED.<br>Refer to <b>"6-7. Hand LED light" p.35.</b>  |
|     |   | Long time               | Keeping this button held pressed changes over the color of the hand illumination LED between the incandescent light color and the light bulb color.<br>Refer to <b>"6-7. Hand LED light" p.35.</b>  |
|     | A   |                         | This LED repeats ON and OFF in sequence to indicate that the sewing machine is in operation.  |

## 6-2. Font comparison table

Arabic figures:

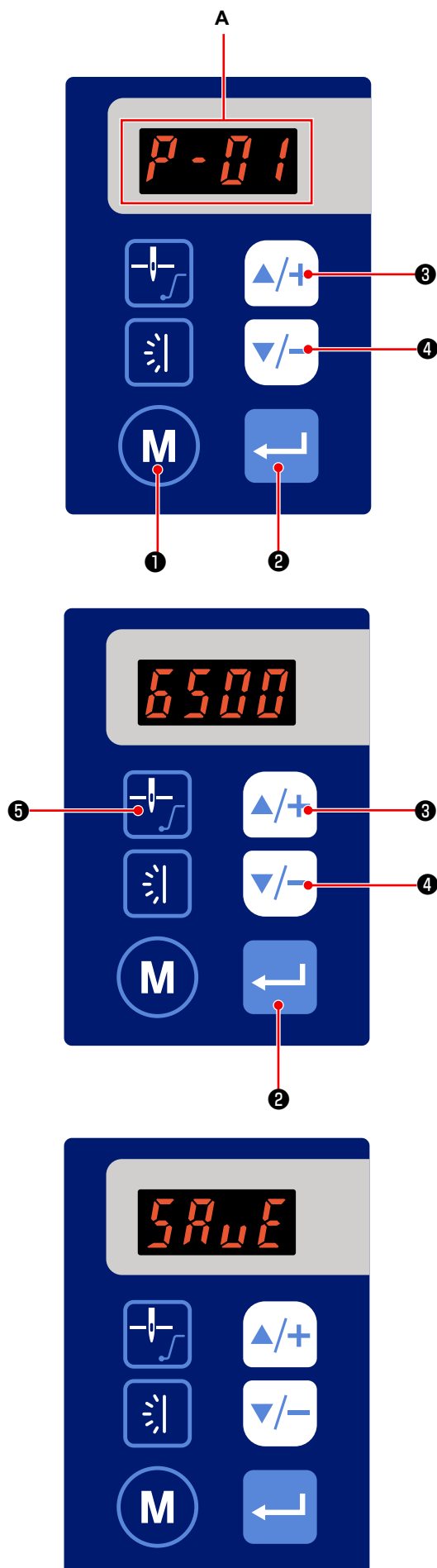
|                        |   |   |   |   |   |   |   |   |   |   |
|------------------------|---|---|---|---|---|---|---|---|---|---|
| Actual shape of figure | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| Display                | ٠ | ١ | ٢ | ٣ | ٤ | ٥ | ٦ | ٧ | ٨ | ٩ |

Arabic figures:

|                        |   |   |   |   |    |   |   |   |   |   |   |   |   |
|------------------------|---|---|---|---|----|---|---|---|---|---|---|---|---|
| Actual shape of figure | A | B | C | D | E  | F | G | H | I | J | K | L | M |
| Display                | ا | ب | ج | د | هـ | ف | غ | ح | ز | ح | ك | ل | م |
| Actual shape of figure | N | O | P | Q | R  | S | T | U | V | W | X | Y | Z |
| Display                | ن | و | پ | ق | ر  | س | ت | ث | د | ذ | ز | ح | ط |

## 6-3. Function setting

Functions can be selected and set as described below.



- 1) Press **M** ①.

The display on the display section A is changed over to display the Function setting No. (P- \* \*).

(The display item that has been previously changed is displayed unless you have turned the power OFF after you changed the setting last time. )

\* If the display on the screen fails to change, carry out the operation procedure 1) again.

**Be sure to re-turn ON the power switch after 10 seconds or more have passed after you turned OFF the power switch. If you re-turn ON the power switch immediately after you have turned it OFF, the sewing machine may fail to operate normally. In such a case, be sure to re-turn ON the power switch. Functions can be selected and set as described below.**

- 2) When you want to change the function setting number, change it by pressing

▲/+ ③ and ▼/- ④.

- 3) When you press ← ② after you have changed the function setting number, the set value of the relevant function setting number is displayed.

- 4) Change the set value by pressing ▲/+ ③ and ▼/- ④.

- 5) Confirm the set value by pressing ← ②.

\* If you have changed the set value during sewing, there is a parameter that enable the set value when you depress the back part of the pedal.

- 6) If you keep **←** ⑤ held pressed without confirming the set value in step 5), only the set value that is currently selected can be saved to memory. While the set value is being saved, the word "SAVE" is displayed on the screen.

After the set value has been saved, the screen returns to the normal sewing screen.

Refer to **"6-6. Initialization of the function setting data" p.34** for how to initialize the function setting data.

## 6-4. Function setting table

| No  | Item  | Description   | Range    | Initial value |               |                     |
|-----|---|---|----------|---------------|---------------|---------------------|
| P01 | Maximum sewing speed  | The maximum sewing speed is limited with the function setting number P41.<br>(It can be set under the Service Level mode.)<br>Refer to "■ Model selection table" p.31 for the model selection (0: General 1: High lift 2: Extra-high lift).   | 200-P41  | 0 : General   | 1 : High lift | 2 : Extra-high lift |
|     |   |   |          | 6500          | 6000          | 5500                |
| P02 | Stop position selection   | This function setting number is used for setting the needle stop position.<br>(0: The needle stops at its upper position<br>1: The needle stops at its lower position<br>2: The needle stop position is not specified)<br>If you select "6: Intermittent suction (controlled with the number of stitches)" for the function setting number "P17 Pedal control suction 1 type" or "P22 Pedal control suction 2 type", it will not be allowed to select "2: The needle stop position is not specified" for this function setting number P02.              | 0-2      | 0             |               |                     |
| P03 | Soft start ON / OFF   | This function setting number is used for setting ON / OFF of the soft-start function.<br>(0: OFF 1: ON)   | 0-1      | 0             |               |                     |
| P04 | Soft-start sewing speed   | This function setting number is used for setting the soft-start sewing speed at the beginning of sewing.  | 200-1500 | 400           |               |                     |
| P05 | Number of soft-start stitches   | This function setting number is used for setting the number of stitches to be sewn with the soft-start function at the beginning of sewing.   | 1-15     | 2             |               |                     |
| P06 | Minimum number of revolutions   | This function setting number is used for setting the minimum value of the number of revolutions.  | 200-500  | 200           |               |                     |
| P12 | Number of times of manual thread trimming                             | In the case the manual switch is connected to the sewing machine, this function setting number is used for setting the number of times of thread trimming carried out when the switch is manually pressed.  | 1-5      | 1             |               |                     |
| P13 | Interval of time between continuous manual thread trimming operations | In the case the number of times of manual thread trimming set for "P12" is "2 or more", the interval of time between two consecutive thread trimming operations set for this function setting number "P13" is to be used.   | 30-990   | 50            |               |                     |
| P15 | Presser-foot lifting protection time                                  | This function setting number is used for setting the ON time during which the presser foot is held lifted.  | 0-60     | 5             |               |                     |
| P16 | Presser foot lifting switch   | This function setting number is used for setting ON / OFF of the presser foot lifting operation when the back part of the pedal is depressed.<br>1: The presser foot lifting operation is carried out.<br>0: The presser foot lifting operation is not carried out.   | 0-1      | 1             |               |                     |
| P17 | Pedal control suction 1   | This function setting number is used for selecting the operation of the device connected to the suction 1.<br>0: OFF<br>1: Front suction; 2: Rear suction<br>3: Front and rear suction; 4: Long suction;<br>5: Intermittent suction (controlled by time);<br>6: Intermittent suction (controlled by the number of stitches)<br>In the case "2: The needle stop position is not specified" is selected for "P02 Stop position selection", "6: Intermittent suction (controlled by the number of stitches)" cannot be selected for this function setting. | 0-6      | 1             |               |                     |
| P18 | Front suction operating time for pedal control suction 1              | In the case "1" or "3" is selected for "P17", the suction 1 is kept in the operating state for the period of time set for this function setting number "P18" when the front part of the pedal is depressed to start sewing. Unit [ms]   | 0-5000   | 300           |               |                     |
| P19 | Rear suction operating time for pedal control suction 1               | In the case "2" or "3" is selected for "P17", the suction 1 is kept in the operating state for the period of time set for this function setting number "P19" when the back part of the pedal is strongly depressed. Unit [ms]   | 0-5000   | 300           |               |                     |
| P20 | Intermittent suction operating time for pedal control suction 1       | In the case "5" is selected for "P17", the suction 1 is kept in the operating state for the period of time set for this function setting number "P20" when the sewing machine carries out sewing. The suction 1 carries out operation and non-operation of suction alternately in repetition. Unit [ms]   | 0-9000   | 200           |               |                     |

| No  | Item  | Description   | Range  | Initial value |
|-----|---|---|--------|---------------|
| P21 | Intermittent suction non-operation time for pedal control suction 1 | In the case "5" is selected for "P17", the suction 1 is held in the stopped state for the period of time set for this function setting number "P21" when the sewing machine carries out sewing. The suction 1 carries out operation and non-operation of suction alternately in repetition.<br>In the case this function setting number is set to "0", the sewing machine will carry out the same operation as it carries out when the function setting number "P17" is set to "4: Long suction" regardless of the set value of the function setting number "P20".<br>Unit [ms]                       | 0-9000 | 200           |
| P22 | Pedal control suction 2   | This function setting number is used for selecting the operation of the device connected to the suction 2.<br>0: OFF<br>1: Front suction;<br>2: Rear suction;<br>3: Front and rear suction;<br>4: Long suction;<br>5: Intermittent suction (controlled by time);<br>6: Intermittent suction (controlled by the number of stitches)<br>In the case "2: The needle stop position is not specified" is selected for the function setting number "P02 Stop position selection", "6: Intermittent suction (controlled by the number of stitches" cannot be selected for this function setting number P22." | 0-6    | 1             |
| P23 | Front suction operating time for pedal control suction 2            | In the case "1" or "3" is selected for "P22", the suction 2 is kept in the operating state for the period of time set for this function setting number "P23" when the front part of the pedal is depressed to start sewing. Unit [ms]   | 0-5000 | 300           |
| P24 | Rear suction operating time for pedal control suction 2             | In the case "2" or "3" is selected for "P22", the suction 2 is kept in the operating state for the period of time set for this function setting number "P24" when the back part of the pedal is strongly depressed. Unit [ms]   | 0-5000 | 300           |
| P25 | Intermittent suction operating time for pedal control suction 2     | In the case "5" is selected for "P22", the suction 2 is kept in the operating state for the period of time set for this function setting number "P25" when the sewing machine carries out sewing. The suction 2 carries out operation and non-operation of suction alternately in repetition. Unit [ms]   | 0-9000 | 200           |
| P26 | Intermittent suction non-operation time for pedal control suction 2 | In the case "5" is selected for "P22", the suction 2 is held in the stopped state for the period of time set for this function setting number "P26" when the sewing machine carries out sewing. The suction 2 carries out operation and non-operation of suction alternately in repetition.<br>In the case this function setting number is set to "0", the sewing machine will carry out the same operation as it carries out when the function setting number "P22" is set to "4: Long suction" regardless of the set value of the function setting number "P25".<br>Unit [ms]                       | 0-9000 | 200           |
| P27 | Manual thread trimming time   | In the case the manual switch is connected to the sewing machine, this function setting number is used for setting the time to carry out thread trimming when the manual switch is pressed. Unit [ms]"  | 0-990  | 40            |
| P28 | Manual thread trimming suction                                      | "In the case the manual switch is connected to the sewing machine, this function setting number is used for selecting the operation of the device connected to the suction 1 and suction 2 when the manual switch is pressed.<br>0: OFF;<br>1: Manual suction 1 ON;<br>2: Manual suction 2 ON;<br>3: Manual suction 1 and manual suction 2 ON"  | 0-3    | 3             |
| P29 | Manual suction 1 Operating time                                     | In the case the manual switch is connected to the sewing machine and "1" or "3" is selected for "P28", the suction 1 is kept in the operating state for the period of time set for this function setting number "P29" when the manual switch is pressed. Unit [ms]"   | 0-5000 | 300           |
| P30 | Manual suction 2 Operating time                                     | In the case the manual switch is connected to the sewing machine and "2" or "3" is selected for "28", the suction 2 is kept in the operating state for the period of time set for this function setting number "P30" when the manual switch is pressed.<br>Unit [ms]"   | 0-5000 | 300           |

| No  | Item   | Description   | Range  | Initial value |
|-----|--|---|--------|---------------|
| P31 | Number of stitches for keeping the intermittent suction in the operating state for pedal control suction 1 | In the case "6" is selected for "P17", the suction 1 is kept in the operating state for the number of stitches set for this function setting number "P31" during sewing. The suction 1 carries out operation and non-operation of suction alternately in repetition.  | 0-200  | 50            |
| P32 | Number of stitches for keeping the intermittent suction in the stopped state for pedal control suction 1   | In the case "6" is selected for "P17", the suction 1 is kept in the stopped state for the number of stitches set for this function setting number "P32". The suction 1 carries out operation and non-operation of suction alternately in repetition.<br>In the case this function setting number is set to "0", the sewing machine will carry out the same operation as it carries out when the function setting number "P17" is set to "4: Long suction" regardless of the set value of the function setting number "P31". | 0-200  | 50            |
| P33 | Number of stitches for keeping the intermittent suction in the operating state for pedal control suction 2 | In the case "6" is selected for "P22", the suction 2 is kept in the operating state for the number of stitches set for this function setting number "P33" during sewing. The suction 2 carries out operation and non-operation of suction alternately in repetition.  | 0-200  | 50            |
| P34 | Number of stitches for keeping the intermittent suction in the stopped state for pedal control suction 2   | In the case "6" is selected for "P22", the suction 2 is kept in the stopped state for the number of stitches set for this function setting number "34". The suction 2 carries out operation and non-operation of suction alternately in repetition.<br>In the case this function setting number is set to "0", the sewing machine will carry out the same operation as it carries out when the function setting number "P22" is set to "4: Long suction" regardless of the set value of the function setting number "P33".  | 0-200  | 50            |
| P35 | Number of pieces   | This function setting number is used for counting the number of pieces produced.  | 0-9999 | 0             |
| P36 | Number of times of thread trimming for sewing one piece of product   | This function setting number is used for setting the number of times of thread trimming to be carried out before adding one to the current number of counts of "P35".   | 1-50   | 10            |
| P40 | N1-N2  | N1: Electrical box software version;<br>N2: Operation panel software version  |        |               |



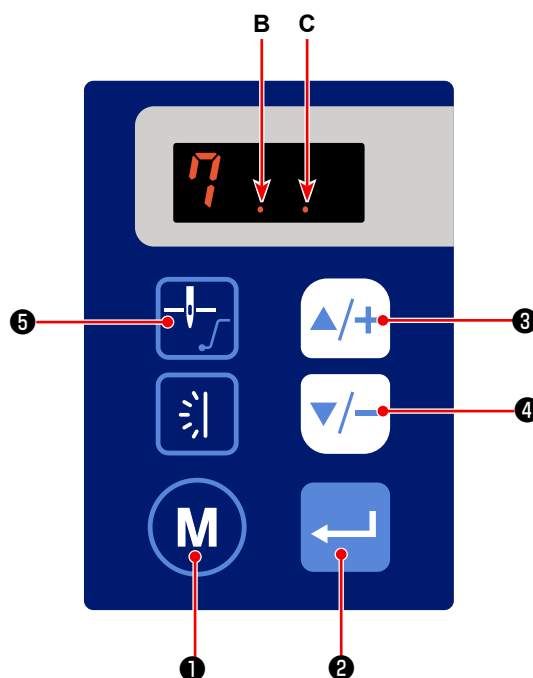
■ **Model selection table**

| No. | Model name                    | Model selection (P54) |   | Maximum number of revolutions setting (P41) | Maximum sewing speed (P01) initial value |
|-----|-------------------------------|-----------------------|---|---|--|
| 1   | MO-6804S-0E4-30H              | General               | 0 | 7000  | 6500                                     |
| 2   | MO-6804S-0A4-150              | General               | 0 | 7000  | 6500                                     |
| 3   | MO-6814S-BE6-40H              | High lift             | 1 | 6500  | 6000                                     |
| 4   | MO-6814S-BE6-24H/<br>G44/Q143 | General               | 0 | 7000  | 6500                                     |
| 5   | MO-6814S-BE6-34H/<br>G44/Q143 | General               | 0 | 7000  | 6500                                     |
| 6   | MO-6814S-BE6-44H/<br>G44/Q143 | High lift             | 1 | 6500  | 6000                                     |
| 7   | MO-6816S-DE6-30H              | General               | 0 | 7000  | 6500                                     |
| 8   | MO-6816S-FF6-30H              | General               | 0 | 7000  | 6500                                     |
| 9   | MO-6816S-FF6-50H              | High lift             | 1 | 6500  | 6000                                     |
| 10  | MO-6816S-FH6-60H              | Extra-high lift       | 2 | 6000  | 5500                                     |
| 11  | MO-6816S-DE4-30H-E35          | General               | 0 | 7000  | 6500                                     |
| 12  | MO-6843S-1D6-40H              | General               | 0 | 7000  | 6500                                     |
| 13  | MO-6804D-0E4-30H              | General               | 0 | 7000  | 6500                                     |
| 14  | MO-6814D-BE6-30P              | General               | 0 | 7000  | 6500                                     |
| 15  | MO-6814D-BE6-30P              | General               | 0 | 7000  | 6500                                     |
| 16  | MO-6814D-BE6-24H/<br>G44/Q143 | General               | 0 | 7000  | 6500                                     |
| 17  | MO-6814D-BE6-34H/<br>G44/Q143 | General               | 0 | 7000  | 6500                                     |
| 18  | MO-6816D-DE4-30H              | General               | 0 | 7000  | 6500                                     |
| 19  | MO-6816D-DE4-<br>30H-E35      | General               | 0 | 7000  | 6500                                     |
| 20  | MO-6843D-1D6-40H              | General               | 0 | 7000  | 6500                                     |

\* Model selection (P54) and the maximum number of revolutions setting (P41) are the parameters that can be set under the Service Level mode.

Refer to the Engineer's Manual for details.

## 6-5. Details of setting of the main functions




### ① Stop position setting (Function setting No. P02)

This function setting number is used for setting the stop position of the needle.

- P02      0: The needle stops at its upper position  
           1: The needle stops at its lower position  
           2: The needle stop position is not specified

The needle stop position can also be changed with the relevant button on the operation panel.

The upper stop position and the lower stop position can be selected alternately by pressing  ⑤.

When the display **B** dot lights up, the needle stops at its upper position. When the display **B** dot goes out, the needle stops at its lower position.

- \* In the case the function setting number "P02" is set to "2: The needle stop position is not specified" under the function setting mode, the needle stop position is not specified regardless of ON / OFF of the display **B** dot.
- \* In the case "6: Intermittent suction (controlled by the number of stitches)" is selected for the function setting number "P17 Pedal control suction 1 type" or "P22 Pedal control suction 2 type", "2: The needle stop position is not specified" is not allowed to be selected.


### ② Selection of soft-start function (Function setting No. P03)

- P03      0: Soft start OFF  
           1: Soft start ON

It is also possible to change the speed limit value for the soft start function and the number of stitches to be sewn with the soft start function. (Function setting No. P04 - No. P05)

- P04      Data settable range: 200 - 1500 [sti / min] <100 sti / min>  
           P05      Data settable range: 1 - 15 (stitches)

The soft-start function selection can also be changed with the relevant button on the operation panel.

The soft start OFF and ON can be selected alternately by keeping  ⑤ held pressed.

When the display **C** dot lights up, the soft start ON is selected. When the display **C** dot goes out, the soft start OFF is selected.

③ **Selection of the presser foot lifting function (Function setting No. P16)**

This is the function to select whether the presser foot is lifted or not when the back part of the pedal is depressed.

\* This selection is enabled in the case the presser foot lifting device is connected to the sewing machine.  
(Refer to the Engineer's Manual for the detailed connection method.)

P16      0: The presser foot lifting operation is not carried out.

1: The presser foot lifting operation is carried out.

④ **Selection of the suction function (Function setting No. P17 and No. P22)**

This function setting is enabled when the suction device is connected to the suction 1 or 2.

(Refer to the Engineer's Manual for the detailed connection method of the suction 1 and suction 2.)

For each of the devices connected, the suction function can be separately selected.

P17, P22    0: Suction OFF

1: Front suction

2: Rear suction

3: Front and rear suction

4: Long suction

5: Intermittent suction (controlled by time)

6: Intermittent suction (controlled by the number of stitches)

\* In the case "2: The needle stop position is not specified" is selected for the function setting number "P02 Stop position selection", "6: Intermittent suction (controlled by the number of stitches)" cannot be set.

⑤ **Selection of the manual thread trimming function (Function setting No. P12 and No. P28)**

This selection is enabled in the case the manual switch is connected to the sewing machine.

(Refer to the Engineer's Manual for the detailed connection method of the manual switch.)

The number of times of manual thread trimming can be selected.

P12      Setting range: 1 - 5 times

In addition, the suction function at the time of manual thread trimming can be selected.

P28      0: Suction OFF

1: The device connected to Suction 1 is operated

2: The device connected to Suction 2 is operated

3: Both devices connected to Suction 1 and Suction 2 are operated

(Refer to the Engineer's Manual for the detailed connection method of the suction.)

⑥ **Production number counting function (Function setting No. P35 and P36)**

This is the function to count the number of pieces produced.



P35      Number of pieces: 0 - 9999 pieces

In addition, the number of times of thread trimming to be carried out before adding one to the count number can be set.

P36      Setting range: 1 - 50 times

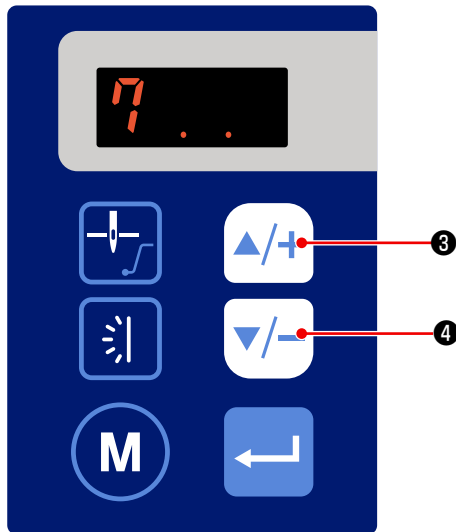
It is possible to carry out the sewing while the number of pieces is displayed.




If you want to reset the number of pieces to "0", keep  ⑤ held pressed. The number of pieces pro-

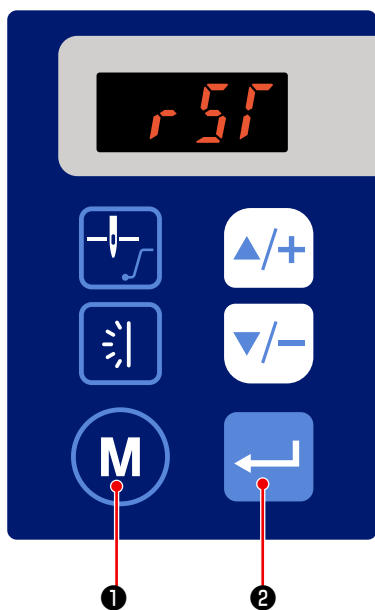
duced can be increased or decreased by pressing  ③ or  ④ .



## 6-6. Initialization of the function setting data



The function setting data you have changed arbitrarily can be stored in memory. If you change the data afterward, it can be returned to the aforementioned data that you have stored in memory.




- 1) The initialization screen is displayed by keeping  ③ held pressed for five seconds in the normal sewing state or by turning ON the power to the sewing machine while pressing  ③ and  ④ simultaneously.



- 2) In the case you have kept  ③ held pressed for a long time to display the initialization screen, all of the set values can be initialized to those you have stored in memory as described in **"6-3. Function setting" p.27** by pressing  ② on the initialization screen.

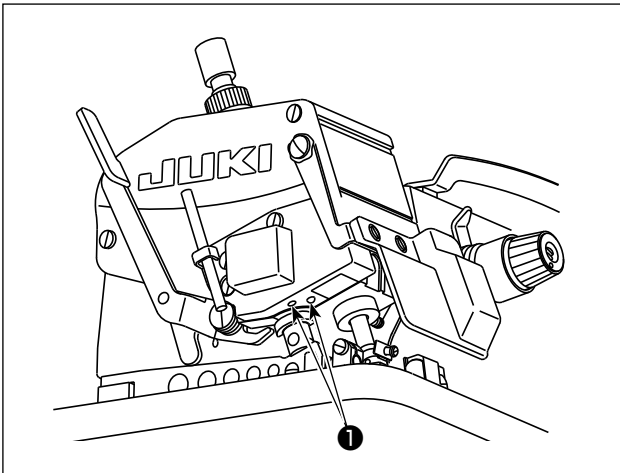
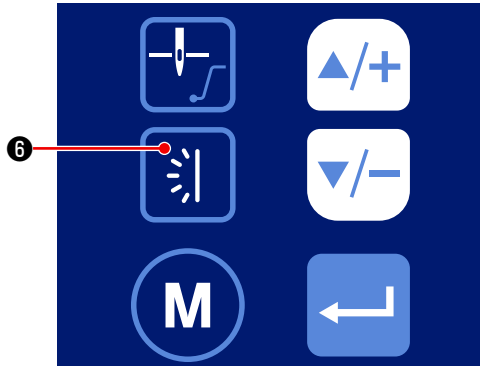
In the case you have turned the power ON by pressing  ③ and  ④ simultaneously, the set values will be reset to the factory-set initial values at the time of shipment. In this case, the set values you have stored in memory as described in **"6-3. Function setting" p.27** will also be initialized to the factory-set values.




Initialization can be cancelled by pressing  ①.



- 3) During the initialization, the full-screen is displayed. After the completion of the initialization, the screen returns to the normal sewing-state screen.

# 6-7. Hand LED light






Brightness of hand LED light ① can be changed by pressing  ⑥ . When you keep  ⑥ held pressed for a long time, the light adjustment function is changed over to the color temperature changing function. In this state, the color temperature can be changed by pressing  ⑥ .

If you wait for three seconds without pressing any button, the color temperature changing function will be automatically returned to the light adjustment function.

Brightness / color temperature changing method is as shown in the tables given below.

(Values [%] in the table only provide reference data that helps clarify the explanation.)

**\* If you want to change the color temperature, change it when you select the light adjustment (dimming) step from five different steps (1 - 5).**

| <div>  <br/>Short time </div> | Color temperature |           |            | <div> <div>  <br/>Long time </div> <div>  <br/>Short time </div> </div> |
|--|-------------------|-----------|------------|---|
|  | Steps             | White [%] | Yellow [%] |   |
|  | 0                 | 100       | 0          |   |
|  | 1                 | 90        | 10         |   |
|  | 2                 | 80        | 20         |   |
|  | 3                 | 70        | 30         |   |
|  | 4                 | 60        | 40         |   |
|  | 5                 | 50        | 50         |   |
|  | 6                 | 40        | 60         |   |
|  | 7                 | 30        | 70         |   |
|  | 8                 | 20        | 80         |   |
|  | 9                 | 10        | 90         |   |
|  | 10                | 0         | 100        |   |

| Light adjustment (Dimming) |               |
|----------------------------|---------------|
| Steps                      | Intensity [%] |
| 0                          | 0             |
| 1                          | 20            |
| 2                          | 40            |
| 3                          | 60            |
| 4                          | 80            |
| 5                          | 100           |

Automatic restoration after waitig for three seconds

## 6-8. About the USB



### WARNING :

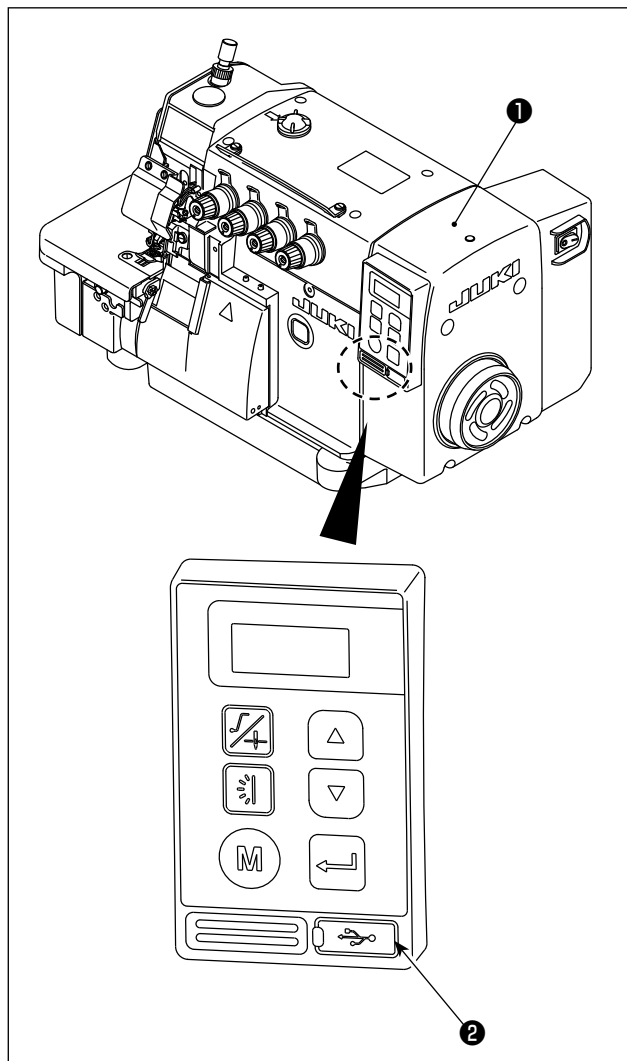
The device to be connected to the USB port should have the rated current value or less as shown below.

If any device rated current value of which is higher than the rated current value, the main body of the sewing machine or the USB device connected can be damaged or malfunction.

Rated current value of the USB port

USB port on the electrical box side: Maximum rated current value of 1 A

### [ Insertion position of the USB thumb drive ]



A USB connector is provided for electrical box ❶ .

To use a USB thumb drive, remove connector cover ❷ and insert the USB thumb drive into the USB connector.

\* In the case a USB thumb drive is not used, the USB connector should be protected with connector cover ❷ without exceptions.

If dust or the like enters the USB connector, a failure can be caused.

## 7. MAINTENANCE

### WARNING :



1. Turn off the power switch before carrying out cleaning. The machine may operate if the treadle is pressed incautiously, which could result in injury.
2. Be sure to wear protective goggles and gloves when handling the lubricating oil and grease so that they do not get into your eyes or onto your skin, otherwise inflammation can be resulted.
3. Furthermore, do not drink or eat the oil nor the grease for they can cause vomiting and diarrhea. Keep the oil away of the reach of children.
4. Use both hands to hold the machine head when tilting or returning it to its original position. If only using one hand to move the machine, the weight of the machine head may cause slipping and you may get hurt.

### (Periodical Maintenance Items)

| Maintenance Cycle      | Maintenance Items  |
|------------------------|--|
| Daily                  | 1. Clean the lint on the feed dog.   |
|                        | 2. Check to be sure that the oil pan is filled with an adequate quantity of oil. (The oil surface level must be kept between the upper and lower red marker lines on the oil gauge.) |
|                        | 3. Keep the sewing machine and the operation table clean at all time.  |
| Weekly                 | 1. Keep the power cords looking clean and neat.  |
|                        | 2. Keep the operational panel clean.   |
|                        | 3. Check if the power parts is loosening or still at the right position.   |
| Once every four months | 1. Change the oil in the oil pan with new oil.   |

## 8. ADJUSTMENT DIMENSION VALUES

### 8-1. Dimensions use to adjusting the looper and the needle guard

#### WARNING :



1. To avoid possible accidents due to unfamiliarity with the machine, get a maintenance man who has a good knowledge of the machine or serviceman of our distributor to adjust the machine or replace any of its parts.
2. To avoid possible personal injury when the machine starts, it has to be ascertained in prior to the actuation of the machine that no screws are loosened and no components come in contact with one another.



The dimensions given in the table are standard ones to be used to adjust the looper. They are intended to be used for reference and should be changed more or less in accordance with the sewing products and thread to be used.

(Unit : mm)

| Model         |           |        |       |        |         |         |         |
|---------------|-----------|--------|-------|--------|---------|---------|---------|
|               | A         | B      | C     | D      | E       | F       | G       |
| MO-6804       | 10.4-10.6 | -      | -     | (10.8) | 4.8-5.2 | 3.7-3.9 | -       |
| MO-6814-2 △ H | 10.4-10.6 | (9.1)  | -     | (10.5) | 5.4-5.7 | 3.7-3.9 | -       |
| MO-6814-3 △ H | 10.4-10.6 | (9.1)  | -     | (10.5) | 5.4-5.7 | 3.7-3.9 | -       |
| MO-6814-4 △ H | 11.8-12   | (10.5) | -     | (12)   | 5.4-5.7 | 4.1-4.3 | -       |
| MO-6814-30P   | 10.4-10.6 | (9.1)  | -     | (10.5) | 5.4-5.7 | 3.7-3.9 | -       |
| MO-6816-3 △ H | 10.4-10.6 | -      | (7.6) | (10.8) | 4.8-5.2 | 3.7-3.9 | 1.4-1.9 |
| MO-6816-50H   | 11.8-12   | -      | (9)   | (12)   | 4.8-5.2 | 4.1-4.3 | 1.6-2.3 |
| MO-6816-60H   | 12.6-12.8 | -      | (9.8) | (12.7) | 5-5.5   | 4.1-4.3 | 1.6-2.3 |
| MO-6816-30P   | 10.4-10.6 | -      | (7.6) | (10.8) | 4.8-5.2 | 3.7-3.9 | 1.4-1.9 |



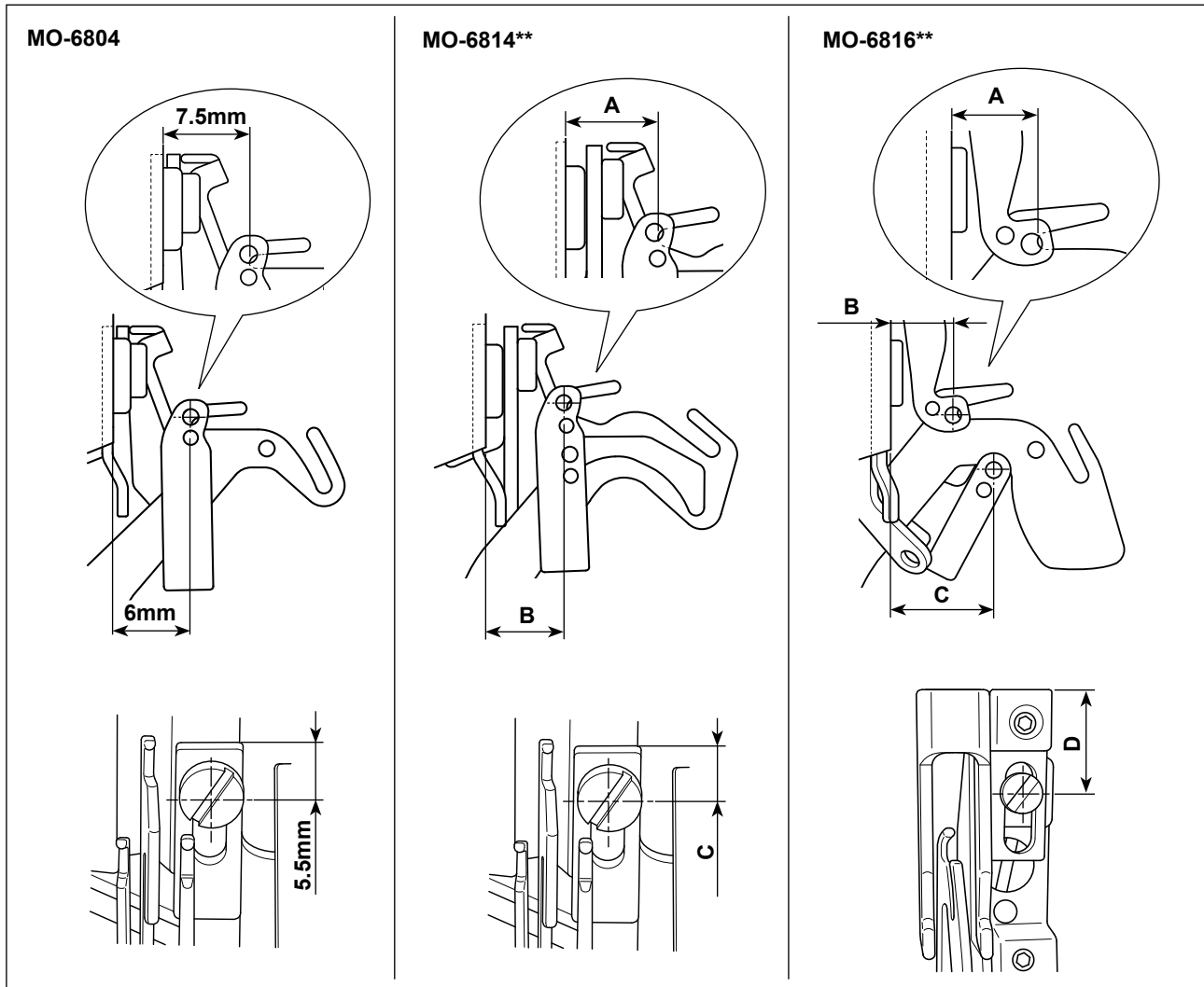
## 8-2. Dimensions related to the position of the thread take-up and the looper thread cam (standard adjustment)



### 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.

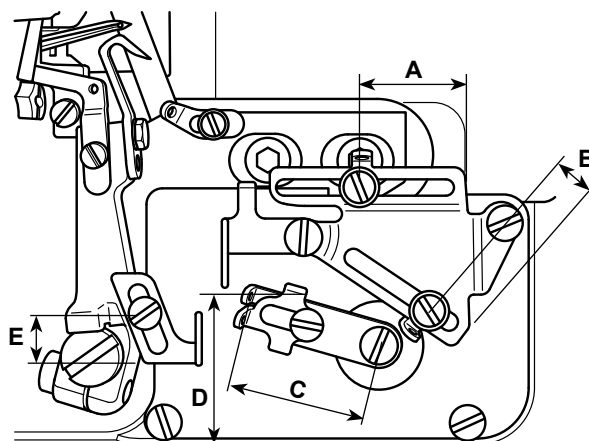
### (1) Position of the needle thread take-up and the needle thread guide



(Unit : mm)

|                    | MO-6814 |   |     | MO-6816 |    |    |    |
|--------------------|---------|---|-----|---------|----|----|----|
|                    | A       | B | C   | A       | B  | C  | D  |
| Excluding 30P, 60H | 6.5     | 6 | 5.5 | 8.5     | 8  | 14 | 12 |
| 30P                | 6.5     | 6 | 5.5 | 11.5    | 11 | 13 | 13 |
| 60H                | -       | - | -   | 7.5     | 8  | 14 | 13 |

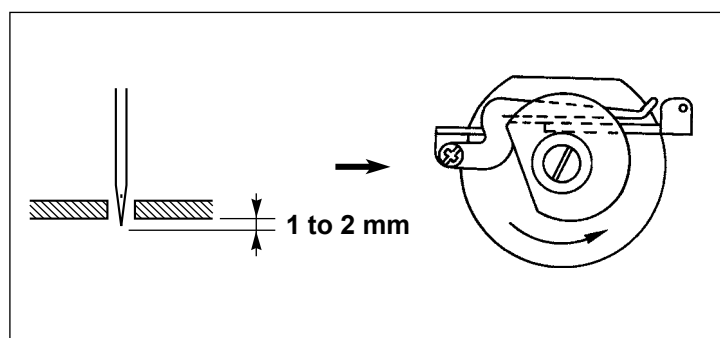
## (2) Position of the looper thread take-up and the looper thread guide



(Unit : mm)

| Model         | A    | B    | C  | D    | E  |
|---------------|------|------|----|------|----|
| MO-6804       | 11.5 | 17.5 | 20 | 28.5 | 11 |
| MO-6814-2 △ H | 21.5 | 14.5 | 28 | 32   | 11 |
| MO-6814-3 △ H | 21.5 | 14.5 | 28 | 32   | 11 |
| MO-6814-4 △ H | 21.5 | 14.5 | 25 | 28.5 | 9  |
| MO-6814-30P   | 11.5 | 17.5 | 20 | 28.5 | 9  |
| MO-6816-3 △ H | 21.5 | 17.5 | 20 | 28.5 | 9  |
| MO-6816-50H   | 33.5 | 10.5 | 20 | 28.5 | 9  |
| MO-6816-60H   | 33.5 | 10.5 | 20 | 38   | 9  |
| MO-6816-30P   | 21.5 | 10.5 | 28 | 35   | 15 |

## (3) Adjustment value of the looper thread cam



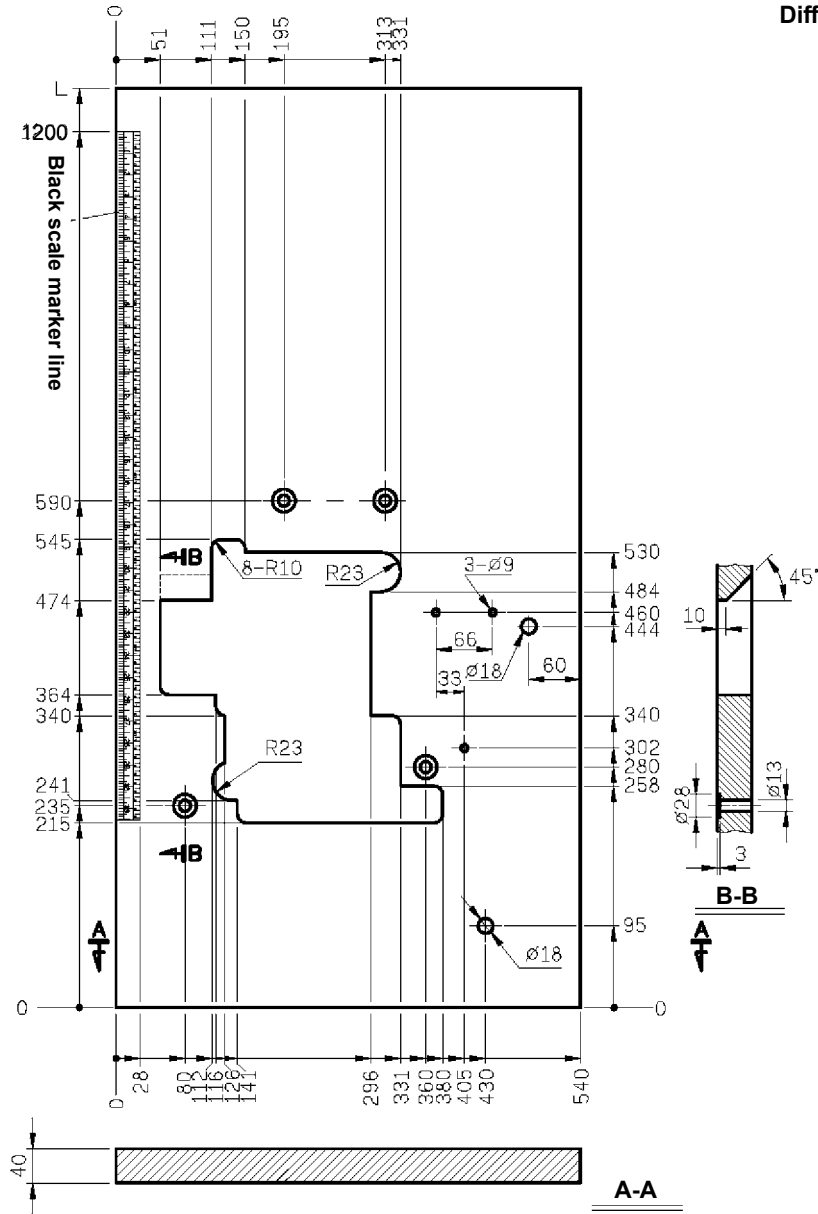
Adjust the looper thread cam timing so that the looper thread cam releases the looper thread when the needle tip comes down to project the undersurface of the throat plate by 1 to 2 mm.

## 9. ERROR CODE LIST

| Error code | Description   |
|------------|---|
| E01        | Overvoltage error<br>This error code is displayed when the alternating-current voltage exceeds 317 V - 325 V. |
| E02        | Low voltage error<br>This error code is displayed when the alternating-current voltage drops below 170 V.     |
| E03        | Communication fault between the operation panel and the electrical box  |
| E05        | Pedal signal fault  |
| E07        | Lock error<br>This error is automatically reset when the pulley is turned.                                    |
| E09        | Upper stop position cannot be found during operation.   |
| E14        | Encoder signal or hall signal is not normal.  |
| E15        | Hardware overcurrent signal (fault signal)  |
| E19        | Electrolytic capacitor connection error   |
| E21        | The operation panel PCB has re-started  |

## 10. TABLE DRAWING

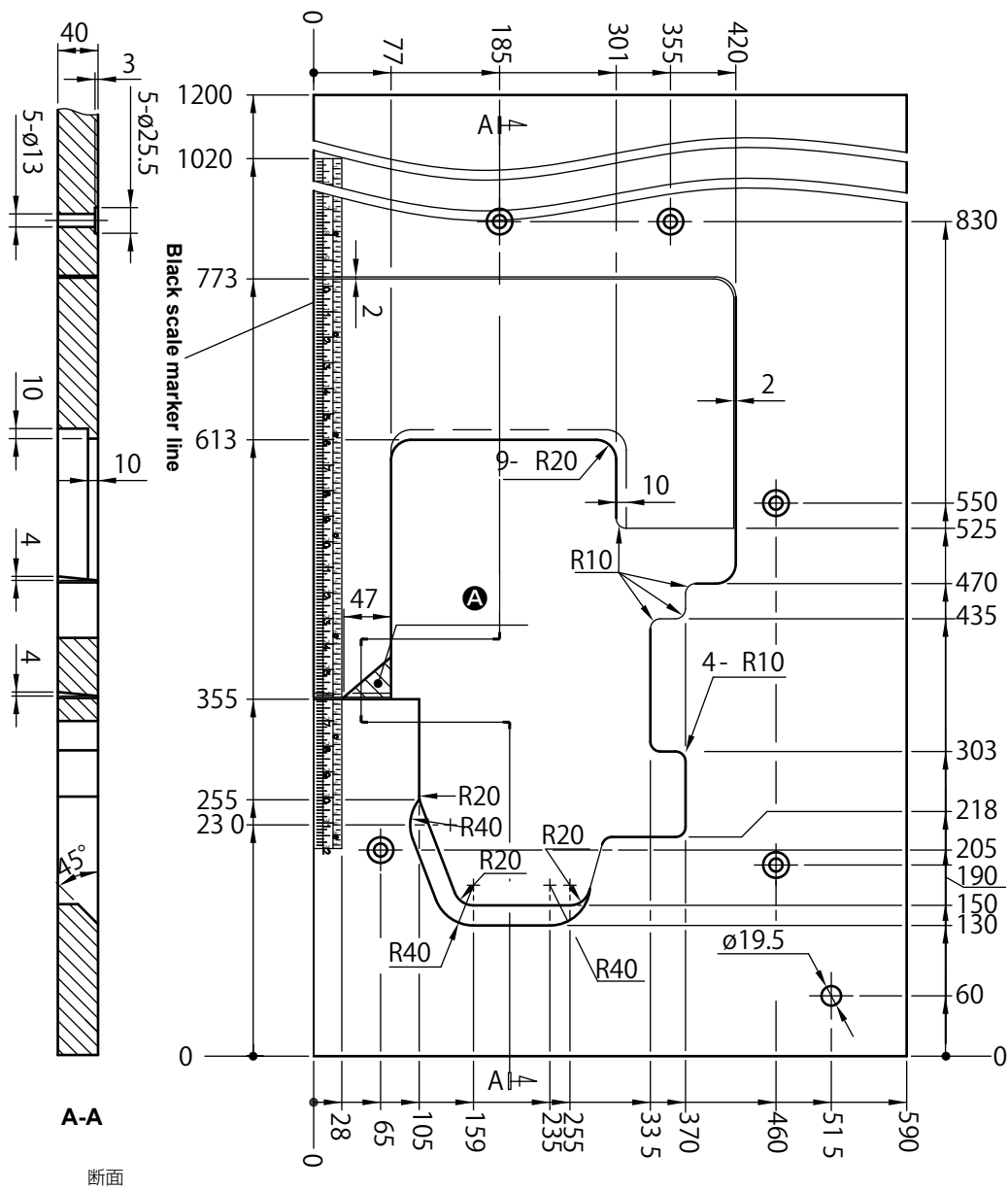
Unit : mm  
Difference :  $\pm 2$



# Fully-sunken type table

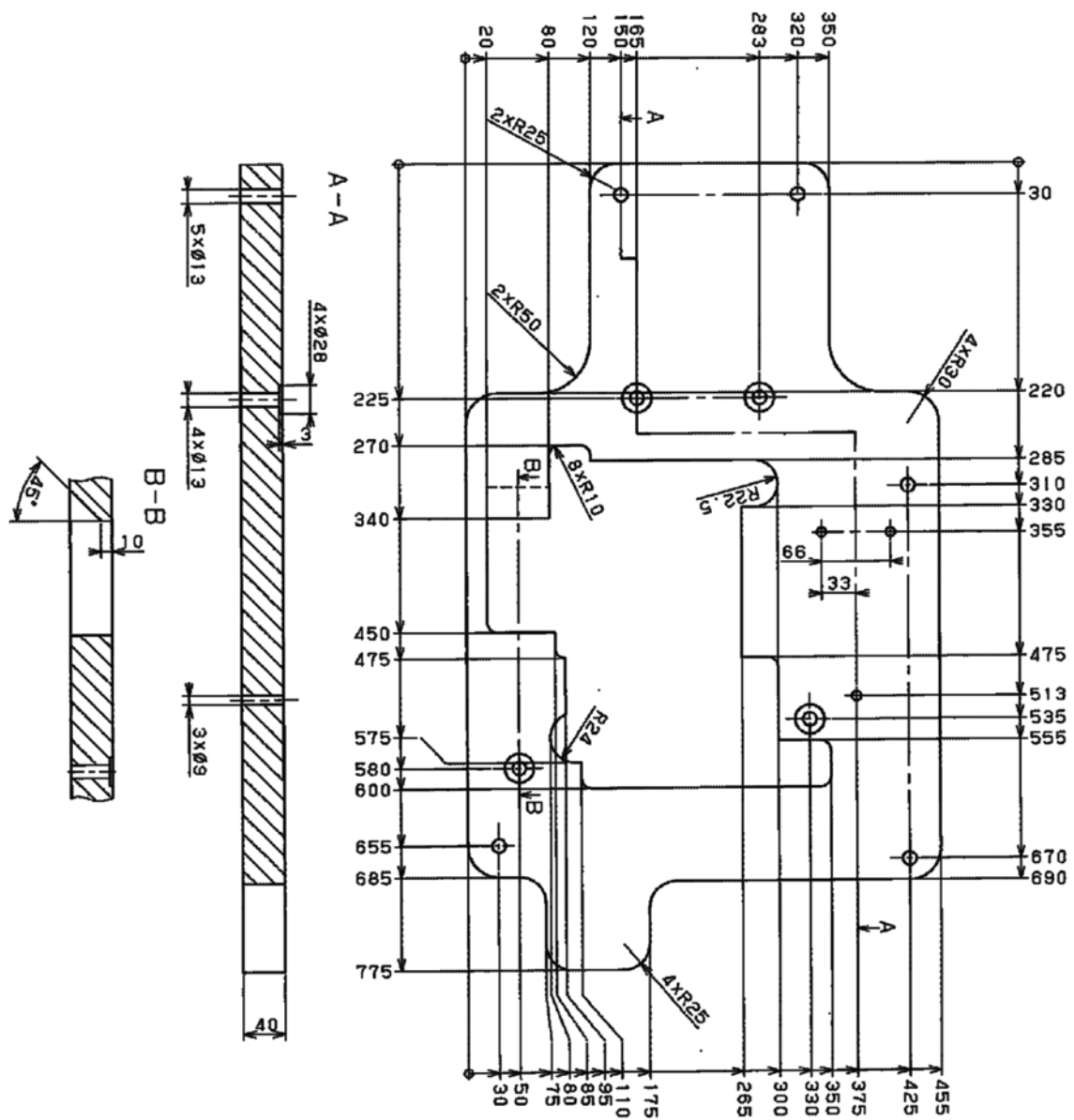
\* Auxiliary table is required.

Unit : mm  
Difference :  $\pm 2$   
Weight : 12.4 kg  $\pm 5\%$

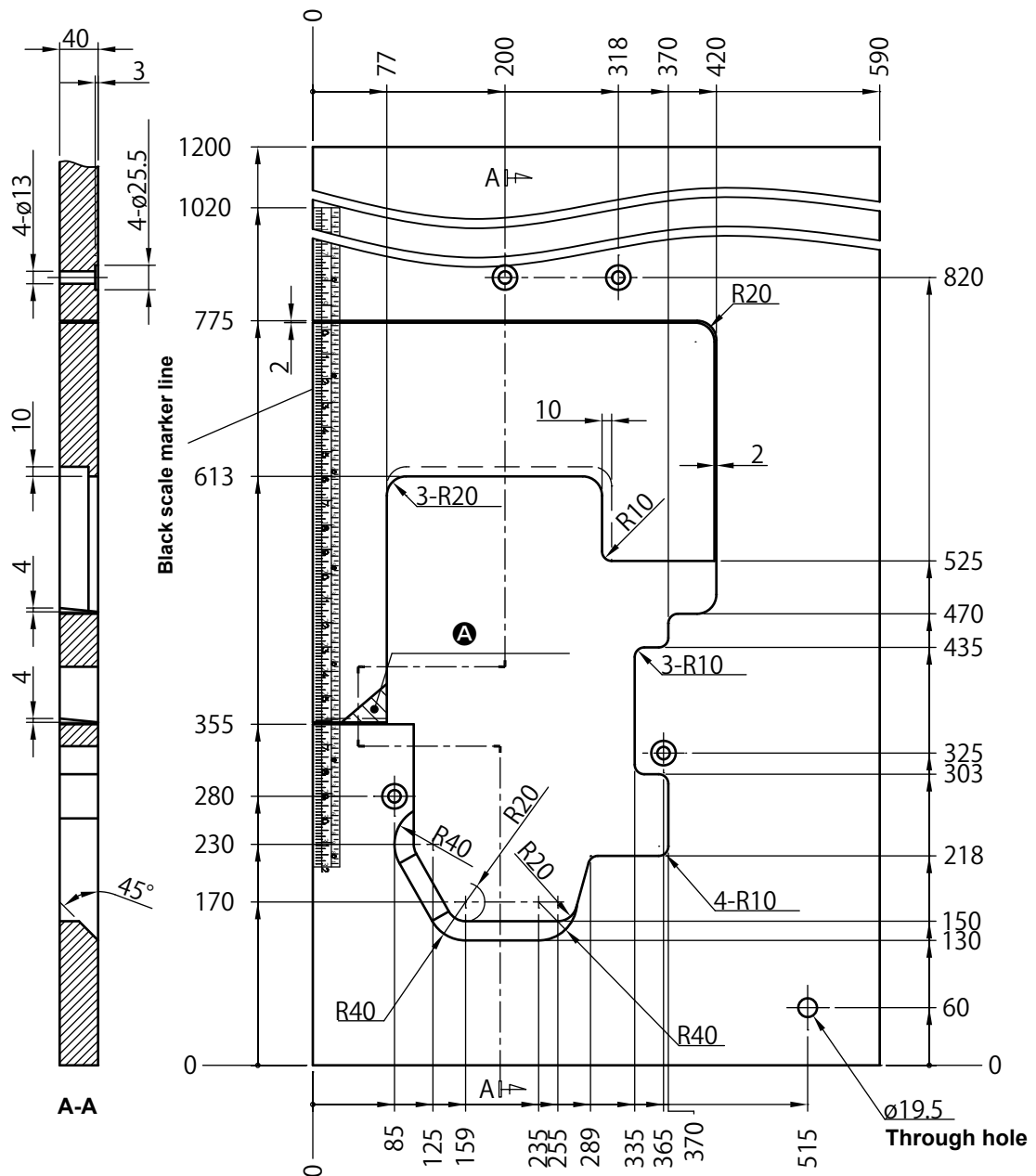


# Auxiliary table for fully-sunken type table

Unit : mm  
 Difference :  $\pm 2$   
 Weight : 4.25 kg  $\pm 5\%$



# Fully-sunken type table (bracket type)



**A** = This part has to be removed when installing the auto hemmer device to the sewing machine.