

***ENGLISH***

**MB-1373,1377  
INSTRUCTION MANUAL**

# CONTENTS

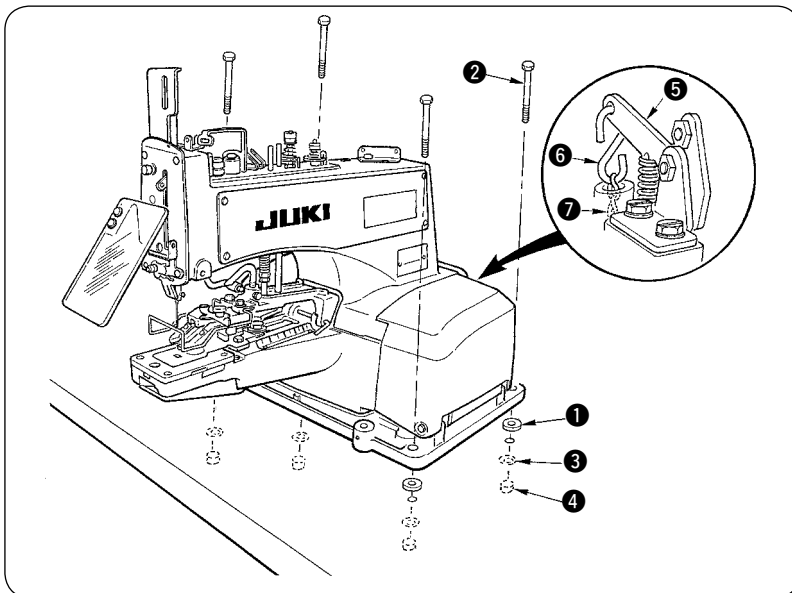
|  |           |
|--|-----------|
| <b>1. SPECIFICATIONS .....</b>   | <b>1</b>  |
| <b>2. PREPARATION OF THE SEWING MACHINE .....</b>                                    | <b>1</b>  |
| 2-1. Installation .....  | 1         |
| 2-2. Lubrication.....  | 2         |
| 2-3. Attaching the needle .....  | 2         |
| 2-4. Attaching the needle bar cover.....   | 3         |
| 2-5. Attaching the button tray assembly .....  | 3         |
| 2-6. Threading the machine .....   | 3         |
| <b>3. ADJUSTMENT OF THE SAWING MACHINE .....</b>                                     | <b>4</b>  |
| 3-1. Thread tension adjustment.....  | 4         |
| 3-2. Adjustment of the thread pull-off lever .....                                   | 4         |
| 3-3. Adjusting the tension lever .....   | 4         |
| 3-4. Adjusting the nipper .....  | 5         |
| 3-5. Adjusting the thread tension guide on the face plate.....                       | 5         |
| 3-6. Needle-to-looper relation .....   | 5         |
| 3-7. Position of the needle guide .....  | 6         |
| 3-8. Height of the button clamp.....   | 6         |
| 3-9. Work pressing force .....   | 6         |
| 3-10. Adjustment of the button clamp stop lever.....                                 | 6         |
| 3-11. Timing of thread tension release .....   | 7         |
| 3-12. Setting for 2- or 4-hole buttons.....  | 7         |
| 3-13. Setting a number of stitches.....  | 8         |
| 3-14. Adjusting the position of the stop-motion.....                                 | 8         |
| 3-15. Adjusting the position of the moving knife .....                               | 9         |
| 3-16. Clearance between the button clamp lifting lever and the adjusting screw ..... | 9         |
| 3-17. How to set the L-shaped lifting rod .....                                      | 9         |
| 3-18. Knot-tying mechanisms .....  | 10        |
| (1) Adjusting the knot-tying connecting plate.....                                   | 10        |
| (2) Adjusting the knot-tying arm stopper.....  | 10        |
| (3) Adjusting the knot-tying notch .....   | 10        |
| (4) Changeover of with/without knot-tying .....                                      | 11        |
| 3-19. Adjusting the thread tension controller No. 3 .....                            | 12        |
| (1) Assembly procedure .....   | 12        |
| (2) Adjustment .....   | 12        |
| <b>4. MAINTENANCE, SUBCLASS MODELS AND ATTACHMENTS .....</b>                         | <b>13</b> |
| 4-1. How to connect the metal fittings of the belt .....                             | 13        |
| 4-2. Subclass models .....   | 13        |
| 4-3. Attachments.....  | 14        |
| (1) Attachments for shank buttons (Pearl buttons) (Z033) .....                       | 15        |
| (2) Attachment for the first process of wrapped-around buttons (Z041).....           | 15        |
| (3) Attachment for the second process of wrapped-around buttons (Z035).....          | 16        |
| (4) Attachment for snaps (Z037).....   | 16        |
| (5) Attachment for metal buttons (Z038).....   | 17        |
| 4-4. Motor pulley and belt.....  | 17        |
| <b>5. TROUBLES AND CORRECTIVE MEASURES .....</b>                                     | <b>18</b> |

# 1. SPECIFICATIONS

|                    | MB-1373  | MB-1377  |
|--------------------|--|--|
| Sewing speed       | Normal 1,300 sti/min (Max. 1,500 sti/min)  |  |
| Number of stitches | 8, 16 and 32 stitches  |  |
| Feed amount        | Lateral feed 2.5 to 6.5mm<br>Longitudinal feed 0, 2.5 to 6.5mm   | Lateral feed 2.5 to 6.5mm<br>Longitudinal feed 0, 2.5 to 4.5mm |
| Button size        | 10 to 28 mm  |  |
| Needle used        | TQx1 #16 (#14 to #20) TQx7 #16 (#14 to #20)  |  |
| Lubricating oil    | JUKI New Defrix Oil No. 1  |  |
| Noise              | - Equivalent continuous emission sound pressure level (L <sub>pA</sub> ) at the workstation :<br>A-weighted value of 84 dB; (Includes K <sub>pA</sub> = 2.5 dB); according to ISO 10821-<br>C.6.3 -ISO 11204 GR2 at 1,300 sti/min. |  |

# 2. PREPARATION OF THE SEWING MACHINE

## 2-1. Installation



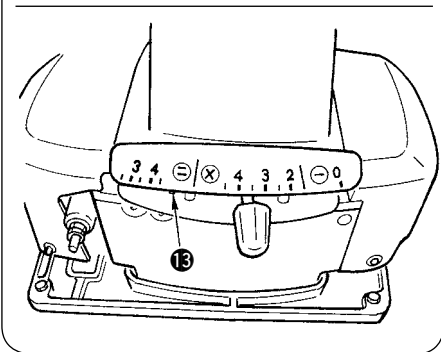
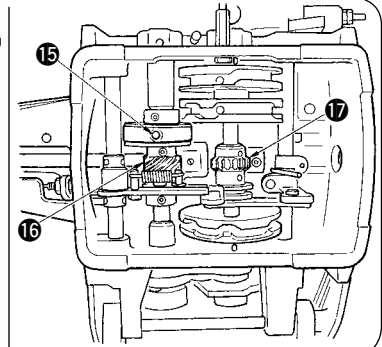
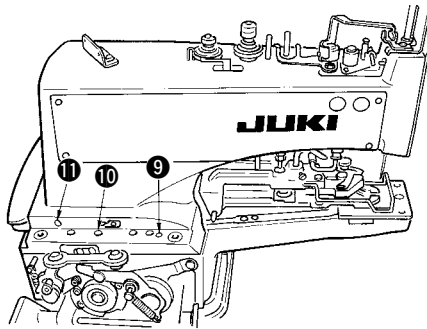
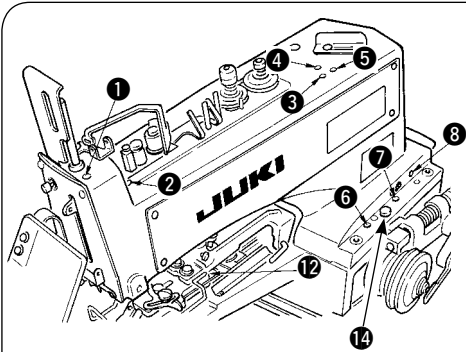
Put rubber cushion **1** on the table, place the machine head on the rubber cushion and fix it to the table using screws **2**, plain washers **3** and nuts **4**. Attach "S" chain hook **6** and chain **7** to stop motion trip lever **5**.

## 2-2. Lubrication

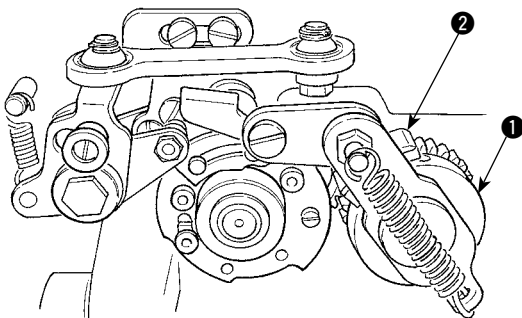


### WARNING :

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) Open the side cover, and apply JUKI New Defrix Oil No. 1 to the portions shown by the red marks ① to ⑬ (⑧ : MB-1377 only). (Apply approximately 1 cc of oil to the respective lubricating places one to two times a week.)
- 2) Loosen connecting screw ⑭, tilt the machine head backward and apply grease (JUKI designated grease) to crossed helical gear ⑮ and worm gear ⑰.
- 3) Check, approximately once a week, that oil amount is sufficient to reach the top of the oil felt placed inside the bed mounting base. If the amount of oil is insufficient, add an adequate amount of oil. At this time, also apply oil to crank rod ⑮.



### [Caution at the time of lubricating]

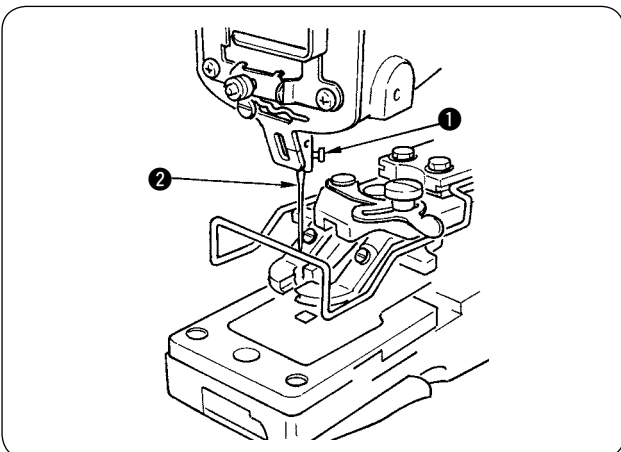
1. Take care not to allow speed slowing friction wheel ① and friction plate ② to be clogged with oil to prevent them from the deterioration of retardation performance. In addition, when the components are clogged with oil, wipe the oil from them.
2. Take care not to allow the machine belt to be clogged with oil to prevent it from the deterioration.

## 2-3. Attaching the needle



### WARNING :

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★ Use a standard needle of TQx1 #16.

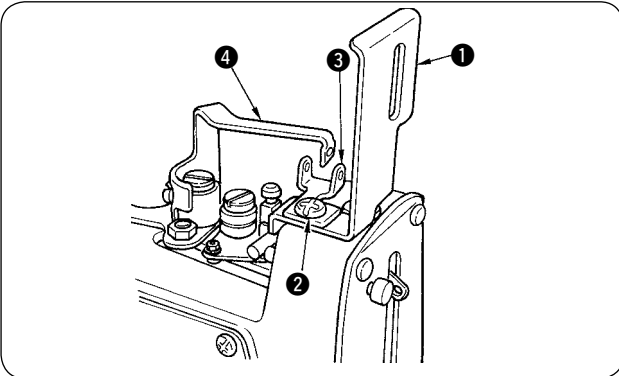
Loosen setscrew ① and hold needle ② with the long groove facing toward you. Then fully insert it into the hole in the needle bar, and tighten setscrew ①.

## 2-4. Attaching the needle bar cover



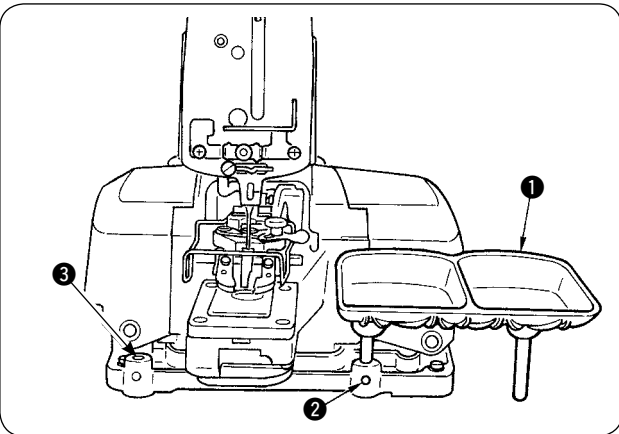
### WARNING :

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 screw ② and remove thread guide ③.
- 2) Place needle bar guard ① under thread guide ③ and attach thread guide ③ so that lever ④ comes to the center of it at the start of the machine.
- 3) Fix the cover with screw ②.

## 2-5. Attaching the button tray assembly



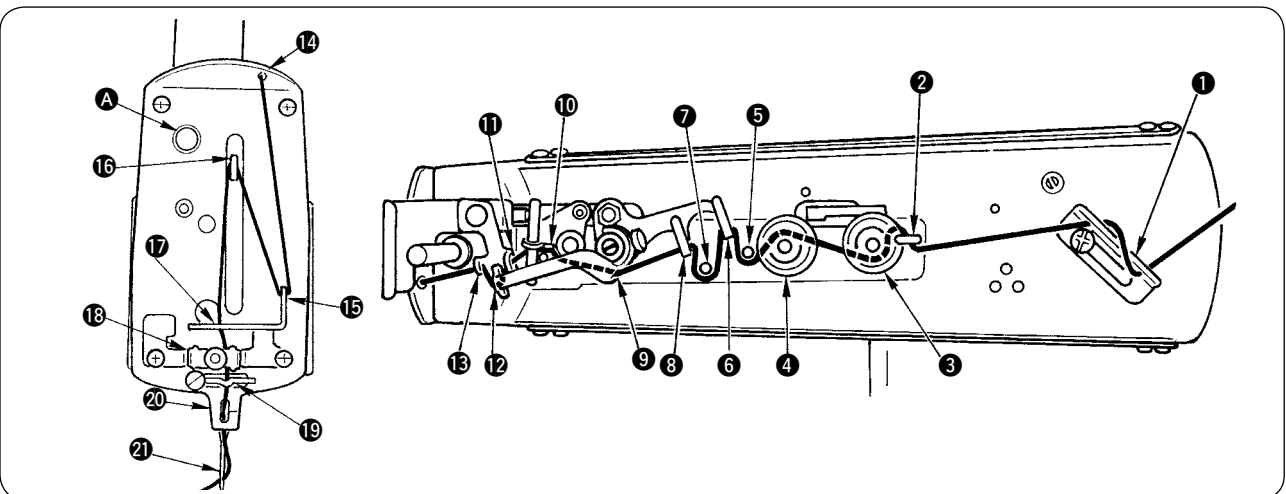
Insert the posts of button tray ① in hole on the right of the machine sub-base and tighten each setscrew ②. If it is difficult for the operator to pick up the buttons on the right side, change it to hole ③ on the left side.

## 2-6. Threading the machine



### 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.

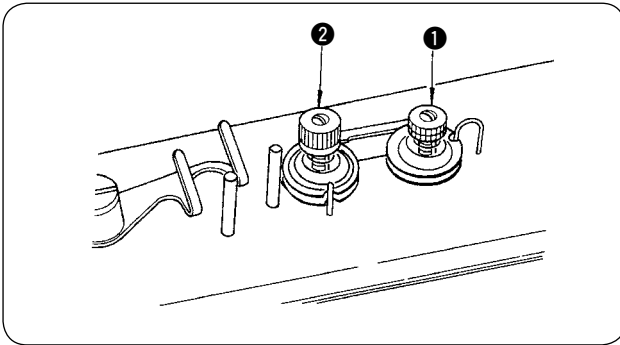


Thread the machine head in the order of ① to ②① as shown in the illustration given above. Then, pass the thread through the needle eye from the front for approximately 60 to 70 mm as you depress nipper releasing knurled thumb nut A.

\* Standard needle is TQ X 1 #16.

### 3. ADJUSTMENT OF THE SAWING MACHINE

#### 3-1. Thread tension adjustment



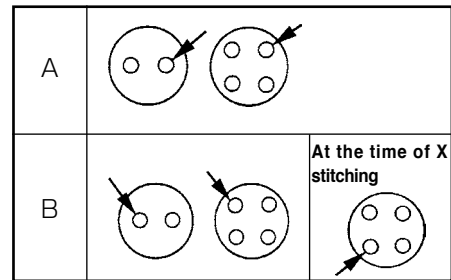
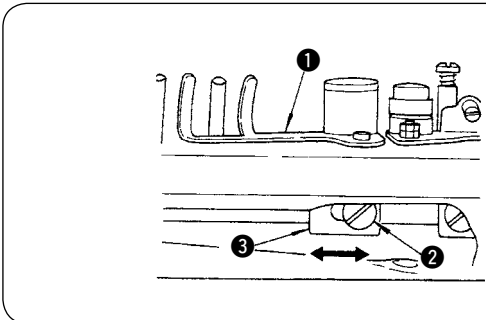
Tension post No. 1 ❶ is used to adjust the thread tension to sew on the button and a relatively low tension will be enough. Tension post No. 2 ❷ is used to adjust the thread tension applied to the root of the button sewing stitches. This tension must be determined according to the type of thread, fabric and thickness of the button and must be higher than that of tension post No. 1 ❶. Turn the tension nuts clockwise to increase or counterclockwise to reduce the thread tension.

#### 3-2. Adjustment of the thread pull-off lever



#### 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.



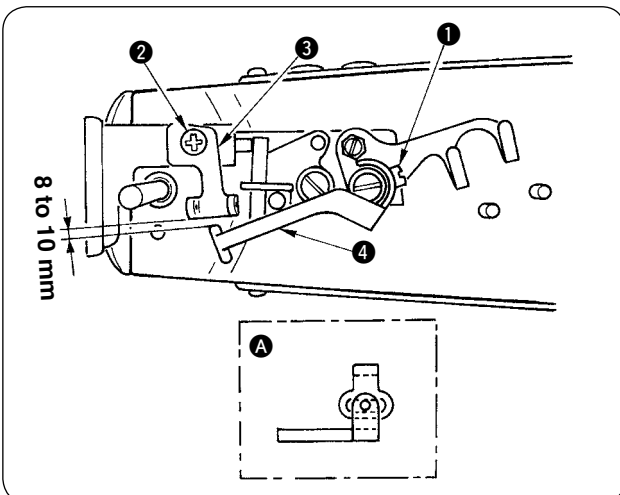
To adjust the thread pull-off lever ❶, insert a screwdriver through an opening in the machine arm side cover (left), loosen screw ❷ and adjust the position of nipper bar block (rear) ❸ to the left or the right. If the end of thread is drawn from arrow hole A in the button after sewing, change the position of nipper bar block (rear) ❸ to the left. Move the lever to the right when the thread end comes out from arrow hole B.

#### 3-3. Adjusting the tension lever



#### 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) When the machine is in the stop-motion state, loosen screw ❶.
- 2) Tighten setscrew ❶ so that there is a clearance of 8 to 10 mm as a standard between the end of thread tension guide ❸ and end of lever ❹.

After the adjustment, make sure that the thread path is within the slot as illustrated in Fig. A when the machine starts.



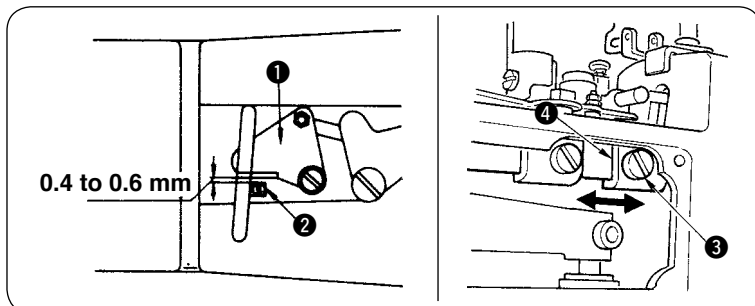
If the thread paths do not coincide with each other, loosen screw ❷ in the tension thread guide and adjust it properly.

### 3-4. Adjusting the nipper



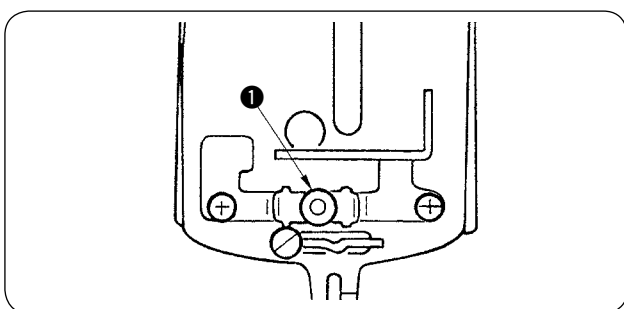
#### WARNING :

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) Provide a 0.4 to 0.6 mm clearance between nipper block ② and nipper ① to prevent the nipper ① from holding the thread while the machine is in operation.
- 2) Loosen screw ③ and move nipper bar block ④ to the right or the left.

### 3-5. Adjusting the thread tension guide on the face plate



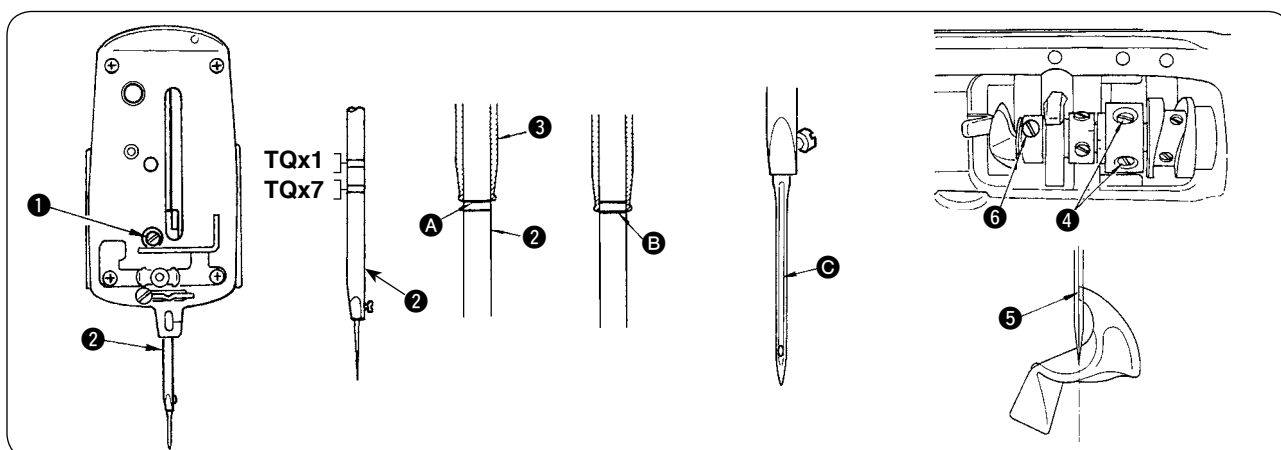
If the formation of seams at the start of sewing is failed and the seams are formed on the way even when the thread pull-off lever is adjusted, turn thumb nut ① (double nut) to decrease the thread tension.

### 3-6. Needle-to-looper 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-looper relation as follows :

- 1) Depress the pedal fully forward, turn the needle driving pulley in the normal sewing direction by hand to bring down the needle bar to the lowest position of its stroke and loosen screw ①.

#### (Adjusting the needle bar height)

- 2) Adjust the height of the needle bar using the top two lines engraved on the needle bar ② for the TQx1 needle and using the bottom two lines for the TQx7 needle. Align the upper line ① with the bottom end face of needle bar bushing (lower) ③ and tighten screw ①. At this time, tighten the screw so that groove ④ of the needle faces the front.

#### (Looper position)

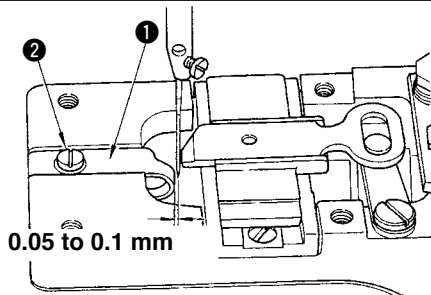
- 3) Loosen screws ④ and turn by hand the needle driving pulley until lower line ⑤ of two lines aligns with the bottom end face of needle bar bushing (lower) ③.
- 4) By keeping the machine in this state, align looper blade ⑥ with the center of the needle and tighten screws ④.
- 5) Loosen screws ⑥ and provide a 0.01 to 0.1 mm clearance between the looper and the needle. Tighten screws ⑥.

### 3-7. Position of the needle guide



#### WARNING :

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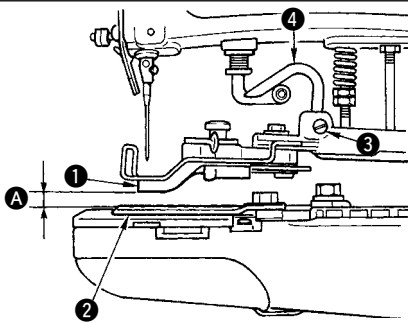
Loosen screw ② and provide a 0.05 to 0.1 mm clearance between the needle guide ① and the needle by moving the needle guide ① to the left or the right when the needle is in the lowest position.

### 3-8. Height of the button clamp



#### WARNING :

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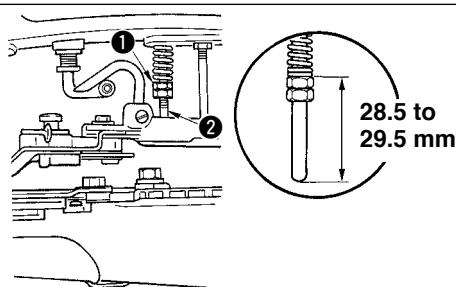
- 1) The standard clearance **A** between the rear side of the bottom face of button clamp jaw lever ① and the top surface of feed plate ② is 8 mm at the position where the machine has stopped after sewing.
- 2) To adjust the height of the button clamp unit, loosen screw ③ in the button clamp lifting hook and move button clamp lifting hook ④ up or down.

### 3-9. Work pressing force



#### WARNING :

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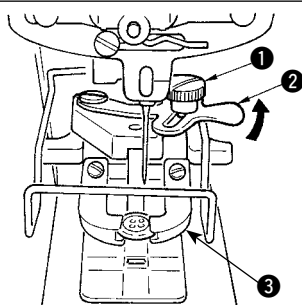
The standard work pressing force is by providing a 28.5 to 29.5 mm between the top end of nut ① and the bottom end of pressure adjusting bar ②. Turn nut ① to adjust it.

### 3-10. Adjustment of the button clamp stop lever



#### WARNING :

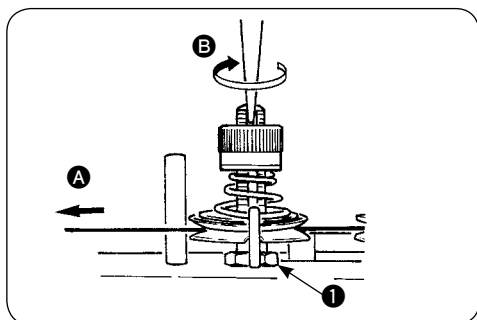
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



When clamp screw ① is loosened in the state of stop-motion, button clamp jaw levers ③ opens/closes with button clamp stop lever ②. Set a button to the correct position and fix button clamp stop lever ② at the position where taking in and out of the button is easily performed with clamp screw ①.



### 3-11. Timing of thread tension release



Turn the needle driving pulley as you draw the thread in the direction of arrow mark **A** and you will find a point at which the tension discs on the tension post No. 2 release the thread. At this moment, the standard distance from the top end of the needle bar bushing (upper) to the top end of the needle bar is 44 to 47 mm (in case of the needle of TQ X 7, 54 to 57 mm).

Perform the following adjustments especially when the undermentioned troubles occur frequently.

Loosen nut **1**, insert the blade of a screwdriver to the top slot of the tension post No. 2 and turn it in the direction of arrow mark **B** to lower the height of the thread floating bar and in the opposite direction to raise the height.

| Phenomenon  | Height of thread floating bar        |
|---|--------------------------------------|
| 1. When the stitch made on the wrong side of the workpiece is too loose ; | Make the needle bar slightly higher. |
| 2. When the thread is broken at the time of stop-motion ;                 | Make the needle bar slightly lower.  |
| 3. When the thread is broken frequently ;                                 | Make the needle bar slightly lower.  |

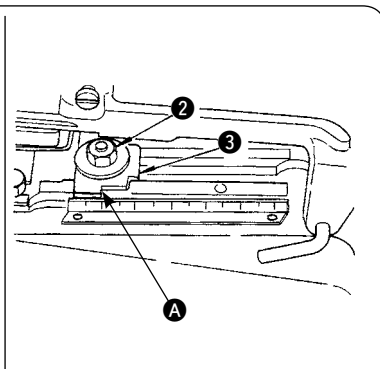
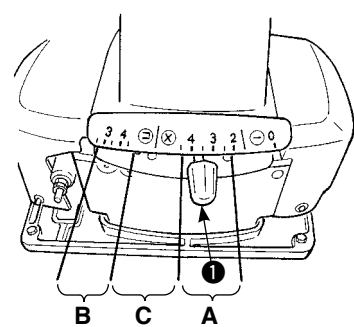
### 3-12. Setting for 2- or 4-hole buttons



#### 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.

MB-1377



Perform the adjustment after confirming that the sewing machine is located at the position of the stop-motion (refer to "3-14. Adjusting the position of the stop-motion", p.8).

Measure the distance between two holes in a button and set equally crosswise and lengthwise feed regulators for 4-hole buttons.

[In case of MB-1373]

#### ★ Lengthwise feed

Push down lengthwise feed adjusting lever **1** and set it to "0" for 2-hole buttons or a corresponding amount for 4-hole buttons.

#### ★ Crosswise feed

Loosen nut **2** and set section **A** of pointer **3** to a corresponding amount. Then tighten nut **2**.

[In case of MB-1377]

#### ★ Lengthwise feed

Push down lengthwise feed adjusting lever **1** and set it to "0" for 2-hole buttons or a corresponding amount for 4-hole buttons by the respective procedures below according to the sewing methods.

X stitch : Set the lengthwise feed adjusting lever to the position corresponding to the amount for the button within the range of **A**.

U-sharp stitch : Set the lengthwise feed adjusting lever to the position corresponding to the amount for button within the range of **B**.



When setting the lengthwise feed adjusting lever to the position of **C** (outside of range of setting the lever), not only the sewing cannot be performed but also trouble will be caused. Do not set the feed adjusting lever at the position of **C**.

#### ★ Crosswise feed

Loosen nut **2** and set section **A** of pointer **3** to a corresponding amount. Then tighten nut **2**.



Before operating the machine, ensure that the needle enters the center of each hole in the button.

### 3-13. Setting a number of stitches

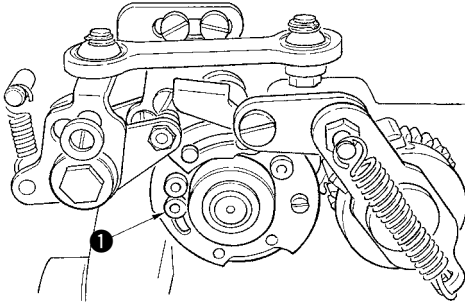


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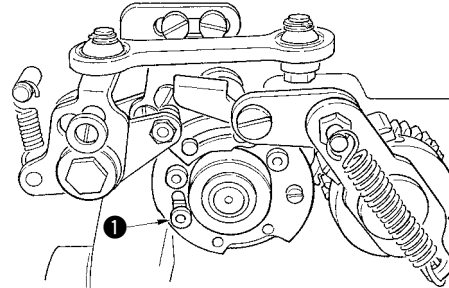
To change the number of stitches, open the left-hand side cover and change the number of stitches using stitch number adjusting screw ❶ and stitch number adjusting lever ❷ (optional).

#### ★ How to adjust 8 stitches



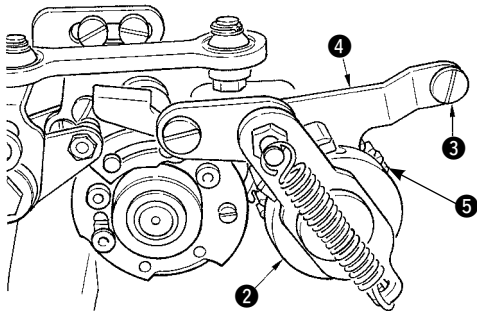
To make 8 stitches, loosen stitch number adjusting screw ❶ and fix it to the position as shown in the illustration.

#### ★ How to adjust 16 stitches



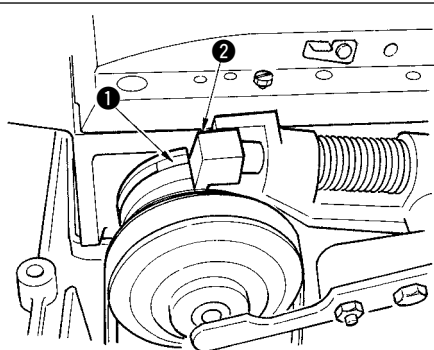
When stitch number adjusting screw ❶ being set for "8 stitches" has arrived at the left end, loosen stitch number adjusting screw ❶ and fix it to the position as shown in the illustration.

#### ★ How to adjust 32 stitches



In the state of 16 stitches, stitch number adjusting gear roller ❷ which is attached to the large gear ❸ comes to the lower side, assemble stitch number adjusting lever ❹ (supplied as accessories) using hinge screw ❸ (supplied as accessories).

### 3-14. Adjusting the position of the stop-motion



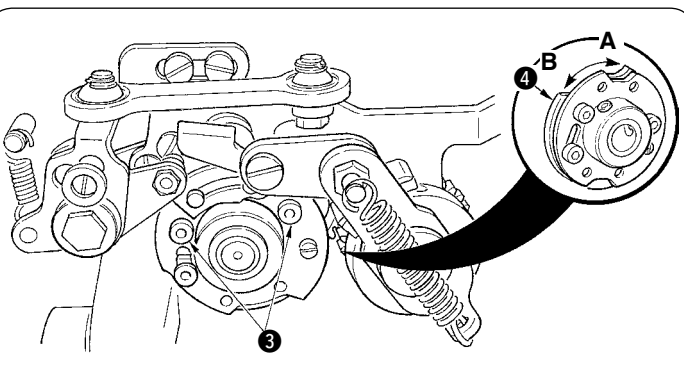
Adjust so that claw ❶ of the stop-motion cam comes in contact with stop-motion hook ❷ when the sewing machine completes the sewing and stops.



When replacing the motor pulley and changing the sewing speed from 1,300 sti/min to 1,500 sti/min, and vice versa, be sure to re-adjust the position of the stop-motion.

#### [Adjusting procedure]

- When the stop-motion hook comes in contact with the stop-motion cam and rebounds, (When there is a clearance between claw ❶ and stop-motion hook ❷) loosen two stop-motion position adjusting screws ❸, turn stop-motion adjusting cam ❹ in the direction of A, and fix stop-motion position adjusting screws ❸.
- When the stop-motion hook stops before it comes in contact with the stop-motion cam claw Loosen two stop-motion position adjusting screws ❸, turn stop-motion adjusting cam ❹ in the direction of B, and fix stop-motion position adjusting screws ❸.

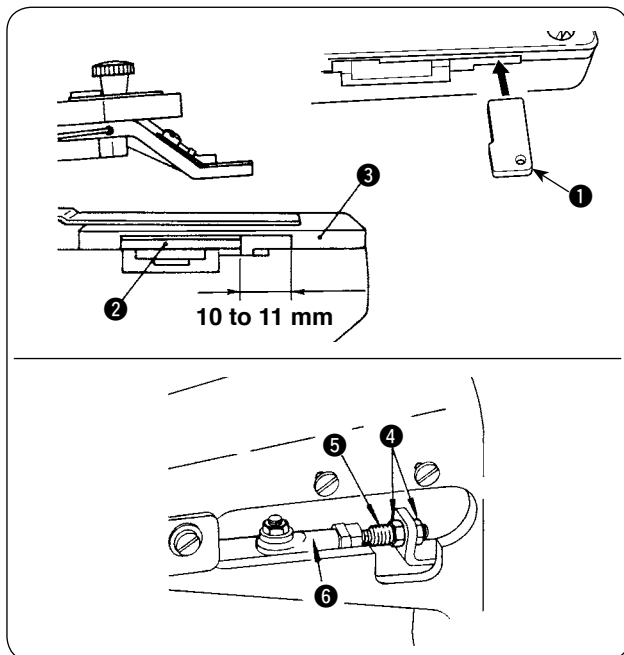


### 3-15. Adjusting the position of the moving knife



#### WARNING :

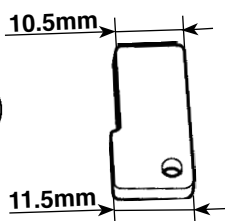
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



Adjust the position of the moving knife by means of thread trimming gauge ① that comes with the unit as an accessory.

When the presser has completely lifted at the stop-motion position (refer to "3-14. Adjusting the position of the stop-motion", p.8), it is the standard that the clearance between thread trimming connecting plate (front) ② and the end face of the slit of throat plate ③ is 10 to 11 mm.

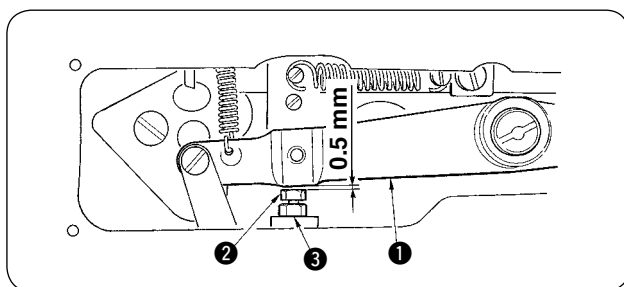
Tilt the sewing machine. Remove the oil shield of the bed. Loosen two nuts ④. Adjust the position of the moving knife by moving connecting screw ⑤ back and forth using the gauge you have inserted as a guide. When you loosen nuts ④, try to position thread trimmer connecting joint ⑥ so that it is nearly leveled.



If the moving knife is not correct (the distance between ② and ③ is too short), the yoke slide may interfere with the thread separating claw. In this case, adjust the clearance provided between thread trimmer connecting plate (front) ② and the end face of the slot in throat plate ③ to 11 to 12 mm using the "11.5 mm" side of gauge ①.

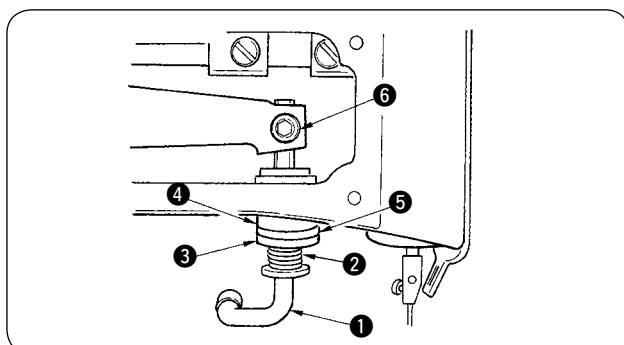
In the case the position of the moving knife is not correct (the distance between ② and ③ is too long), thread may remain on the wrong side of material. To prevent this, adjust the aforementioned clearance to 10 to 11 mm using the "10.5 mm" side of the gauge.

### 3-16. Clearance between the button clamp lifting lever and the adjusting screw



Provide a 0.5 mm clearance between the end face of button clamp lifting lever ① and adjusting screw ② at the stop-motion position (refer to "3-14 Adjusting the position of the stop-motion", p.8) and tighten with adjusting screw nut ③.

### 3-17. How to set the L-shaped lifting rod



Put moving knife push-back spring ②, stop-motion rubber cushion washer ③, stop-motion rubber cushion ④ and stop-motion rubber cushion washer ⑤, in this order, to L-shaped lifting rod ①. Make the jaw of the machine arm come into close contact with the end face of the stop-motion rubber cushion washer at the stop-motion position (refer to "3-14 Adjusting the position of the stop-motion", p.8) and set the L-shaped lifting rod without a play. Then tighten it with screw ⑥.

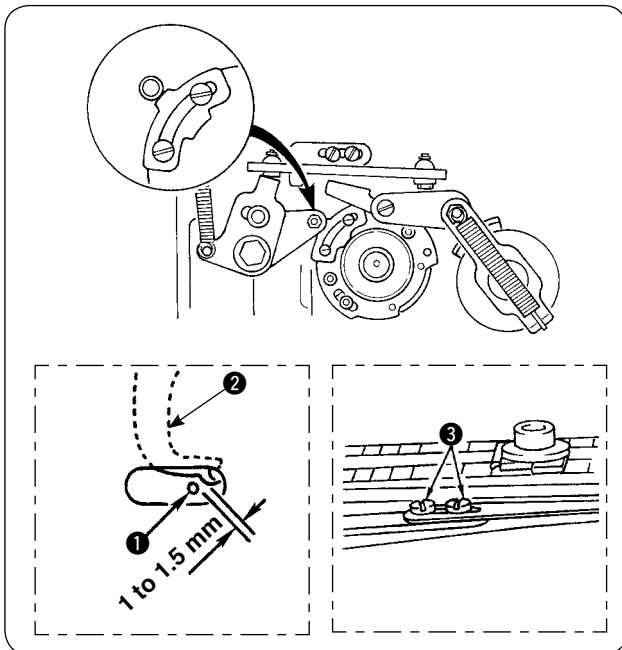
### 3-18. Knot-tying mechanisms



**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.

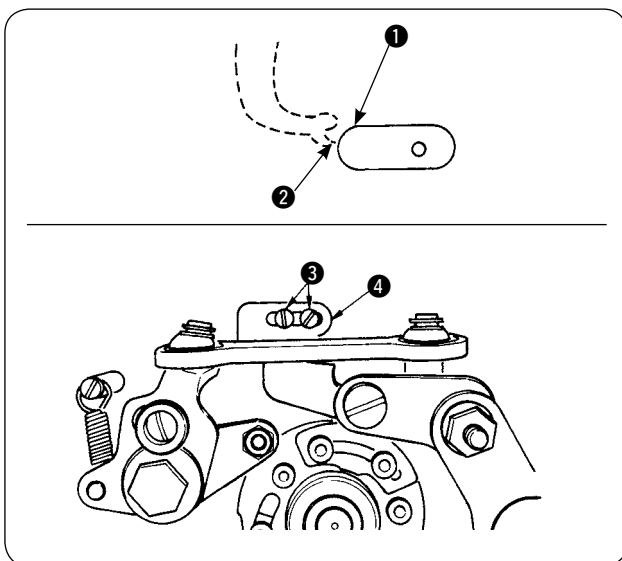
#### (1) Adjusting the knot-tying connecting plate



Loosen screws ❶ and adjust so that a clearance of 1 to 1.5 mm is provided between the needle ❷ and the knot tying plate ❸ when the roller of the knot-tying arm gets on the outmost periphery of the knot-tying notch.

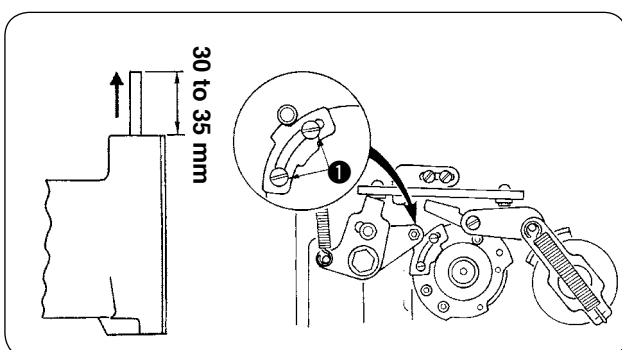
( After the adjustment, ascertain that the needle does not come in contact with the knot-tying plate. )

#### (2) Adjusting the knot-tying arm stopper



When starting the sewing machine and the roller of knot-tying arm does not come into contact with the knot-tying notch, loosen screws ❸ and adjust with stopper ❹ so that outside periphery ❶ of the needle hole almost aligns with top end ❷ of the knot-tying plate.

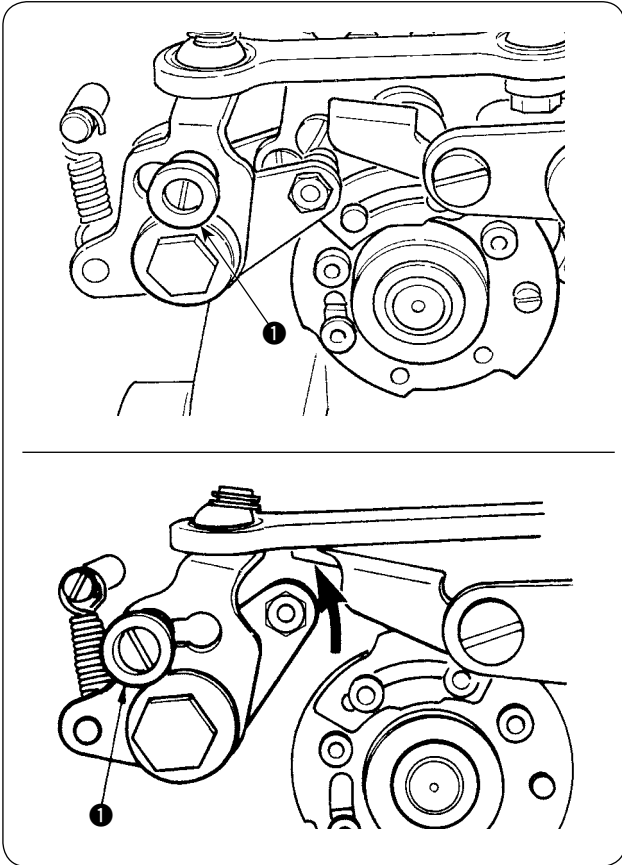
#### (3) Adjusting the knot-tying notch



Loosen screws ❶ and adjust so that the roller of the knot-tying arm comes in contact with the knot-tying notch when the needle bar goes up at the fourteenth stitch as high as 30 to 35 mm (40 to 45 mm when a TQ x 7 needle is used) above the needle bar upper bushing.

**Caution** If two knot-tying notches are to be installed (without crossover stitch), make the aforementioned adjustment at the 6th and 14th stitches.

#### (4) Changeover of with/without knot-tying



To make “with knot-tying”, pull knot-tying changeover knob ❶ toward the front and place it to the position in the figure.

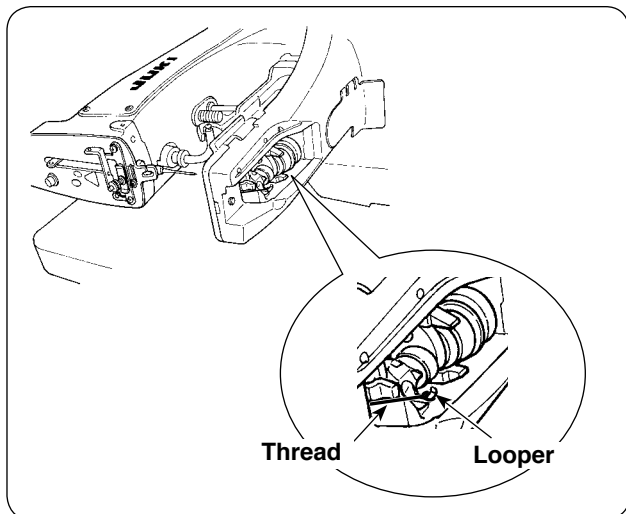
To make “without knot-tying”, pull knot-tying changeover knob ❶ toward the front and place it to the position in the figure.

### 3-19. Adjusting the thread tension controller No. 3



#### 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.



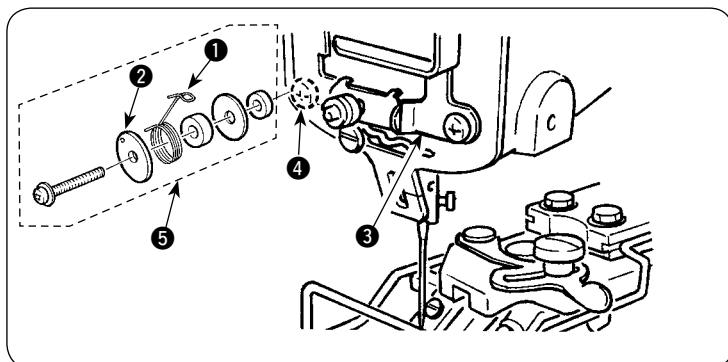
Depending on the product to be sewn, the needle can pierce the thread of the previous stitch when it enters the same point twice during sewing (8th, 16th, 24th and 32nd stitches). This results in thread trimming failure and thread breakage. (When the needle enters the same needle entry point as the previous stitch, the button clamp does not move. As a result, the thread is likely to slacken and the needle pierces the slackened part of the thread.)

If the phenomenon where the thread gets hung up on the looper and does not leave there frequently occurs, use the thread tension controller No.3 (asm.) (part number: 40112426) for the thread take-up spring.



In addition, the aforementioned trouble can be prevented more effectively by the use of a ball-point needle instead of the current one.

#### (1) Assembly procedure

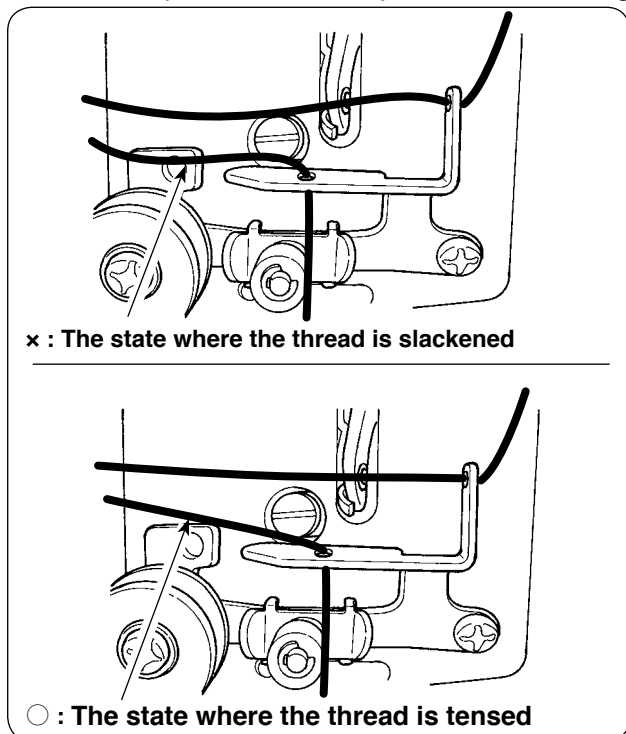


Put the top end of thread take-up spring ① into the hole in the thread take-up spring base ②.

Remove screw ④ from tension controller No. 3 mounting plate ③. Then, tighten thread tension controller No.3 (asm.) ⑤ for the thread take-up spring with that screw.

#### (2) Adjustment

After the completion of assembly, check the following:

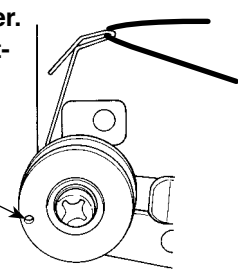


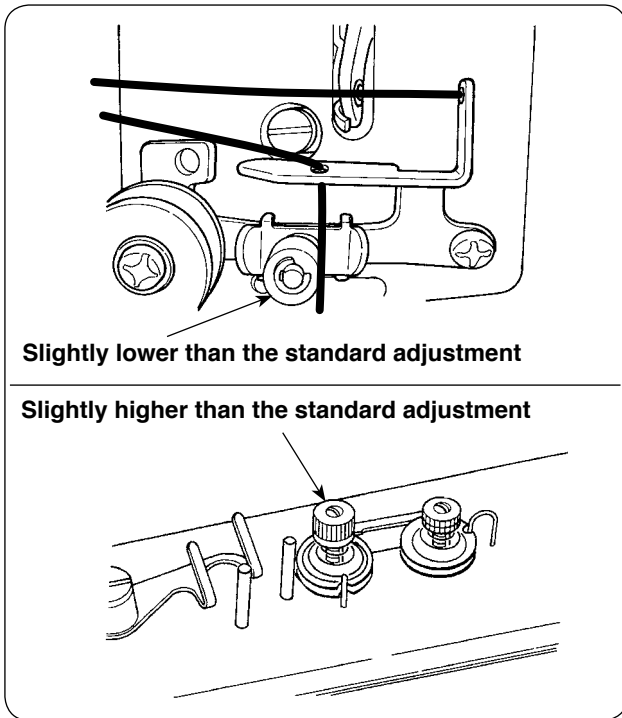
#### 1) Check the thread take-up amount

Turn the handwheel by hand to carry out sewing. Adjust so that the thread is not slackened at the moment when the needle penetrates the material. Adjust by moving the spring to the left position counterclockwise that the thread is not slacked. If you turn the spring counterclockwise excessively, the thread take-up amount will be excessively increased, resulting in slip-off of the thread from the needle eyelet.



- The thread is not tensed unless the thread loop has been formed. Be sure to check how the thread is tensed at the 2nd stitch or later.
- At the time of adjustment, this hole is used as a guide to determine the best-suited position.





2) Adjust the pressure of the thread tension controller.

To allow the thread take-up spring to take effect, adjust so that the pressure of the thread tension controller plate is slightly decreased.

At this time, adjust so that the pressure of the tension controller No. 2 is slightly increased. This will effectively prevent the needle from piercing the thread of the previous stitch.

3) Correctly adjust the looper timing.

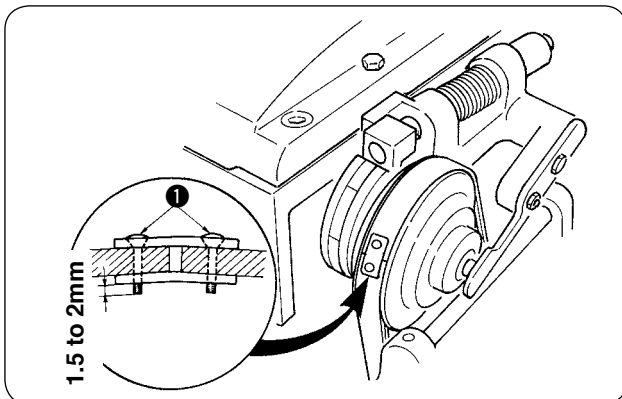
Thread loop may not be smoothly formed since the spring is adjusted so that the thread is not slackened at the moment when the needle penetrates the material. Be sure to adjust the looper timing with accuracy so as to operate the sewing machine smoothly.



If the looper timing is excessively advanced, the looper may fail to catch the loop smoothly.

## 4. MAINTENANCE, SUBCLASS MODELS AND ATTACHMENTS

### 4-1. How to connect the metal fittings of the belt



Tighten connecting screws ① of the belt so that the screws protrude approximately 1.5 to 2 mm from the reverse side as the standard.



1. When assembling the belt to the pulley and rotating the motor after closing the side cover, confirm that the side cover does not interfere with the metal fitting of the belt.
2. Take care not to allow the belt to be clogged with oil when assembling it.

### 4-2. Subclass models

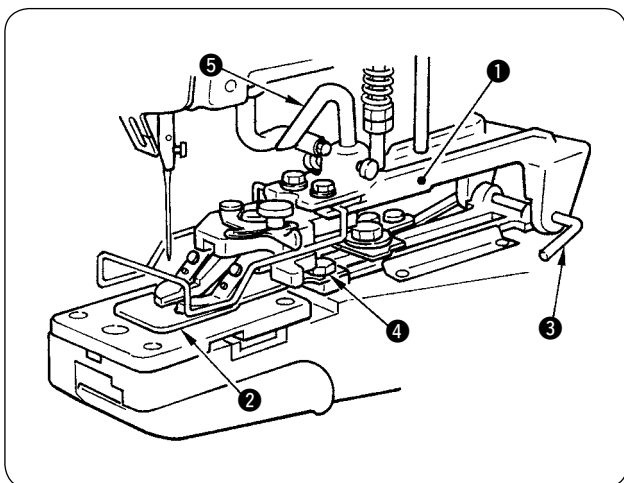
| MB-1373            | MB-1373-11         |
|--------------------|--------------------|
| 8, 16, 32 stitches | 8, 16, 32 stitches |
|                    |                    |

### 4-3. Attachments



#### WARNING :

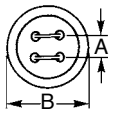
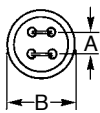
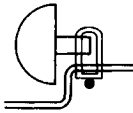

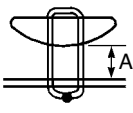
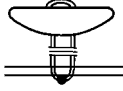
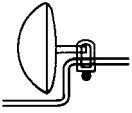
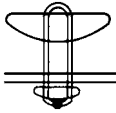

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- 1) In order to install the attachment on the machine, you may have to remove button clamp mechanism ① or feed plate ②.
- 2) Detach the snap ring from button clamp installing stud ③, and you will be able to remove button clamp mechanism assembly ①. Remove screw ④, and you can remove feed plate ②.



The only feature that makes the difference between the attachment of MB-373NS and that of MB-377NS is button clamp lifting hook ⑤.

| Use                | Flat buttons  |   | Shank buttons   |   | Snaps   |
|--------------------|---|---|---|---|---|
|                    | Large-size  | Medium-size   | General   |   |   |
| MB-1373<br>MB-1377 | Z201  | Z202  | Z033  |   | Z037  |
| Schematic drawing  |  |  |               |   |  |
| Remarks            | Button size :<br>A : 3 to 6.5 mm<br>B : $\varnothing$ 20 to $\varnothing$ 28 mm     | Button size :<br>A : 3 to 5 mm<br>B : $\varnothing$ 12 to $\varnothing$ 20 mm       | Button diameter : Less than 16 mm<br>Shank size :<br>Thickness : 6 to 5 mm<br>Width : 3 to 2.5 mm |   | Snap size :<br>A : 8 mm   |
| Use                | Wrapped-around buttons  |   | Metal buttons   | Stay button   | Labels  |
|                    | First process   | Second process  | General   |   |   |
| MB-1373<br>MB-1377 | Z041  | Z035  | Z038  | Z039  | Z044  |
| Schematic drawing  |  |  |                |  |  |
| Remarks            | Thread shank height<br>A : 5.5 mm   |   |   | Common to<br>Z041   | Stitch width :<br>3 to 6.5 mm   |

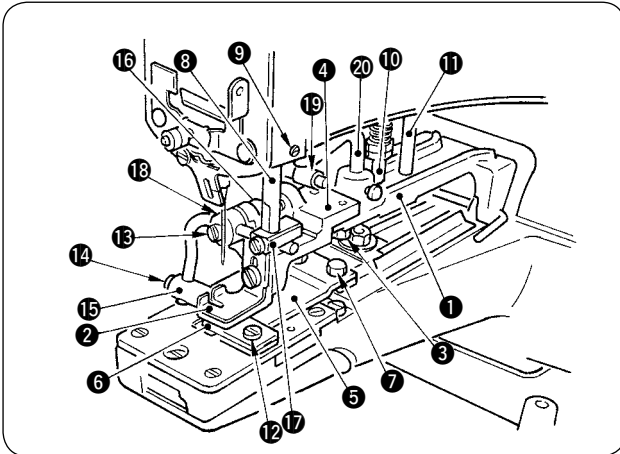


## (1) Attachments for shank buttons (Pearl buttons) (Z033)



### 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.



### (INSTALLATION)

Remove both the button clamp mechanism assembly and the feed plate from the machine and install attachment ① in place. Loosen screws ③ and adjust button clamp bracket ④ to permit the needle to come down in the middle of the needle slot in shank button adaptor ②. Attach button clamp feed plate ⑤ using screws ⑦ in the way that it permits the needle to come down in the middle of the needle slot in feed plate ⑥. Insert the top end of button clamp stud ⑧ into an opening in the jaw of the machine arm and fasten it by screw ⑨.

### (ADJUSTMENT AND OPERATION)

- 1) Loosen screw ⑫, let feed plate ⑥ recede 0.5 to 1.0 mm from the left end of button clamp jaw lever ② and retighten screw ⑫.
- 2) Set a button in place, loosen screws ⑬ and ⑭ and align shank button holding clamp ⑮ with the center of the button.
- 3) Shank button holding clamp ⑮ must give proper pressure to the button so that the button stays steadily in position while being sewn. Loosen a setscrew in thrust collar ⑯ and rotate the thrust collar until shank button holding clamp ⑮ provides proper pressure.
- 4) You may fix button clamp block ⑰ in a convenient position for operation.



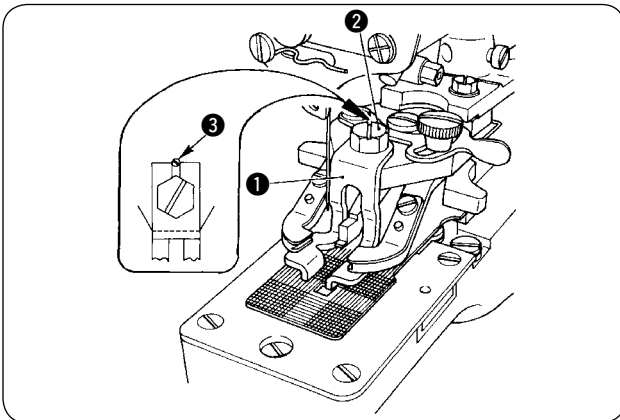
1. When you fix the thrust collar, ensure that button clamp rotating shaft ⑱ does not play axially in its bracket.
2. Adjust lifting hook ⑳ and stopper pin ㉑ so that L-shaped lifting rod roller ㉒ does not come in contact with button clamp bracket ④.

## (2) Attachment for the first process of wrapped-around buttons (Z041)



### 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.



### (INSTALLATION)

Attach wrapped-around button foot ① to the ordinary button clamp jaw levers using screw ② and guide pin screw ③.

Align foot ① with the jaw levers so that they permit a button to rest in the middle.

### (ADJUSTMENT AND OPERATION)

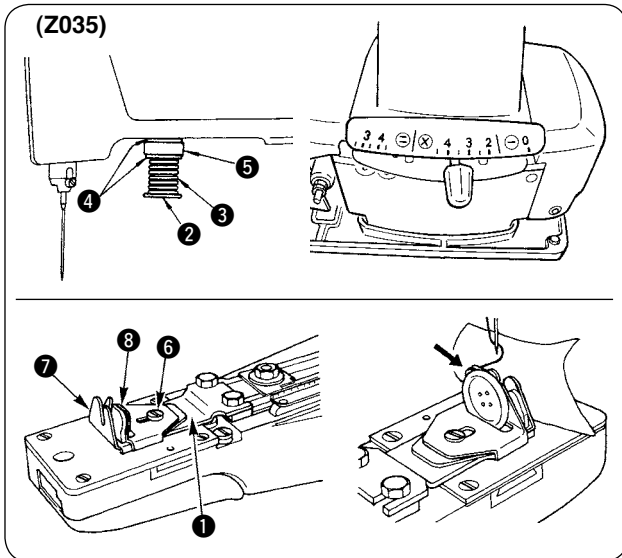
Adjustment and operation are almost same as those for the flat buttons, but you must adjust the thread pull-off lever to provide more amount of thread in order to make the thread loose below the button for thread shank formation. (refer to "3-2. Adjustment of the thread pull-off lever", p.4)

### (3) Attachment for the second process of wrapped-around buttons (Z035)



**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.



**(INSTALLATION)**

Remove the button clamp mechanism assembly, button clamp pressure adjusting bar and feed plate from the machine and install attachment for the second process of wrapped-around buttons ①. When you install a Z035 attachment, you must remove also the L-shaped lifting rod.

Insert moving knife push-back spring ③, washer ④, cushion ⑤ and washer ④ in spring guide shaft ② in this order. Make certain that the stop-motion mechanism has completely engaged, and install the attachment assembly in place in the way that cushion ⑤ comes in close contact with the surface of the machine arm without play.

**(ADJUSTMENT AND OPERATION)**

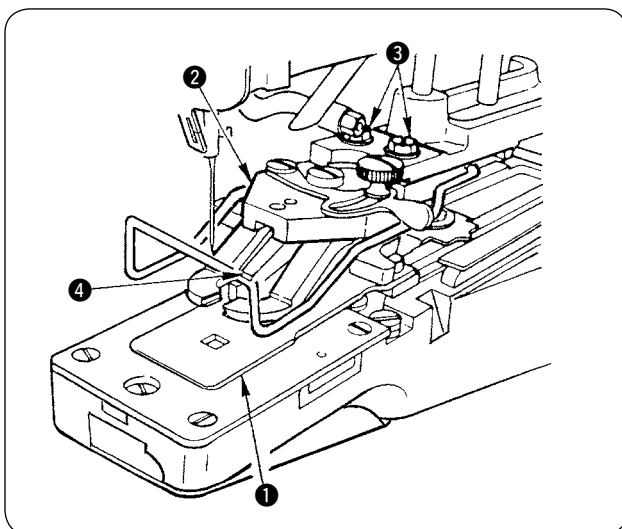
- 1) Loosen screw ⑥ and adjust the thread shank length by moving guide (large) ⑦ and guide (small) ⑧ in line with the point of needle entry.
- 2) Set a button (tilt it slightly for easy insertion) and pass the thread as the arrow shows.
- 3) Set the lengthwise feed to "0".

### (4) Attachment for snaps (Z037)



**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.



**(INSTALLATION)**

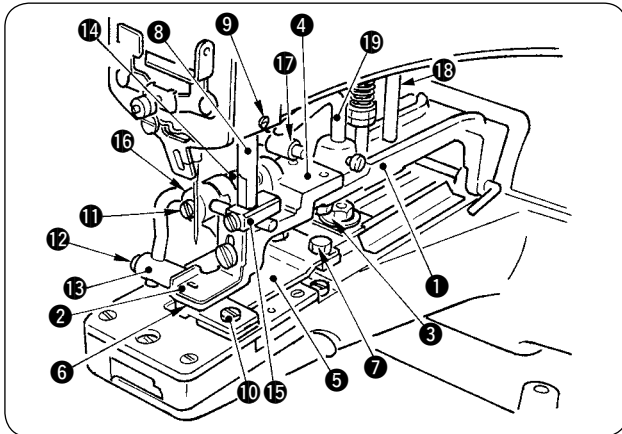
Remove the button clamp mechanism assembly and the feed plate. Set both the crosswise feed and lengthwise feed graduated plates to "4 mm". Install snap clamp feed plate ① in the way that the needle drops evenly at four corners of its square opening. Install snap attachment assembly ② on the machine, place a snap on the snap clamp jaw levers and make sure that the needle drops accurately in each hole in the snap. If necessary, loosen hex head screws ③ and adjust the position accurately. Lastly, make sure that the concave section on the bottom face of snap clamp slide guide ④ accurately matches the convex section on snap clamp feed plate ①.

## (5) Attachment for metal buttons (Z038)



### 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.



### (INSTALLATION)

Remove both the button clamp mechanism assembly and the feed plate from the machine and install attachment ① in place. Loosen screws ③ and adjust button clamp bracket ④ to permit the needle to come down in the middle of the needle slot in metal button adaptor ②. Attach button clamp feed plate ⑤ using screws ⑦ in the way that it permits the needle to come down in the middle of the needle slot in feed plate ⑥. Insert the top end of button clamp stud ⑧ into an opening in the jaw of the machine arm and fasten it by screw ⑨.

### (ADJUSTMENT AND OPERATION)

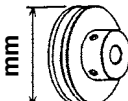
- 1) Loosen screw ⑩, let feed plate ⑥ recede 1.0 to 1.5 mm from the left end of button clamp jaw lever ② and retighten screw ⑩.
- 2) Set a button in place, loosen screws ⑪ and ⑫ and align metal button holding clamp ⑬ with the center of the button.
- 3) Metal button holding clamp ⑬ must give proper pressure to the button so that the button stays steadily in position while being sewn. Loosen a setscrew in thrust collar ⑭ and rotate the thrust collar until metal button holding clamp ⑬ provides proper pressure.
- 4) You may fix button clamp block ⑮ in a convenient position for operation.



1. When you fix the thrust collar, ensure that button clamp rotating shaft ⑯ does not play axially in its bracket.
2. Adjust lifting hook ⑰ and stopper pin ⑱ so that L-shaped lifting rod roller ⑲ does not come in contact with button clamp bracket ④.

## 4-4. Motor pulley and belt

- 1) For this machine a single-phase or 3-phase 200 watts (1/4 HP) induction motor is used.
- 2) Use a V belt.
- 3) The sewing speed depends on the diameter of the motor pulley as listed below ;

| Hz | sti/min | Motor pulley part No. | mm  |
|----|---------|-----------------------|---|
| 50 | 1,500   | 40038291              | ø 76  |
|    | 1,300   | 40038298              | ø 64.5  |
| 60 | 1,500   | 40038298              | ø 64.5  |
|    | 1,300   | 40042229              | ø 57  |

- ★ The pulley of 50Hz and 1,300 sti/min is in common with that of 60Hz and 1,500 sti/min.
- ★ The rotating direction of motor is counterclockwise when viewed from the motor pulley side. Be careful not to rotate in reverse direction.
- ★ When replacing the motor pulley and changing the sewing speed from 1,300 sti/min to 1,500 sti/min and vice versa, be sure to re-adjust the position of the stop-motion. (Refer to "3-14. Adjusting the position of the stop-motion", p.8.)

## 5. TROUBLES AND CORRECTIVE MEASURES

| TROUBLES   | CAUSES  | CORRECTIVE MEASURES   |
|--|---|---|
| 1. Thread breakage   | <ul style="list-style-type: none"> <li>① The yoke slide does not move in the correct way.</li> <li>② The tension lever has been improperly adjusted.</li> <li>③ The thread tension post No. 2 fails to release the thread at correct timing.</li> <li>④ Lifting amount of the button clamp jaw unit is excessive.</li> <li>⑤ The thread nipper catches the thread. The nipper has been improperly adjusted. (The clearance is too small.)</li> <li>⑥ The needle does not enter the center of the holes in the button.</li> <li>⑦ The needle is too thick for the diameter of the hole in the button.</li> </ul> | <ul style="list-style-type: none"> <li>○ Adjust the timing of forward, backward and sideways of the yoke slide.</li> <li>○ Properly adjust the tension lever.</li> <li>○ Make the thread release timing slightly earlier.</li> <li>○ Adjust the lifting amount of the button clamp jaw lever to 8 mm.</li> <li>○ Adjust the position of the nipper bar block.</li> <li>○ Adjust the button clamp jaw lever holder.</li> <li>○ Replace the needle by a thinner one.</li> </ul> |
| 2. The machine forms a seam after it has run for a while instead of forming it from the start of sewing. | <ul style="list-style-type: none"> <li>① The thread pull-off lever has been improperly adjusted.</li> <li>② Tension of the thread tension guide on the face plate is excessive.</li> </ul>  | <ul style="list-style-type: none"> <li>○ Adjust the thread tension guide on the face plate so that it provides a lower tension.</li> <li>○ Properly adjust the tension lever.</li> </ul>  |
| 3. Buttons are not sewn tightly  | <ul style="list-style-type: none"> <li>① The yoke slide does not move in the correct way.</li> <li>② The thread tension post No. 2 fails to release the thread at correct timing.</li> <li>③ The thread tension post No. 2 does not give sufficient tension.</li> <li>④ The needle does not enter the center of the holes in the button.</li> <li>⑤ The work pressing force is too high or too low.</li> </ul>  | <ul style="list-style-type: none"> <li>○ Adjust the timing of the motion of the yoke slide at each end.</li> <li>○ Make the thread release timing slightly later.</li> <li>○ Tighten the tension nut of tension post No. 2.</li> <li>○ Adjust the button clamp jaw lever holder.</li> <li>○ Adjust the work pressing force properly.</li> </ul>   |
| 4. The last back-tack stitch is poorly tensed.   | <ul style="list-style-type: none"> <li>① The tension lever has been improperly adjusted.</li> <li>② Timing of the knot-tying plate is incorrect.</li> <li>③ The nipper has been improperly adjusted. (The clearance is too large.)</li> </ul>   | <ul style="list-style-type: none"> <li>○ Properly adjust the tension lever.</li> <li>○ Advance the timing of the knot-tying plate. (Adjustment of the knot-tying notch)</li> <li>○ Adjust the nipper with the nipper bar block.</li> </ul>  |
| 5. The first stitch trails relatively long thread from the right side of the button.                     | The thread pull-off lever does not work properly.   | <ul style="list-style-type: none"> <li>○ Adjust the thread pull-off lever by the nipper bar block (rear).</li> </ul>  |
| 6. Thread trimming failure in the state of stop-motion   | <ul style="list-style-type: none"> <li>① The thread tension post No. 2 fails to release the thread at correct timing.</li> <li>② The needle hits the edge of the holes in the button.</li> <li>③ The thread nipper fails to press the thread.</li> <li>④ The work pressing force is too high.</li> </ul>  | <ul style="list-style-type: none"> <li>○ Make the thread release timing slightly later to give more tension to the stitches.</li> <li>○ Adjust the button clamp jaw lever holder.</li> <li>○ Adjust the nipper bar block.</li> <li>○ Adjust the work pressing force by the pressure adjusting nut.</li> </ul>   |
| 7. Thread trimming failure   | <ul style="list-style-type: none"> <li>① The moving knife does not separate the thread on the fabric with its separation nail.</li> <li>② The needle does not enter the center of the holes in the button.</li> <li>③ The last stitch skips.</li> <li>④ The moving knife thread separation nail is too high or too low.</li> </ul>  | <ul style="list-style-type: none"> <li>○ Adjust the position of the moving knife.</li> <li>○ Adjust the button clamp jaw lever holders.</li> <li>○ Adjust the looper.</li> <li>○ Adjust the height of the moving knife thread separation nail.</li> </ul>   |
| 8. The needle thread is cut in two places on the wrong side of the fabric.                               | <ul style="list-style-type: none"> <li>① The moving knife is set in wrong place.</li> <li>② The moving knife thread separation nail is too high or too low.</li> </ul>  | <ul style="list-style-type: none"> <li>○ Adjust the position of the moving knife when the machine is in the stop-motion state.</li> <li>○ Adjust the height of the thread separation nail.</li> </ul>   |
| 9. Button trails too long thread after thread trimming.  | <ul style="list-style-type: none"> <li>① Timing of the moving knife motion is wrong.</li> <li>② Lifting amount of the button clamp jaw unit is excessive.</li> </ul>  | <ul style="list-style-type: none"> <li>○ Adjust the position of the moving knife when the machine is in the stop-motion state.</li> <li>○ Adjust the lifting amount of the button clamp jaw lever to 8 mm.</li> </ul>   |
| 10. Length of thread remaining, after thread trimming, on the wrong side of the material varies.         | <ul style="list-style-type: none"> <li>① Position of the moving knife is not correct.</li> <li>② Lifting amount of the button clamp jaw unit is excessive.</li> </ul>   | <ul style="list-style-type: none"> <li>○ Adjust the position of the moving knife when the machine completes stop-motion. (10 to 11 mm)</li> <li>○ Adjust the lifting amount of the button clamp jaw lever to 8 mm.</li> </ul>   |