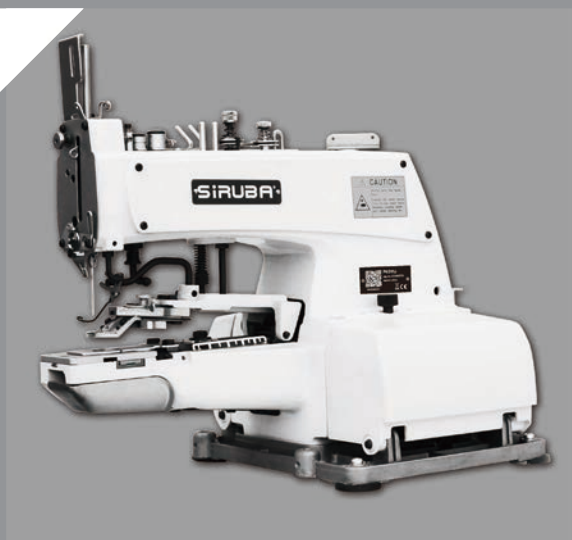


SIRUBA

使用説明書

INSTRUCTIONS BOOK

■PK511J



CE EAC

IMPORTANT SAFETY INSTRUCTIONS

Putting sewing systems into operation is prohibited until it has been ascertained that the sewing systems in which these sewing machines will be built into, have conformed with the safety regulations in your country. Technical service for those sewing systems is also prohibited.

1. Observe the basic safety measures, including, but not limited to the following ones, whenever you use the machine.
2. Read all the instructions, including, but not limited to this Instruction Manual before you use the machine. In addition, keep this Instruction Manual so that you may read it at anytime when necessary.
3. Use the machine after it has been ascertained that it conforms with safety rules/standards valid in your country.
4. All safety devices must be in position when the machine is ready for work or in operation.
The operation without the specified safety devices is not allowed.
5. This machine shall be operated by appropriately-trained operators.
6. For your personal protection, we recommend that you wear safety glasses.
7. For the following, turn off the power switch or disconnect the power plug of the machine from the receptacle.
 - 7-1 For threading needle(s), looper, spreader etc. and replacing bobbin.
 - 7-2 For replacing part(s) of needle, presser foot, throat plate, looper, spreader, feed dog, needle guard, folder, cloth guide etc.
 - 7-3 For repair work.
 - 7-4 When leaving the working place or when the working place is unattended.
 - 7-5 When using clutch motors without applying brake, it has to be waited until the motor stopped totally.
8. If you should allow oil, grease, etc. used with the machine and devices to come in contact with your eyes or skin or swallow any of such liquid by mistake, immediately wash the contacted areas and consult a medical doctor.
9. Tampering with the live parts and devices, regardless of whether the machine is powered, is prohibited.
10. Repair, remodeling and adjustment works must only be done by appropriately trained technicians or specially skilled personnel. Only spare parts designated by can be used for repairs.
11. General maintenance and inspection works have to be done by appropriately trained personnel.
12. Repair and maintenance works of electrical components shall be conducted by qualified electric technicians or under the audit and guidance of specially skilled personnel.
Whenever you find a failure of any of electrical components, immediately stop the machine.
13. Before making repair and maintenance works on the machine equipped with pneumatic parts such as an air cylinder, the air compressor has to be detached from the machine and the compressed air supply has to be cut off. Existing residual air pressure after disconnecting the air compressor from the machine has to be expelled. Exceptions to this are only adjustments and performance checks done by appropriately trained technicians or specially skilled personnel.
14. Periodically clean the machine throughout the period of use.
15. Grounding the machine is always necessary for the normal operation of the machine. The machine has to be operated in an environment that is free from strong noise sources such as high-frequency welder.
16. An appropriate power plug has to be attached to the machine by electric technicians. Power plug has to be connected to a grounded receptacle.
17. The machine is only allowed to be used for the purpose intended. Other used are not allowed.
18. Remodel or modify the machine in accordance with the safety rules/standards while taking all the effective safety measures. assumes no responsibility for damage caused by remodeling or modification of the machine.
19. Warning hints are marked with the two shown symbols.



Danger of injury to operator or service staff



Items requiring special attention

① →

② →

③ →

① • There is the possibility that slight to serious injury or death may be caused.
• There is the possibility that injury may be caused by touching moving part.

② • To perform sewing work with safety guard.
• To perform sewing work with safety cover.
• To perform sewing work with safety protection device.

③ • Turn OFF the power and perform "threading", "replacement of bobbin or needle", "cleaning", "adjustment" and "lubrication".

FOR SAFE OPERATION



1. To avoid personal injury, never put your fingers under the needle when you turn ON the power switch or operate the sewing machine.
2. To avoid personal injury, turn OFF the power switch when you tilt the machine head.
3. To prevent possible personal injury caused by being caught in the machine, keep your fingers, head and clothes away from the handwheel and the thread take-up while the sewing machine is in operation. In addition, place nothing around it.
4. Never operate the machine with the safety devices such as needle bar cover, finger guard, eye guard cover, etc. removed.
5. To avoid personal injury, be careful not to allow your fingers in the machine when tilting the machine head.



1. For the safety, never operate the sewing machine with the ground wire for the power supply removed.
2. Be sure to turn OFF the power switch in prior when connecting/disconnecting the power plug.
3. When thunders occurs, stop the work for the safety and disconnect the power plug.
4. When the sewing machine is suddenly moved from a cold place to a warm place, there is a case where dew condensation may occur. Turn ON the power after there is no worry of the drop of water.
5. To prevent fires, periodically draw out the power plug from the plug socket and clean the root of the pins and the space between pins.

CAUTION BEFORE OPERATION



WARNING :

To avoid malfunction and damage of the machine, confirm the following.

- Use the oil adaptable to the machine specifications.
- Clean the sewing machine thoroughly before using it for the first time.
- Remove all dust collected on the sewing machine during the transportation.
- Confirm that the voltage and phase are correct.
- Confirm that the power plug is properly connected.
- Never use the sewing machine in the state where the voltage type is different from the designated one.
- The direction of rotation of the sewing machine is clockwise as observed from the handwheel side. Be careful not to rotate it in reverse direction.
- Before applying power, release the stop-motion mechanism and turn by hand the needle driving pulley in order to ensure that the machine is in order.
- To install the machine, the frame support bar has to be firstly inserted into the table.
- When operating the sewing machine, turn ON the power switch after properly setting the head on the table.
- Operate the handwheel after the sewing machine has totally stopped.

CONTENTS

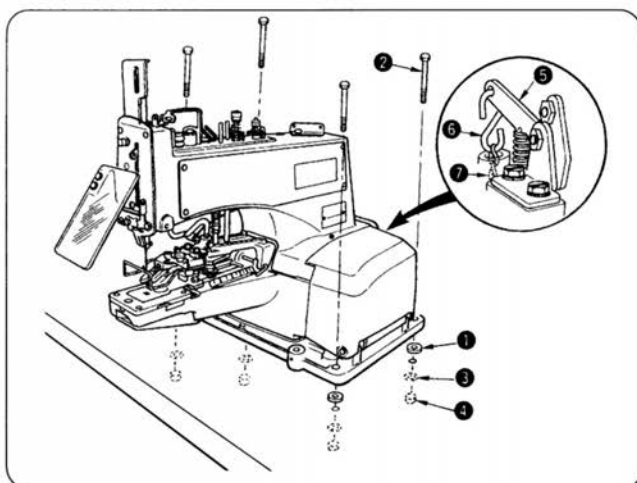
1. SPECIFICATIONS	05
2. PREPARATION OF THE SEWING MACHINE	05
2-1. Installation	05
2-2. Lubrication.....	06
2-3. Attaching the needle.....	06
2-4. Attaching the needle bar cover.....	07
2-5. Attaching the button tray assembly	07
2-6. Threading the machine.....	07
3. ADJUSTMENT OF THE SAWING MACHINE	08
3-1. Thread tension adjustment.....	08
3-2. Adjustment of the thread pull-off lever	08
3-3. Adjusting the tension lever	08
3-4. Adjusting the nipper	09
3-5. Adjusting the thread tension guide on the face plate.....	09
3-6. Needle-to-looper relation	09
3-7. Position of the needle guide	10
3-8. Height of the button clamp.....	10
3-9. Work pressing force	10
3-10. Adjustment of the button clamp stop lever.....	10
3-11. Timing of thread tension release.....	11
3-12. Setting for 2- or 4-hole buttons.....	11
3-13. Setting a number of stitches.....	12
3-14. Adjusting the position of the stop-motion.....	12
3-15. Automatic thread trimmer	13
(1) Adjusting the position of the moving knife.....	13
3-16. Clearance between the button clamp lifting lever and the adjusting screw	13
3-17. How to set the L-shaped lifting rod	13
3-18. Knot-tying mechanisms	14
(1) Adjusting the knot-tying connecting plate.....	14
(2) Adjusting the knot-tying arm stopper.....	14
(3) Adjusting the knot-tying notch	14
(4) Changeover of with/without knot-tying	15
4. MAINTENANCE, SUBCLASS MODELS AND ATTACHMENTS	15
4-1. How to connect the metal fittings of the belt	15
4-2. Subclass models	15
4-3. Attachments.....	16
(1) Attachments for shank buttons (Pearl buttons) (Z033)	17
(2) Attachment for the first process of wrapped-around buttons (Z041).....	17
(3) Attachment for the second process of wrapped-around buttons (Z035)	18
(4) Attachment for snaps (Z037).....	18
(5) Attachment for metal buttons (Z038).....	19
4-4. Motor pulley and belt.....	19
5. TROUBLES AND CORRECTIVE MEASURES	20

1. SPECIFICATIONS

	PK511J-N	PK511J-NS
Sewing speed	Normal 1,300 rpm (Max. 1,500 rpm)	
Number of stitches	8, 16 and 32 stitches	
Feed amount	Lateral feed 2.5 to 6.5mm	Lateral feed 2.5 to 6.5mm
	Longitudinal feed 0, 2.5 to 4.5mm	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	New Defrix Oil No. 1	
Noise	Workplace-related noise at sewing speed $n = 1,500 \text{ min}^{-1}$: $L_{pa} \leq 84 \text{ dB(A)}$ Noise measurement according to DIN 45635-48-B-1.	
Differences	8.16 . Needle bar tacking	8.15.16 . Needle bar tacking

2. PREPARATION OF THE SEWING MACHINE

2-1. Installation



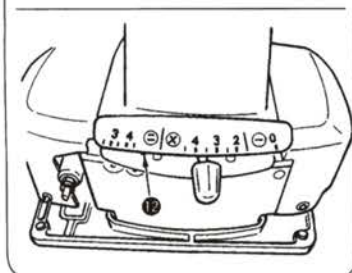
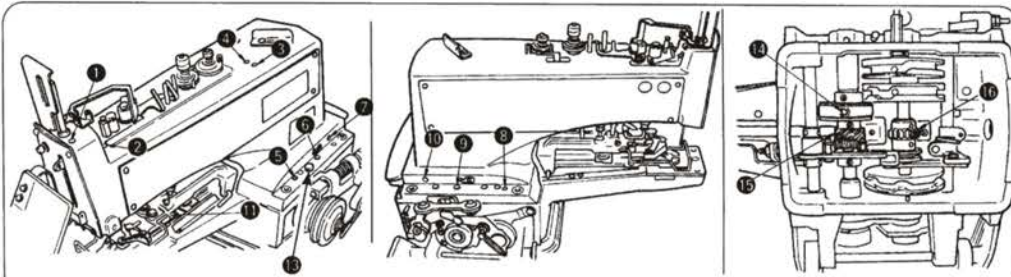
Put rubber cushion ① on the table, place the machine head on the rubber cushion and fix it to the table using screws ②, plain washers ③ and nuts ④. Attach "S" chain hook ⑥ and chain ⑦ to stop motion trip lever ⑤.

2-2. Lubrication

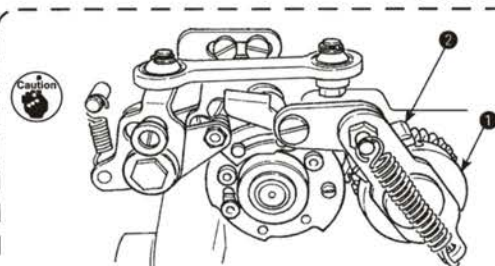


WARNING :

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 New Defrix Oil No. 1 to the portions shown by the red marks ① to ⑫ (⑦ : PK511J-NS). (Apply approximately 1 cc of oil to the respective lubricating places one to two times a week.)
- 2) Loosen connecting screw ⑬, tilt the machine head backward and apply grease (designated grease) to crossed helical gear ⑭ and worm gear ⑮.
- 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 ⑯.



[Caution at the time of lubricating]

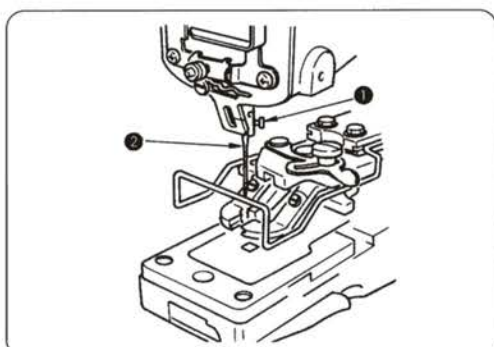
1. Take care not to allow speed slowing friction wheel ① and friction plate ② to be clogged with oil to prevent them from the deterioration of retardation performance. In addition, when the components are clogged with oil, wipe the oil from them.
2. Take care not to allow the machine belt to be clogged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

2-3. Attaching the needle



WARNING :

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.



★ Use a standard needle of TQx1 #16.

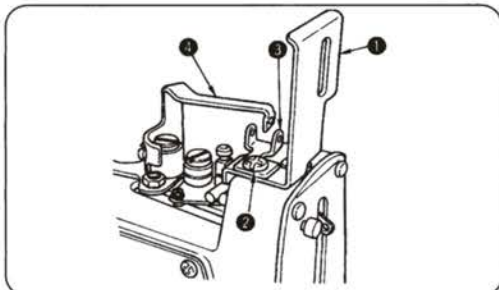
Loosen setscrew ① and hold needle ② with the long groove facing toward you. Then fully insert it into the hole in the needle bar, and tighten setscrew ①.

2-4. Attaching the needle bar cover



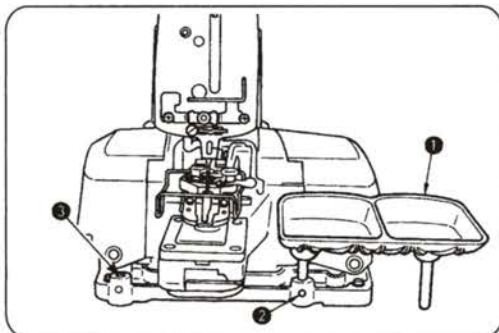
WARNING :

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



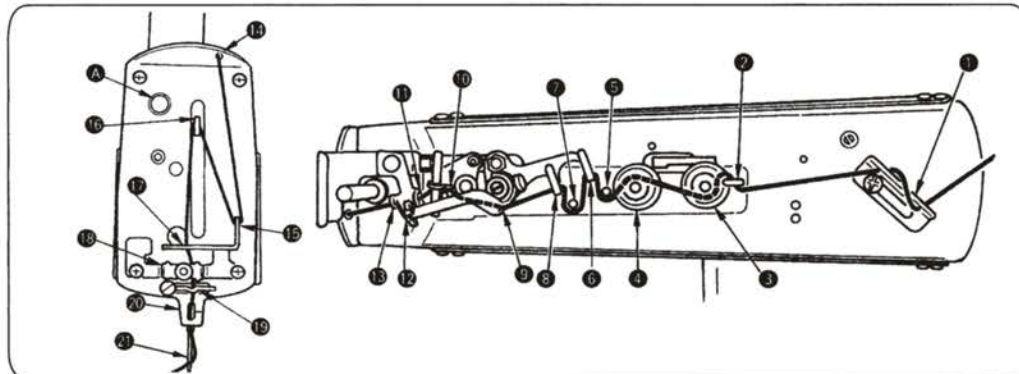
Insert the posts of button tray ① in hole on the right of the machine sub-base and tighten each setscrew ②. If it is difficult for the operator to pick up the buttons on the right side, change it to hole ③ on the left side.

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.

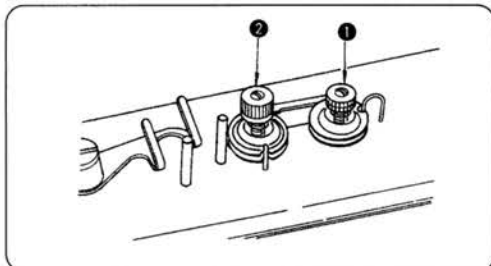


Thread the machine head in the order of ① to ② as shown in the illustration given above. Then, pass the thread through the needle eye from the front for approximately 60 to 70 mm as you depress nipper releasing knurled thumb nut ③.

* Standard needle is TQ X 1 #16.

3. ADJUSTMENT OF THE SAWING MACHINE

3-1. Thread tension adjustment



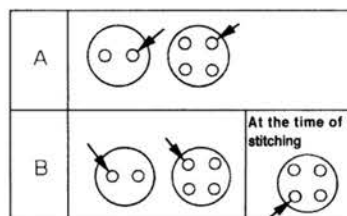
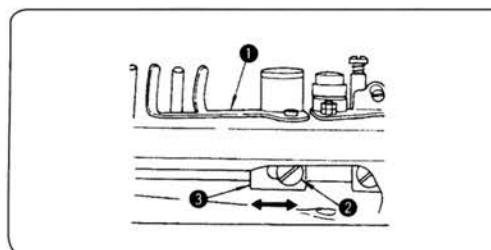
Tension post No. 1 ❶ is used to adjust the thread tension to sew on the button and a relatively low tension will be enough. Tension post No. 2 ❷ is used to adjust the thread tension applied to the root of the button sewing stitches. This tension must be determined according to the type of thread, fabric 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.



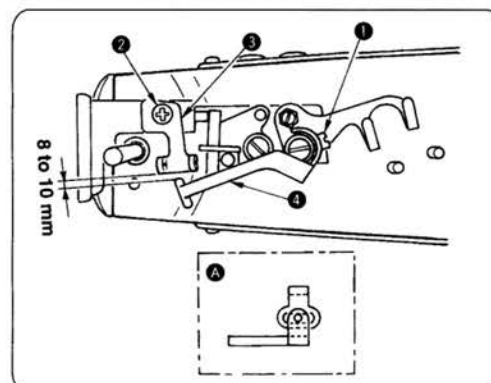
To adjust the thread pull-off lever ❶, insert a screwdriver through an opening in the machine arm side cover (left), loosen screw ❷ and adjust the position of nipper bar block (rear) ❸ to the left or the right. If the end of thread is drawn from arrow hole A in the button after sewing, change the position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



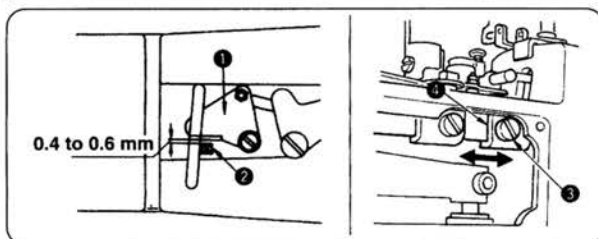
If the thread paths do not coincide with each other, loosen screw ❷ in the tension thread guide and adjust it properly.

3-4. Adjusting the nipper



WARNING :

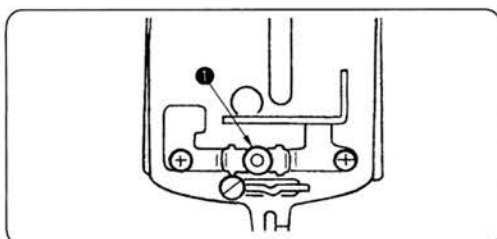
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



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



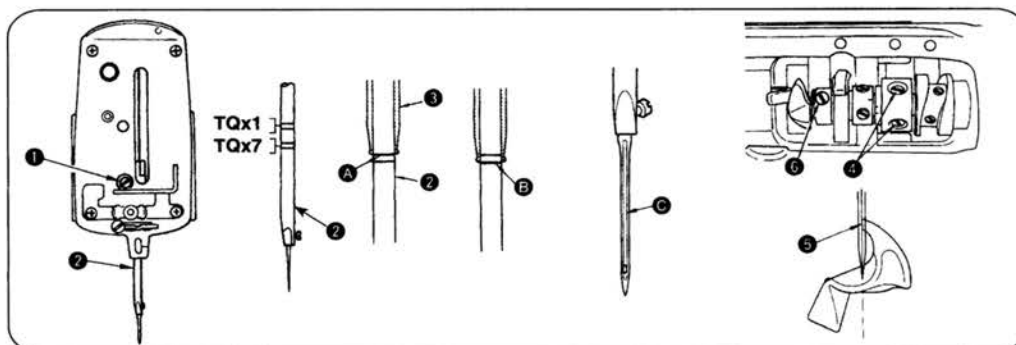
If the formation of seams at the start of sewing is failed and the seams are formed on the way even when the thread pull-off lever is adjusted, turn thumb nut ① (double nut) to decrease the thread tension.

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 ③ with the bottom end face of needle bar bushing (lower) ④ and tighten screw ①. At this time, tighten the screw so that groove ⑤ 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.

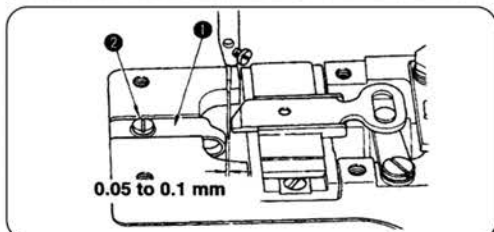
5) Loosen screws ⑥ and provide a 0.01 to 0.1 mm clearance between the looper and the needle. Tighten screws ⑥.

3-7. Position of the needle guide



WARNING :

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.



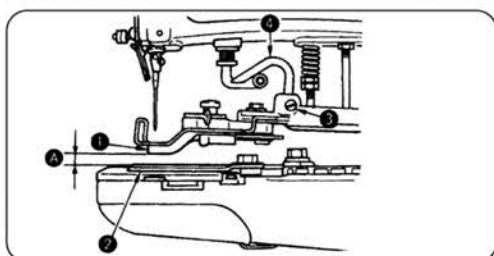
Loosen screw ② and provide a 0.05 to 0.1 mm clearance between the needle guide ① and the needle by moving the needle guide ① to the left or the right when the needle is in the lowest position.

3-8. Height of the button clamp



WARNING :

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.



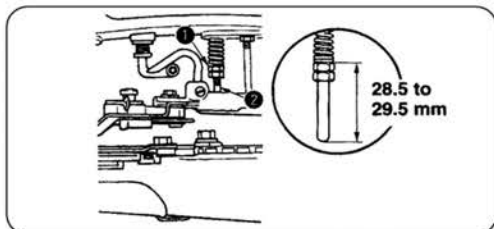
- 1) The standard clearance A between the rear side of the bottom face of button clamp jaw lever ① and the top surface of feed plate ② is 8 mm at the position where the machine has stopped after sewing.
- 2) To adjust the height of the button clamp unit, loosen screw ③ in the button clamp lifting hook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

3-9. Work pressing force



WARNING :

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.



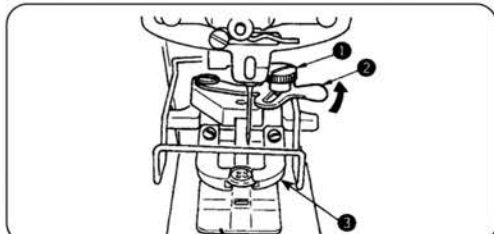
The standard work pressing force is by providing a 28.5 to 29.5 mm between the top end of nut ① and the bottom end of pressure adjusting bar ②.
Turn nut ① to adjust it.

3-10. Adjustment of the button clamp stop lever



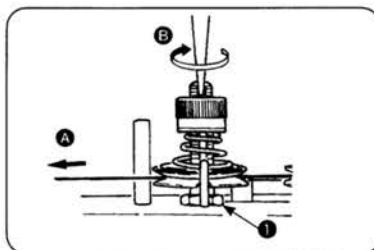
WARNING :

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.

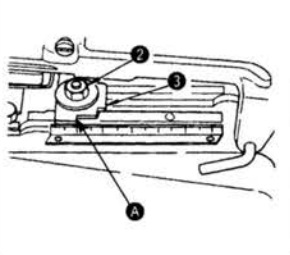
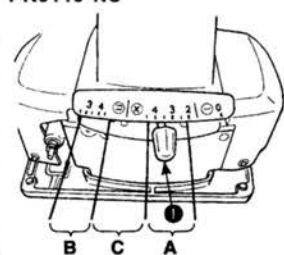
3-12. Setting for 2- or 4-hole buttons



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.

PK511J-NS



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.12.).

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

[In case of PK511J-N]

★ 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 PK511J-NS]

★ 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

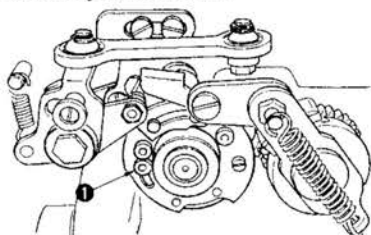


WARNING :

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.

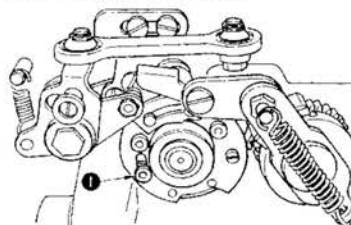
To change the number of stitches, open the left-hand side cover and change the number of stitches using stitch number adjusting screw ❶ and stitch number adjusting lever ❷ (optional).

★ How to adjust 8 stitches



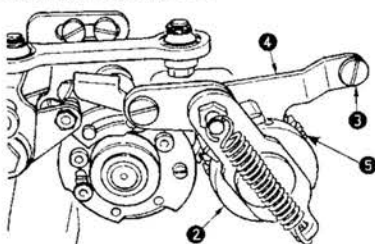
To make 8 stitches, loosen stitch number adjusting screw ❶ and fix it to the position as shown in the illustration.

★ How to adjust 16 stitches



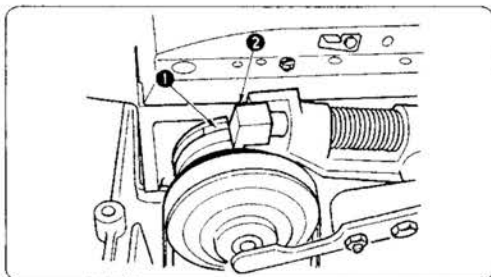
When stitch number adjusting screw ❶ being set for "8 stitches" has arrived at the left end, loosen stitch number adjusting screw ❶ and fix it to the position as shown in the illustration.

★ 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



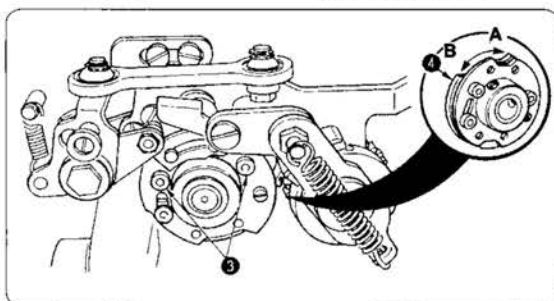
Adjust so that claw ❶ of the stop-motion cam comes in contact with stop-motion hook ❷ when the sewing machine completes the sewing and stops.



When replacing the motor pulley and changing the sewing speed from 1,300 rpm to 1,500 rpm, 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.



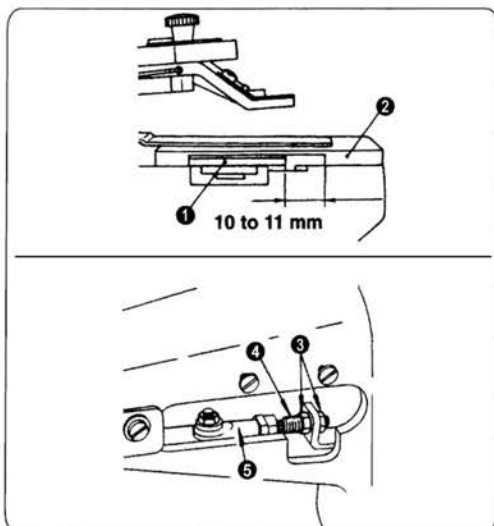
3-15. Automatic thread trimmer

(1) Adjusting the position of the moving knife



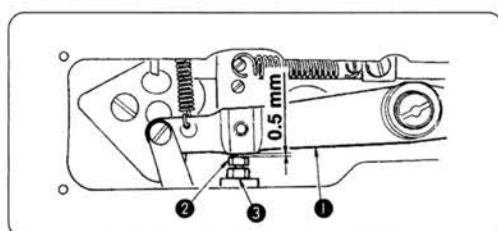
WARNING :

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.



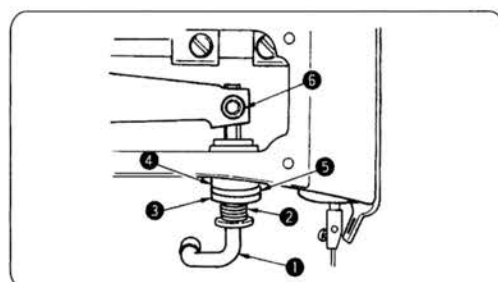
When the presser has completely lifted at the stop-motion position (refer to "3-14. Adjusting the position of the stop-motion", p.12), it is the standard that the clearance between thread trimming connecting plate (front) ① and the end face of the slit of throat plate ② is 10 to 11 mm. To adjust the aforementioned clearance, tilt the machine head, remove the oil shield, loosen two nuts ③ and move connecting screw ④ back or forth. When you tighten nuts ③, ensure that joint ⑤ stays in the horizontal position.

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.12) 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.12) and set the L-shaped lifting rod without a play. Then tighten it with screw ⑥.

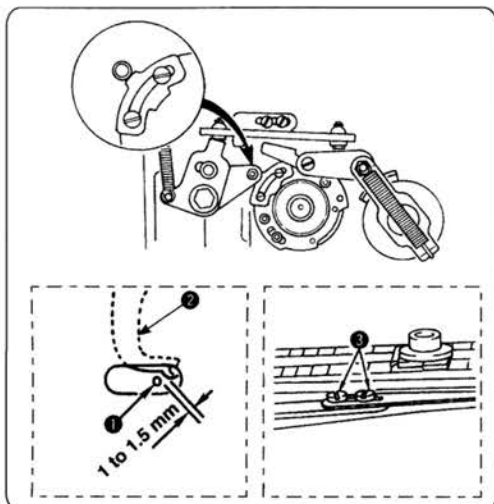
3-18. Knot-tying mechanisms



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.

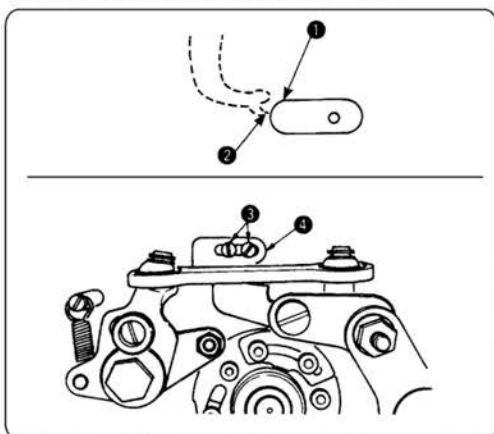
(1) Adjusting the knot-tying connecting plate



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.

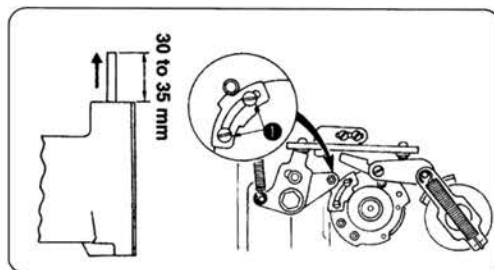
(After the adjustment, ascertain that the needle does not come in contact with the knot-tying plate.)

(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 ❶ 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

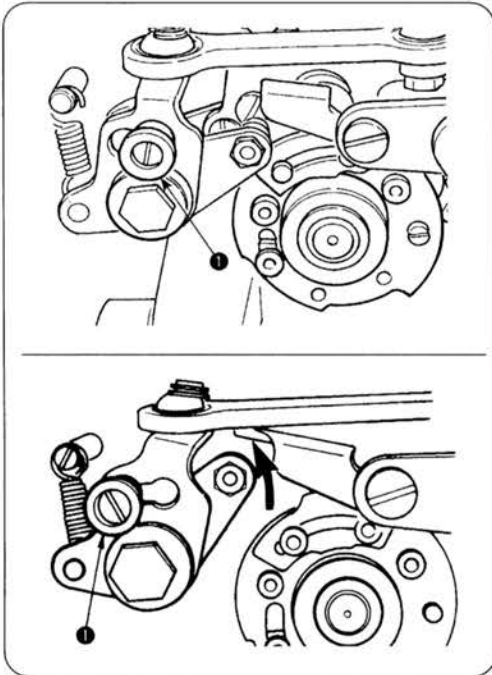


Loosen screws ❶ and adjust so that the roller of the knot-tying arm comes in contact with the knot-tying notch when the needle bar goes up at the fourteenth stitch as high as 30 to 35 mm (40 to 45 mm when a TQ x 7 needle is used) above the needle bar upper bushing.



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

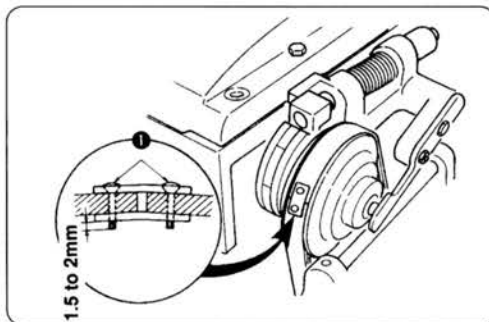


To make "with knot-tying", pull knot-tying changeover knob ❶ toward the front and place it to the position in the figure.

To make "without knot-tying", pull knot-tying change-over knob ❶ toward the front and place it to the position in the figure.

4. MAINTENANCE, SUBCLASS MODELS AND ATTACHMENTS

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



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

- Caution**

 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

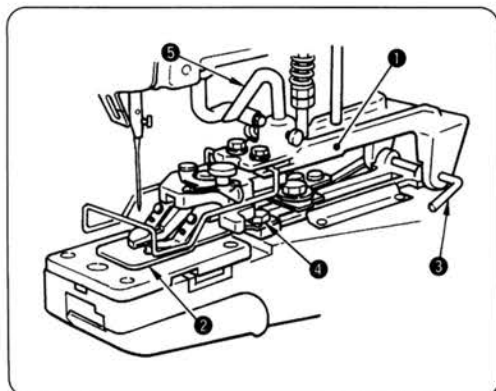
MB-1373	MB-1373-11
8, 16, 32 stitches	8, 16, 32 stitches

4-3. Attachments



WARNING :



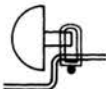

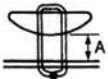




To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



- 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 PK511J-N and that of PK511J-NS is button clamp lifting hook ⑤.

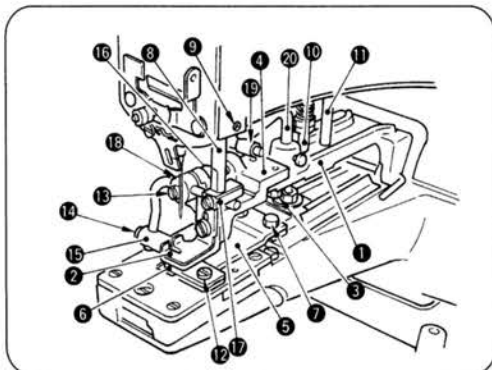
Use	Flat buttons		Shank buttons		Snaps
	Large-size	Medium-size	General		
PK511J-N PK511J-NS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Schematic drawing					
Remarks	Button size : A : 3 to 6.5 mm B : ø20 to ø28 mm	Button size : A : 3 to 5 mm B : ø12 to ø20 mm	Button diameter : Less than 16 mm Shank size : Thickness : 6 to 5 mm Width : 3 to 2.5 mm		Snap size : A : 8 mm
Use	Wrapped-around buttons		Metal buttons	Stay button	Labels
	First process	Second process	General		
PK511J-N PK511J-NS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Schematic drawing					
Remarks	Thread shank height A : 5.5 mm			Common to Z041	Stitch width : 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.



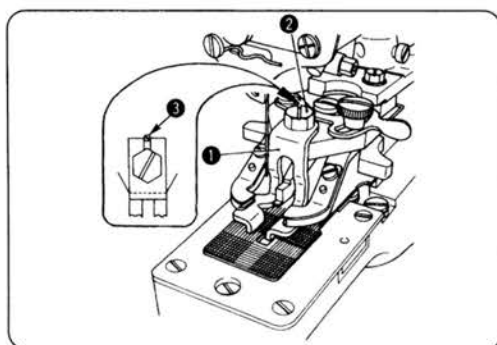
1. When you fix the thrust collar, ensure that button clamp rotating shaft 18 does not play axially in its bracket.
2. Adjust lifting hook 20 and stopper pin 11 so that L-shaped lifting rod roller 19 does not come in contact with button clamp bracket 4.

(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.8)

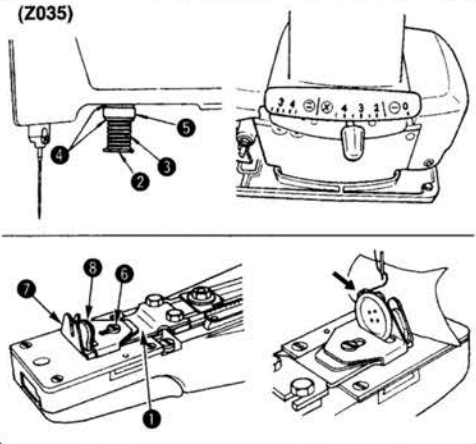
(3) Attachment for the second process of wrapped-around buttons (Z035)



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.

(Z035)



(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 ⑥ 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)

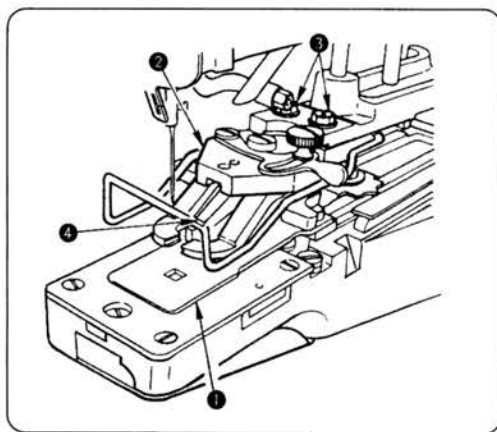
- 1) Loosen screw ⑥ and adjust the thread shank length by moving guide (large) ⑦ and guide (small) ⑧ in line with the point of needle entry.
- 2) Set a button (tilt it slightly for easy insertion) and pass the thread as the arrow shows.
- 3) Set the lengthwise feed to "0".

(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)

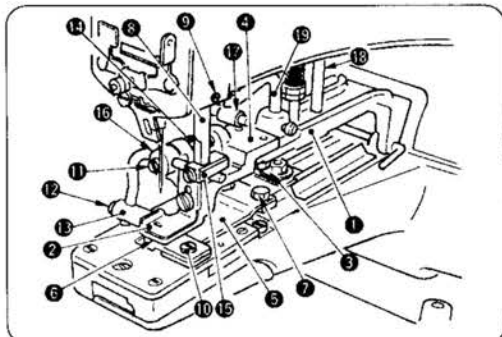
Remove the button clamp mechanism assembly and the feed plate. Set both the crosswise feed and lengthwise feed graduated plates to "4 mm". Install snap clamp feed plate ① in the way that the needle drops evenly at four corners of its square opening. Install snap attachment assembly ② on the machine, 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 ⑮ does not play axially in its bracket.
2. Adjust lifting hook ⑯ and stopper pin ⑰ so that L-shaped lifting rod roller ⑱ 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	rpm	Motor pulley part No.	mm 
50	1500	40038291	ø 76
	1300	40038298	ø 64.5
60	1500	40038298	ø 64.5
	1300	40042229	ø 57

- ★ The pulley of 50Hz and 1,300 rpm is in common with that of 60Hz and 1,500 rpm.
- ★ 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 rpm to 1,500 rpm and vice versa, be sure to re-adjust the position of the stop-motion. (Refer to "Adjusting the position of the stop-motion", P.12.)

5. TROUBLES AND CORRECTIVE MEASURES

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

重要安全事项

此缝纫机在有的国家（设置场所）由于该国的安全规定而被禁止使用。同时，技术服务也同样被禁止。

1. 使用此缝纫机时，必须遵守包括如下项目的基本安全措施。
2. 使用此缝纫机之前，请阅读本使用说明书在内的所有指示文件。同时应将此使用说明书妥善保管，以便能够随时查阅。
3. 此缝纫机应与贵国的有关安全规定一起使用。
4. 使用此缝纫机和缝纫机动作中，所有的安全装置应安装到规定的位置。没有安装规定的安全装置的缝纫机禁止使用。
5. 此缝纫机应由接受过培训的操作人员来操作。
6. 使用缝纫机时，建议戴安全防护眼镜。
7. 发生下列情况时，应立即关掉电源开关，或拔下电源线插头。
 - 7-1 机针、弯针、分离器等穿线和更换旋梭时。
 - 7-2 更换机针、压脚、针板、弯针、分离器、送布牙、护针器、支架、布导向器等时。
 - 7-3 修理时。
 - 7-4 工作场所无人了或离开工作场所时。
 - 7-5 使用离合马达时，请等待马达完全停止之后再行。
8. 缝纫机以及附属装置使用的机油、润滑脂等液体流入眼睛或沾到皮肤上时，或被误饮时，应立即清洗有关部分并去医院治疗。

9. 禁止用手触摸打开了缝纫机开关通电的零件或装置。
10. 有关缝纫机的修理、改造、调整应由受过专门训练的技术人员或专家来进行。
11. 一般的维修保养应由受过训练的人员来进行。
12. 有关缝纫机的电气方面的修理、维修应由有资格的电气技术人员或专家的监督和指导下进行。
13. 修理、保养有关空气、气缸等压缩空气的零件时，应切断空气压缩机供气源后再进行。如有残留压缩空气时，应放掉压缩空气。但，受过相当训练的技术人员或专家进行有关调整或确认动作时除外。
14. 缝纫机的使用期间应定期进行清扫。

15. 为了正常安全运转，应安装地线。同时应在不受高频焊接机等强噪音源影响的环境下使用。
16. 电源插头应用具有电气专门知识的人来安装。电源插头必须连接到接地插座上。

17. 缝纫机指定用途以外不能使用。
18. 对缝纫机的改造、变更应符合安全规格，并采取有效的安全措施。
另外，对于有关改造和变更，公司概不负责。

19. 本使用说明书上采用以下 2 个警告符号。



有损伤操作人员、维修人员的危险。



安全上需要特别加以注意的事项。

① →

② →



③ →

1

2

- ① 有发生中轻度伤害、重伤、死亡的危险。
 - 触摸了活动部分的话，有发生负伤的危險。
- ② 应安装安全防护器，然后再进行缝制。
 - 应安装安全护罩，然后再进行缝制。
 - 应安装保护装置，然后再进行缝制。
- ③ 应关掉电源之后，再进行「穿线」、「更换梭芯、机针」、「清扫」、「调整」、「加油」。

为了安全地使用缝纫机注意事项

 危险	<ol style="list-style-type: none"> 1. 接通电源开关时和缝纫机运转中，请不要把手指放到机针下附近。 2. 放倒缝纫机时，请关闭电源开关。 3. 缝纫机运转中，请不要把手指、头发、衣服靠近飞轮、挑线杆附近，也不要物品放到上面。 4. 请不要在卸下针杆护罩、手指防护罩、眼睛防护罩等安全装置的状态运转缝纫机。 5. 放倒缝纫机时，请注意不要夹到手指。
 注意	<ol style="list-style-type: none"> 1. 为了安全，在卸下电源地线的状态下，请不要运转缝纫机。 2. 拔插电源插头时，请一定先关闭电源开关。 3. 打雷时，为了安全请不要进行操作，同时请把电源插头拔下。 4. 从寒冷的地方移动到暖和的地方等时，因为会结露，所以请待水分完全干后再接通电源。 5. 为了防止火灾，请定期地从插座拔下电源插头，清扫插头的根部和插簧之间。

运转缝纫机前的注意事项



注意

为了避免机械的错误动作或损伤，请确认如下项目内容。

- 请使用适合缝纫机规格的机油。
- 第一次使用缝纫机之前，请把缝纫机打扫干净。
- 请把运送中积的灰尘打扫干净。
- 请确认是否设定的电压是否正确。
- 请确认电源插头是否正确地插好。
- 电源规格不同的情况时，请绝对不要使用缝纫机。
- 缝纫机的转动方向是，站在飞轮侧看为顺时针方向。请注意不要让缝纫机反向转动。
- 缝纫机出货时虽然完全地进行了调整，但是初次使用时，请卸下遮挡，用手稍稍转动之后再打开电源开关。
- 设置缝纫机时，请一定把机头支撑杆插进机台之后再进行设置。
- 运转缝纫机时，正确地设置到机台之后再打开电源开关。
- 待缝纫机确实停止之后再操作飞轮。

目录

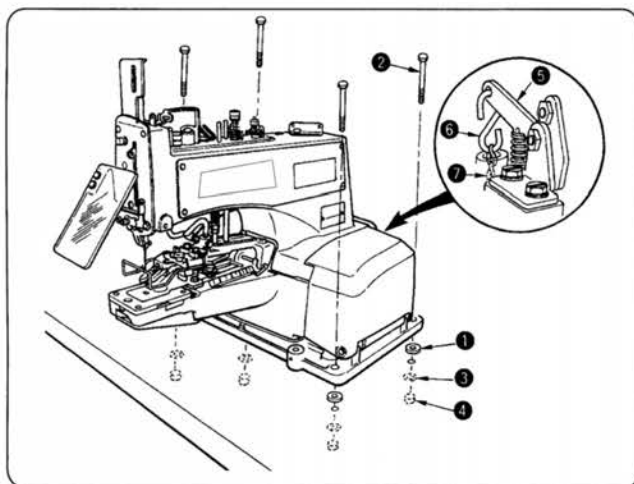
1. 规格	25
2. 缝纫机的准备	25
2-1. 缝纫机的安装	25
2-2. 加油	26
2-3. 机针的安装方法	26
2-4. 针杆护罩的安装方法	27
2-5. 钮扣盘的安装方法	27
2-6. 上线的穿线方法	27
3. 缝纫机的调整	28
3-1. 线张力	28
3-2. 线调整杆的调整	28
3-3. 紧线拨杆的调整	28
3-4. 拔针器的调整	29
3-5. 面板线张力器的调整	29
3-6. 机针和弯针的关系	29
3-7. 针导向器的位置	30
3-8. 抓扣装置的高度	30
3-9. 布压脚压力的调整	30
3-10. 抓脚打开拨杆的调整	30
3-11. 松线同步时间的调整	31
3-12. 2 眼和 4 眼扣的调整	31
3-13. 针数	32
3-14. 遮挡位置的调整	32
3-15. 切线装置	33
(1) 移动刀位置的调整	33
3-16. 提升拨杆和调整螺丝的间隙	33
3-17. L 型提升杆的安装方法	33
3-18. 结线装置	34
(1) 结线连接板的调整	34
(2) 结线曲轴挡块的调整	34
(3) 结线打结的调整	34
(4) 有无结线的变换	35
4. 维修、系列机型、附件	35
4-1. 皮带金属部件的连接方法	35
4-2. 系列机型	35
4-3. 附件	36
(1) 柄扣 (真珠扣) 钉扣附件 (Z033)	37
(2) 绕线钉扣第 1 工序 (钉扣工序) 用附件 (Z041)	37
(3) 绕线钉扣第 2 工序 (绕线工序) 用附件 (Z035)	38
(4) 钉子母扣附件 (Z037)	38
(5) 钉金属扣附件 (Z038)	39
4-4. 马达皮带轮和皮带	39
5. 故障的原因和对策	40

1. 规格

	PK511J-N	PK511J-NS
缝制速度	常用 1,300rpm (最高 1,500rpm)	
针数	8, 16, 32 针	
送布量	横向送布 2.5 ~ 6.5mm 竖向送布 0, 2.5 ~ 4.5mm	横向送布 2.5 ~ 6.5mm 竖向送布 0, 2.5 ~ 4.5mm
钮扣尺寸	10 ~ 28mm	
使用机针	TQx1 #16(#14 ~ #20) TQx7 #16(#14 ~ #20)	
机油	新 No.1 机油	
差异	8.16 针打结	8.15.16 针打结

2. 缝纫机的准备

2-1. 缝纫机的安装



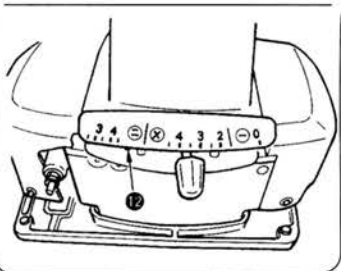
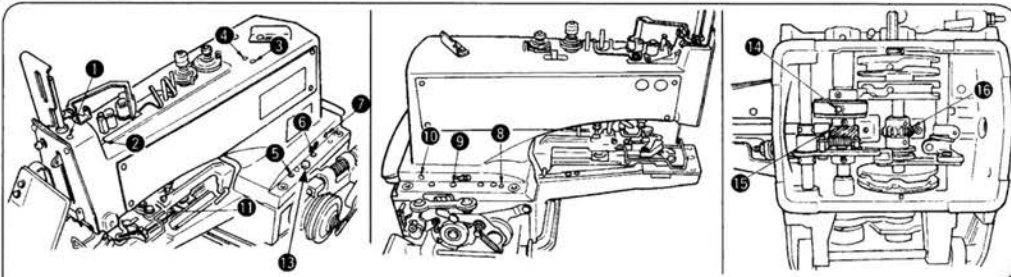
把防震胶垫 ① 放到机台上，然后把机头放到上面，用固定螺丝 ②、垫片 ③、螺母 ④ 固定好。
然后把 S 型挂钩 ⑥ 和铁链 ⑦ 安装到起动环 ⑤ 上。

2-2. 加油

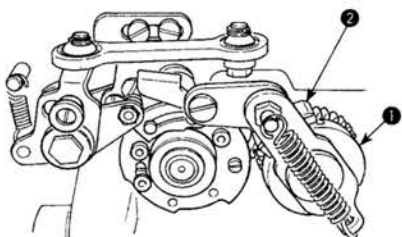


注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



- 1) 打开侧面护罩，向红色标记的部分 ① ~ ⑫ (⑦ 仅为 PK511J-NS 用) 加入 New Defrix No.1 机油。(每星期 1 ~ 2 次，每次大约加油 1cc)
- 2) 拧松安装螺丝 ⑬，放倒缝纫机，把润滑脂 (指定润滑脂) 加到螺丝齿轮 ⑮ 和蜗轮齿轮 ⑯ 上。
- 3) 每周检查 1 次机座安装台内的加油毛毡上面是否吸满油，油不够时请加油。同时请往曲轴部 ⑭ 上也加油。



〔加油时的注意事项〕

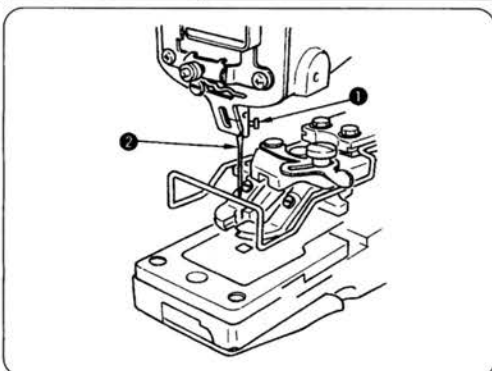
1. 预备停止摩擦轮 ① 和摩擦板 ② 具有防止减速性能降低的功能，因此请注意不要粘附油类。如果粘附到油时，请擦拭干净。
2. 为了防止缝纫机皮带劣化，请注意不要让缝纫机皮带粘附油类物质。

2-3. 机针的安装方法



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



★标准机针为使用 TQx1 #16。

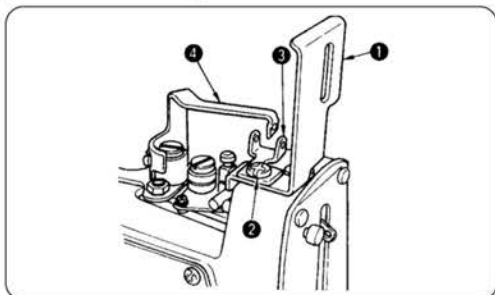
拧松固定螺丝 ①，把机针 ② 的长沟朝向面前，插进针杆的深处，然后拧紧固定螺丝 ①。

2-4. 针杆护罩的安装方法



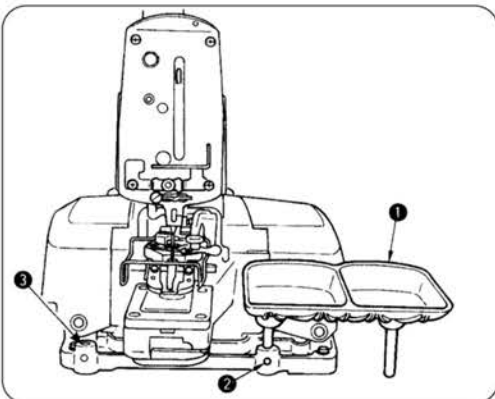
注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



- 1) 拧松固定螺丝 ②，卸下线调整导线器 ③。
- 2) 把针杆护罩 ① 安装到线调整导线器 ③ 的下面，启动时让紧线杆 ④ 移动导线调整导线器 ③ 的中心。
- 3) 用固定螺丝 ② 固定针杆罩。

2-5. 钮扣盘的安装方法



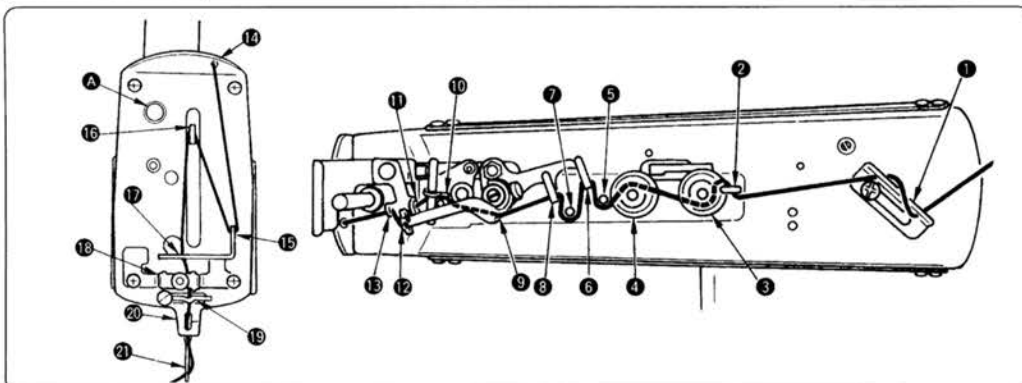
把钮扣盘 ① 插进机座前部的右侧的孔上，并把固定螺丝 ② 拧紧固定。如果，右侧抓钮扣不方便的话，请改装到左侧。如果安装在右侧不容易抓钮扣的话，请卸下后重新安装到左侧的孔 ③。

2-6. 上线的穿线方法



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。

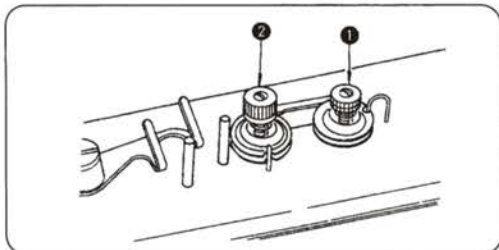


按照图的 ① ~ ⑫ 的顺序穿线，从针孔的前面向后防按压夹线器松线杆螺母 A，柄把线拉出约 60 ~ 70mm。

※ 标准机针是 TQ × 1 #16 缝纫机针。

3. 缝纫机的调整

3-1. 线张力



第一线张力螺母 ① 是调整钉扣强度用的，仅能调整微小的张力。

第二线张力调整螺母 ② 是调整背面的紧线程度的，其张力比第一线张力螺母 ① 强，根据使用的机线、布料、钮扣厚度等情况进行调整。

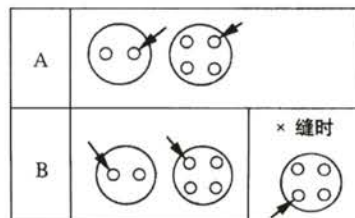
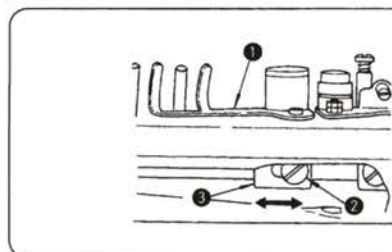
向右转动各线张力螺母之后，线张力变强，向左转动则张力变弱。

3-2. 线调整杆的调整



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



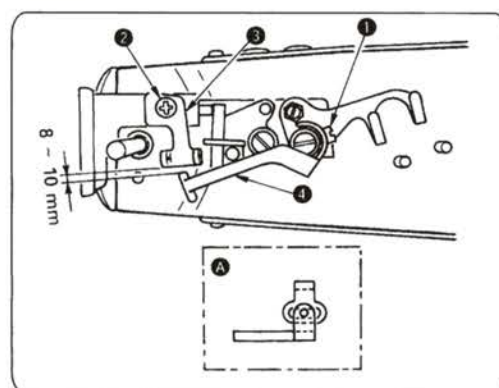
调整线调整杆 ① 时，请把螺丝刀插进左侧面板上的孔中，拧松固定螺丝 ②，然后左右移动调整杆的活动滑块 ③ 进行调整。缝制结束，如果线头从 A 部箭头的孔中露出时，请把线调整杆活动滑块 ③ 向左移动，如果线头从 B 部箭头的孔中露出时，请把滑块向右移动，不让线头露出来。

3-3. 紧线拨杆的调整



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



- 1) 在分离时，拧松固定螺丝 ①。
- 2) 把线张力导向器 ③ 的端面和紧线杆 ④ 的端面的距离调整为 8 ~ 10mm，然后拧紧固定螺丝 ①。



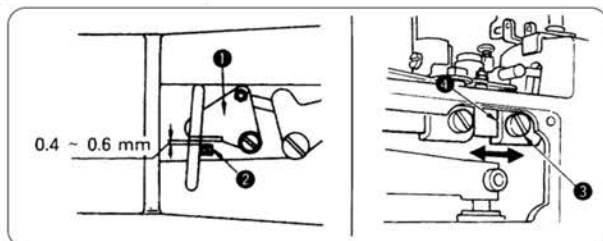
调整后，请确认启动时线道如图 A 所示在长孔的范围内。如果不正确时，请拧松线张力导线器固定螺丝 ②，进行调整。

3-4. 拔针器的调整



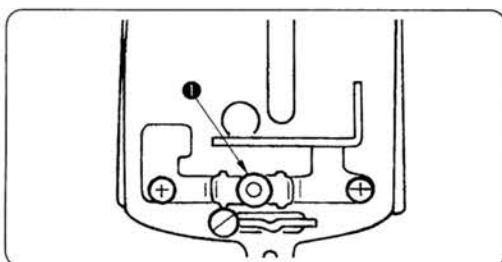
注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



- 1) 运转时，把拔针器①的方块②和拔针器①的间隙调整为 0.4 ~ 0.6mm，不让拔针器①压住机线。
- 2) 调整方法是，拧松固定螺丝③，左右移动拔针器活动滑块④。

3-5. 面板线张力器的调整



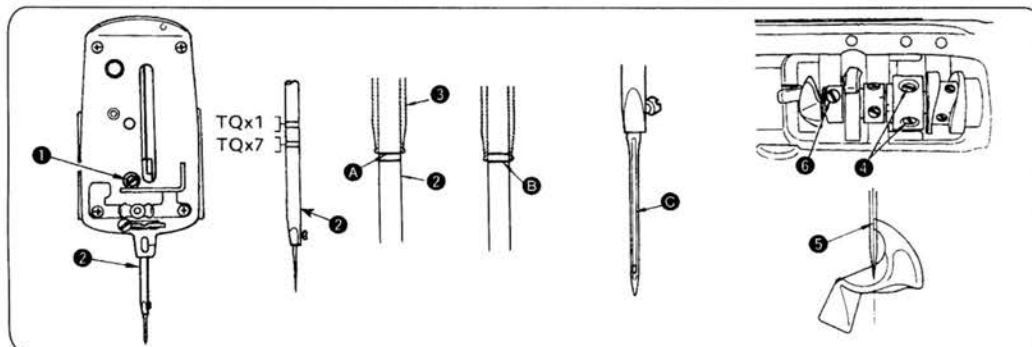
缝制开始不能形成缝迹，而是从中途形成缝迹，调整了线调节杆也不能纠正时，请转动旋钮螺母①(双螺母)，减弱线张力。

3-6. 机针和弯针的关系



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



★机针和弯针按如下方法进行调整。

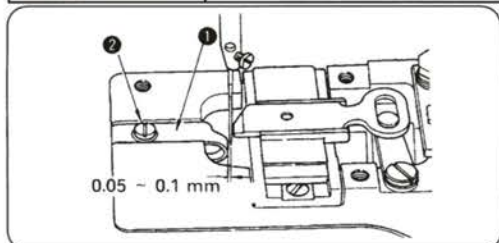
- 1) 在把踏板踩到底的状态下，用手向转动方向转动驱动皮带轮下降到最下点，然后拧松固定螺丝①。
(决定针杆高度。)
- 2) TQ × 1 针时，请把针杆②的上方 2 条刻线中的上刻线 A 对准针杆下滑块③的下端；TQ × 7 针时，请把下方的 2 条刻线中的上刻线 A 对准针杆下滑块③的下端，然后拧紧固定螺丝①。此时，请把机针的槽 C 调整到正面。
(决定弯针的位置。)
- 3) 拧松固定螺丝④，转动皮带驱动轮，把针杆②的 2 条一组的刻线中的下刻线 B 对准针杆下端块③的下端。
- 4) 在此状态，把弯针的针尖⑤对准机针的中心，然后拧紧固定螺丝④。
- 5) 拧松固定螺丝⑥，把弯针间隙调整为 0.01 ~ 0.1mm，然后再拧紧螺丝⑥。

3-7. 针导向器的位置



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



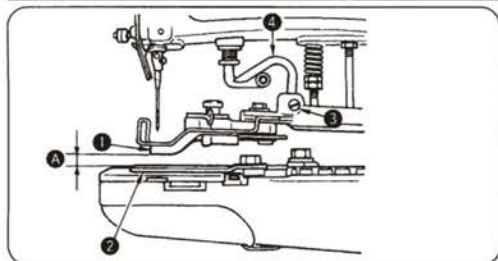
在针杆最下点，拧松螺丝②，左右移动针导向器①，把机针和针导向器①的间隙调整为0.05 ~ 0.1mm。

3-8. 抓扣装置的高度



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



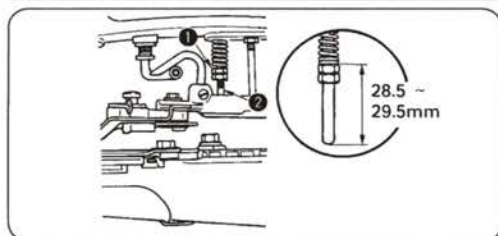
- 1) 在缝制后停止的位置，钮扣抓爪①的底面里侧和布压脚下板②的上面的标准间隙A是8mm。
- 2) 调整时，拧松抓脚提升钩固定螺丝③，上下移动抓脚装置提升钩④。

3-9. 布压脚压力的调整



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



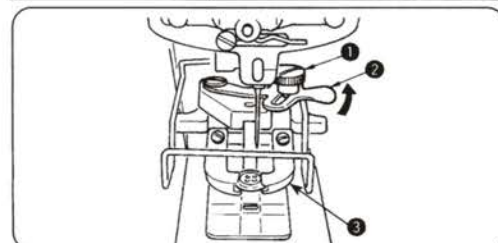
螺母①的上端和压脚压力调节杆②下端的间隔为28.5 ~ 29.5mm时的布压脚压力是标准压力。请转动螺母①进行调节。

3-10. 抓脚打开拨杆的调整



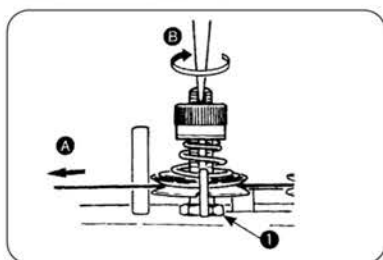
注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



在遮挡状态，拧松了固定螺丝①的话，可以用爪脚张开杆②开闭钮扣爪脚③。把钮扣安放到正确的位置，然后在钮扣容易放入取出的位置用固定螺丝①固定爪脚张开杆②。

3-11. 松线同步时间的调整



一边向箭头 **A** 方向拉线，一边转动驱动皮带轮时，第二线张力盘浮起，有个线迅速脱线的点。此时，从针杆上金属滑块上面到针杆上端的高度为 44 ~ 47mm(TQ × 7 针时为 54 ~ 57mm) 是标准。特别是经常发生下列现象时，请进行以下的调节。
 拧松螺母 **①**，把螺丝刀插入第二线张力杆，向箭头 **B** 方向转动之后，线浮起，针杆高度变低，向相反方向转动之后则针杆高度变高。

现象	针杆高度
1. 布料里侧的紧线不好时。	稍稍高一点。
2. 断开时，机线中途断线时。	稍稍低一点。
3. 经常断线时。	稍稍低一点。

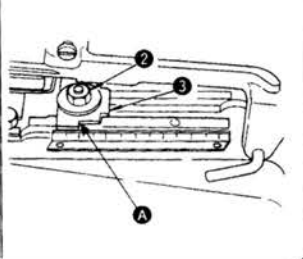
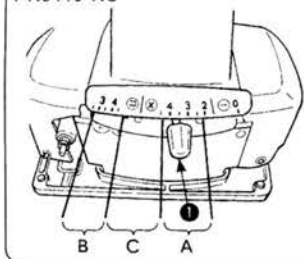
3-12. 2 眼和 4 眼扣的调整



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。

PK511J-NS



请确认了缝纫机在遮挡位置（参照「3-14. 遮挡位置的调整」P.32）之后再进行调整。

首先量一下钮扣孔间隔有几 mm，4 眼钮扣的竖送量和横送量值应设为相同。

[PK511J-N 时]

★竖送量

向下压竖送调整杆 **①**，2 眼钮扣时设到 0 的位置，4 眼钮扣时根据测定值进行设定。

★横送量

拧松螺母 **②**，把指针 **③** 的 **A** 部对准对应测定值的刻度，然后拧紧固定螺母 **②**。

[PK511J-NS 时]

★纵送刻度

一边向下按压纵送调节杆 **①**，2 扣眼时调整到 0 位置，4 扣眼时请根据缝制方法分别采用下列方法调整刻度。

X 缝制：请在 **A** 的范围内设定到对应钮扣测定值的刻度位置。

□ 字缝制：请在 **B** 的范围内设定到对应钮扣测定值的刻度位置。



调整到 **C** 的位置（刻度设定范围外）的刻度之后，有可能发生不能缝制的故障。因此，请不要把调节杆设定到 **C** 的位置。

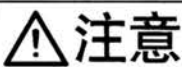
★横送量

拧松螺母 **②**，把指针 **③** 的 **A** 部对准对应测定值的刻度，然后拧紧固定螺母 **②**。



请确认机针准确地落入钮扣各孔的中心后再运转缝纫机。

3-13. 针数

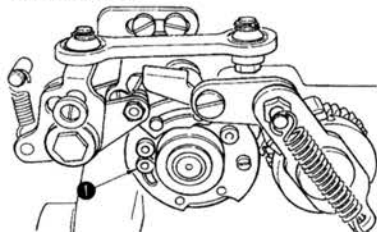


注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。

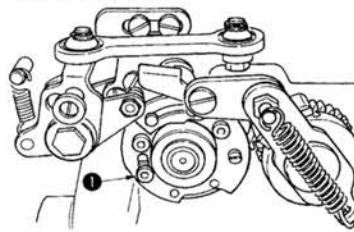
变换针数时，请打开左侧面护罩，然后用针数调节螺丝①和针数调节杆④(附属品)进行变换。

★ 8 针的调整方法



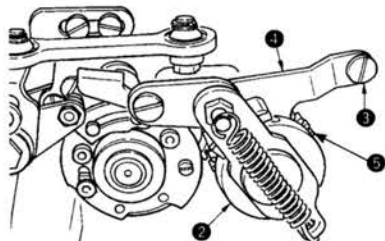
调整为 8 针时，请拧松针数调节螺丝①，调整到图示的位置后进行固定。

★ 16 针的调整方法



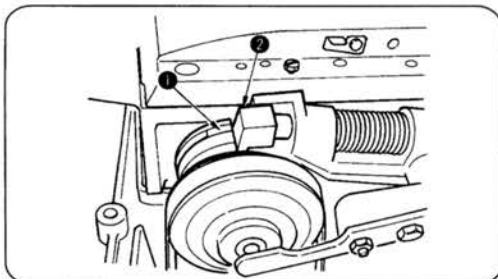
调整为 8 针后，把针数调节螺丝①移动到左侧，然后拧松针数调节螺丝①，调整到图示的位置后进行固定。

★ 32 针的调整方法



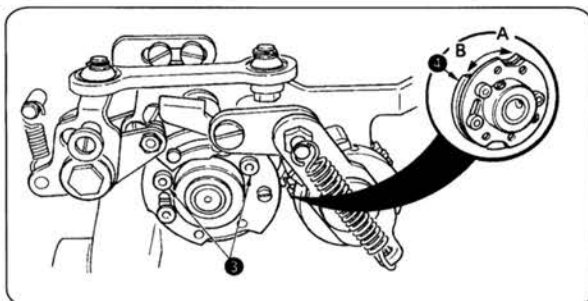
在 16 针的状态安装在大齿轮⑤上的针数调节齿轮凸起②转到下侧后，请用梯形螺丝③(附属品)组装针数调节杆④(附属品)。

3-14. 遮挡位置的调整



缝纫机缝制结束停止后，请把遮挡凸轮的爪①和遮挡钩②调整为相接。

注意 更换马达皮带轮，转速变更为 1300rpm
→1500rpm 时，请一定重新调整遮挡位置。



〔调整方法〕

遮挡钩碰到遮挡凸轮反弹时(爪①和遮挡钩②之间有间隙时)

请拧松遮挡位置调整螺丝③(2处)，向 A 方向转动遮挡调节凸轮④，然后固定遮挡位置调整螺丝③。

遮挡钩碰到遮挡凸轮爪之前停止不动时
请拧松遮挡位置调整螺丝③(2处)，向 B 方向转动遮挡调节凸轮④，然后固定遮挡位置调整螺丝③。

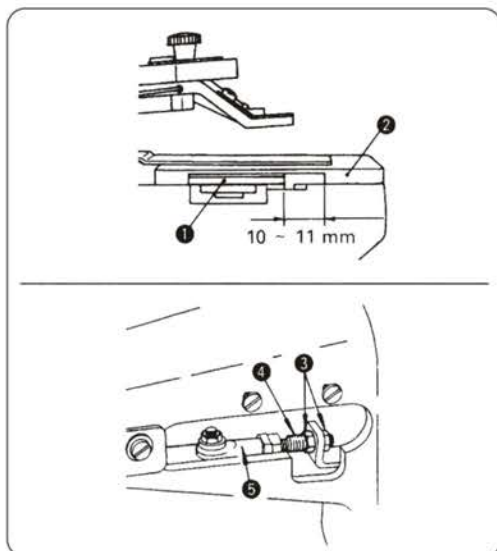
3-15. 切线装置

(1) 移动刀位置的调整



注意

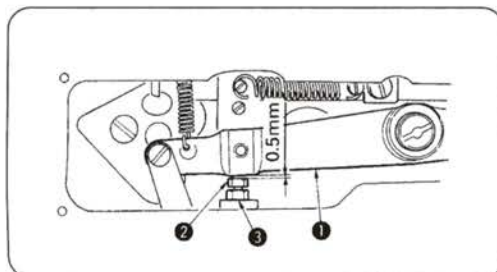
为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



在遮挡位置 (参照「3-14 遮挡位置的调整」P.32) 压脚完全地上升到最高位置，切线连接板 (前) ① 和针板 ② 槽端面的标准间隙是 10 ~ 11mm。

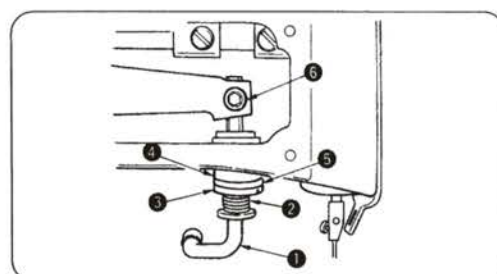
调整 10 ~ 11mm 时，请放倒缝纫机，卸下防油板，拧松螺母 ③ (2 个)，前后移动连结螺丝 ④，进行调整。另外，拧紧螺母 ③ 时，请注意切线连结头 ⑤ 应基本保持水平。

3-16. 提升拨杆和调整螺丝的间隙



在遮挡位置 (参照「3-14 遮挡位置的调整」P.32) 请把提升杆 ① 的端面和调节螺丝 ② 的间隙调整为 0.5mm，然后用调节螺丝螺母 ③ 拧紧固定。

3-17. L 型提升杆的安装方法



★ L 型提升杆的安装方法

按移动刀反弹弹簧 ②、分离垫片 ③、分离垫 ④、分离垫片 ⑤ 的顺序安装到 L 型提升杆 ① 上。

在遮挡位置 (参照「3-14 遮挡位置的调整」P.32) 让机臂的腭部和遮挡缓冲垫片的端部紧密接触，安装时注意不要有松动，然后用螺丝 ⑥ 拧紧固定。

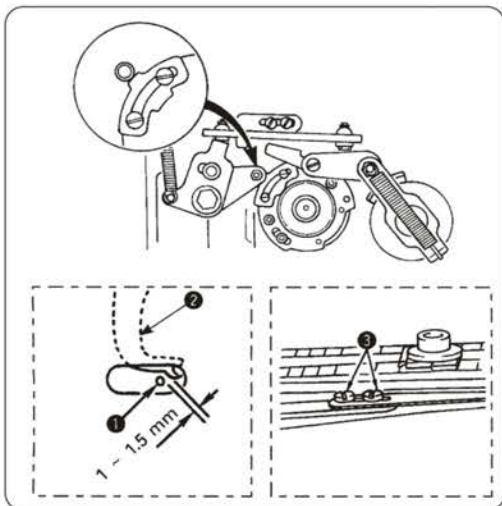
3-18. 结线装置



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。

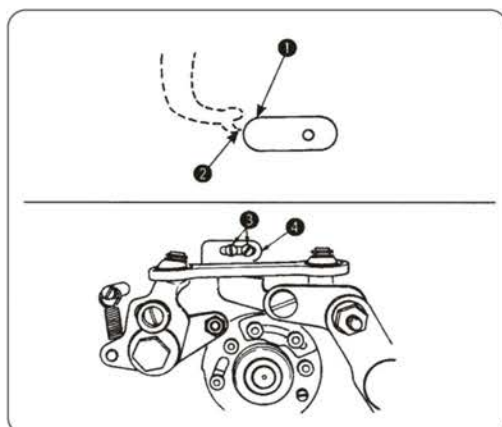
(1) 结线连接板的调整



结线曲轴的凸轮转到打结器的最外周时，机针②和结线板③之间的间隙为1 ~ 1.5mm，请拧松固定螺丝①，进行调整。

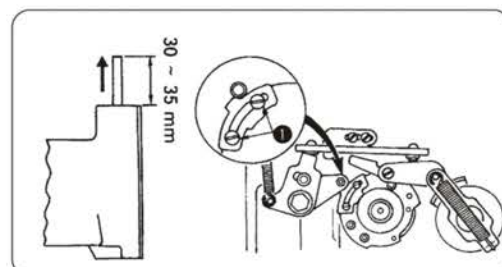
(调整后请确认机针和结线板不能相碰。)

(2) 结线曲轴挡块的调整



缝纫机启动时，结线曲柄的凸起没有接触到结线触点，请拧松固定螺丝③，用挡块④进行调整，让针孔的外周①和结线板的前端②基本一致。

(3) 结线打结的调整

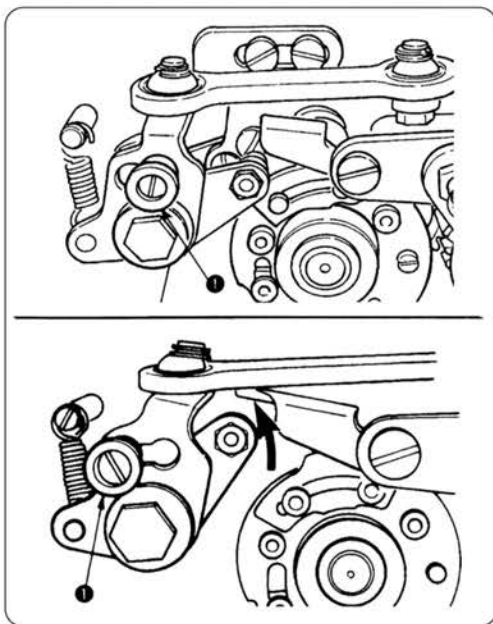


在第14针针杆上升时，针杆上金属部件的端面为30 ~ 35mm(使用TQ×7机针时为40 ~ 45mm)时，请拧松固定螺丝①，让结线曲轴的凸轮与打结器相接触。



打双线结时(无连线)，请调整第6针和第14针。

(4) 有无结线的变换



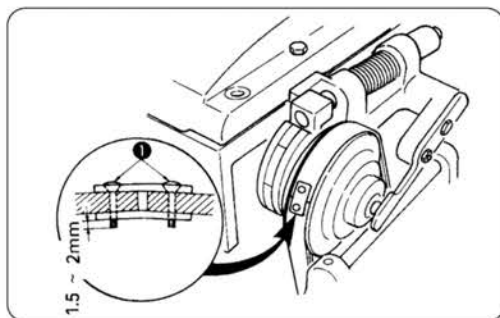
设定为有结线时，请把结线变换旋钮①拉到图示的前侧位置。

设定为无结线时，请把结线变换旋钮①拉到图示的前侧位置。

中文

維修、系列機型、附件

4-1. 皮带金属部件的连接方法



安装皮带的联结螺丝①时，请让螺丝向背面突出1.5 ~ 2mm左右，然后拧紧固定。



1. 把皮带安装到皮带轮上，盖上侧盖，转动马达后，请确认侧盖和皮带金属器具不相碰。
2. 组装皮带时，请注意不要让缝纫机皮带粘附油类物质。

4-2. 系列機型

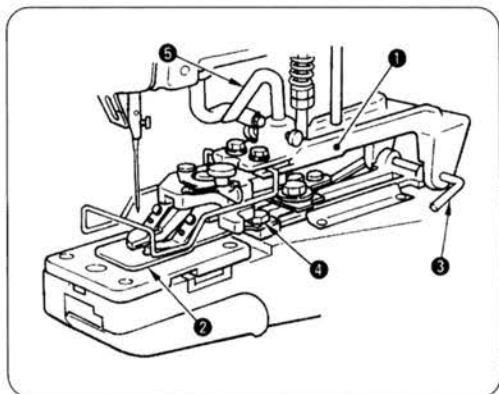
PK511J-N	PK511J-NS
8、16、32 针	8、16、32 针

4-3. 附件



注意



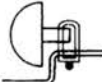


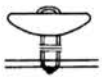
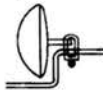


为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



- 1) 安装各附件时，有的机种不能拆卸抓扣装置 ①、布压脚下板 ②。
- 2) 抓扣装置 ① 可以卸下安装轴 ③ 上的拉环，布压脚下板 ② 可以卸下固定螺丝 ④。



与 PK511J-N、PK511J-NS 的附件不同的仅是旋钮装置拉起钩 ⑤。

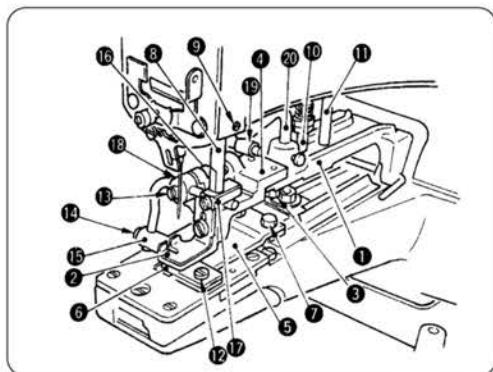
用途	平扣用		平扣用 一般		子母扣用
	大钮扣	中钮扣			
PK511J-N PK511J-NS	✓ Z201	✓ Z202	✓ Z033	✓ Z037	
示意图					
备考	钮扣尺寸 A: 3 ~ 6.5 mm B: $\phi 20 \sim \phi 28$ mm	钮扣尺寸 A: 3 ~ 5 mm B: $\phi 12 \sim \phi 20$ mm	钮扣直径: 16mm 柄尺寸 厚: 6.5mm 宽: 3, 2.5mm	尺寸: A: 8 mm	
用途	钮扣绕线用		金属钮扣用	力扣用	钉标牌
	第 1 工序	第 2 工序	一般		
PK511J-N PK511J-NS	✓ Z041	✓ Z035	✓ Z038	✓ Z039	✓ Z044
示意图					
备考	钉扣高度: A: 5.5 mm			与 Z041 共通	折边宽度: 3 ~ 6.5 mm

(1) 柄扣（真珠扣）钉扣附件（Z033）



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



（安装方法）

卸下抓扣装置和布压脚下板，安装上珍珠扣用抓扣装置①，拧松固定螺丝③，前后移动抓脚安装台④，让机针正好落在抓脚②的落针沟中间。同时，让珍珠扣用布压脚下板台⑤正好落在压脚下板⑥的落针沟中间，然后用固定螺丝⑦固定起来。

把钮扣压开杆⑧插进机架凸部的孔里，再用固定螺丝⑦固定起来。

（使用方法）

- 1) 拧松固定螺丝⑫，把布压脚下板⑥拉到离抓脚②的左端面0.5 ~ 1.0mm的地方，然后拧紧固定螺丝⑫。
- 2) 装上拗扣，拧松固定螺丝⑬和⑭，调整钮扣压脚⑮使其稍稍压住钮扣的中心。
- 3) 调整钮扣压脚⑮的压力时，请拧松推力环固定螺丝，转动推力环⑯调节强度，以便在缝制中不让钮扣移动。
- 4) 打开钮扣压脚，把滑块⑰固定到使用方便的位置。



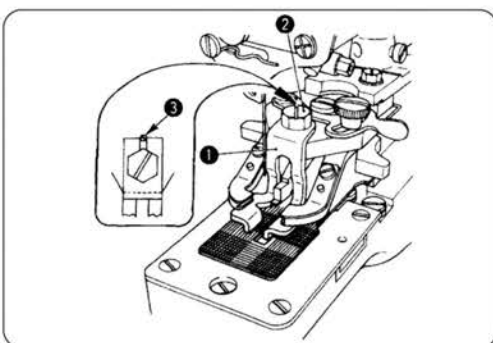
1. 转动推力环后，不要让转动轴⑱在轴方向产生松动。
2. 抓扣装置上升时，请调整抓扣装置的提升钩⑲和抓扣装置的止动销⑩，让L型提升杆凸块⑮和抓脚安装台④不相碰。

(2) 绕线钉扣第1工序（钉扣工序）用附件（Z041）



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



（安装方法）

用安装螺丝②和导销螺丝③把绕线用爪①固定到普通的钮扣抓爪部。

此时，把钮扣抓爪①安装到钮扣中心左右均等的位置。

（使用方法）

与钉普通的平扣一样，但是从钮扣到布之间的距离变长了，所以需要调节线调节拨杆把拉线量弄长。

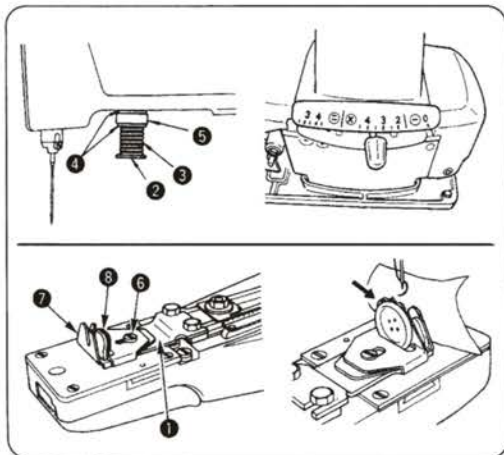
（参照「3-2. 线调节拨杆的调节」P28项）

(3) 绕线钉扣第 2 工序 (绕线工序) 用附件 (Z035)



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



(安装方法)

卸下抓扣装置、压脚压力调谐杆和布压脚底板，安装上绕线第 2 工序用附件 ①。

但是，Z035 需要卸掉 L 型拉杆，按照移动刀反弹弹簧 ③、分离垫片 ⑤、分离垫圈 ④ 的顺序安装杆 ②，确认了完全分离之后，把机架和分离缓冲器 ⑥ 的端面紧紧地安装起来不让它有松动。

(使用方法)

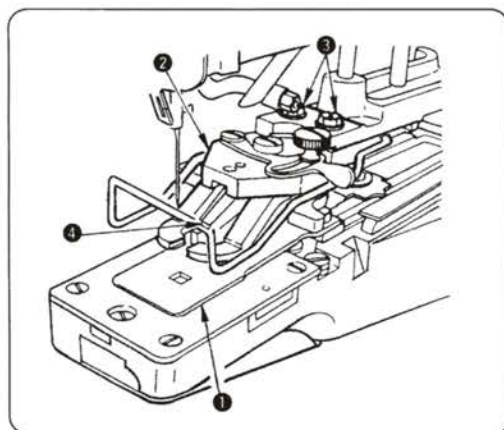
- 1) 拧松安装螺丝 ⑥，绕线用金属部件 (大) ⑦ 和绕线用金属部件 (小) ⑧ 移动到落针位置的中心，调整绕线长度。
- 2) 放进钮扣，把线从箭头部穿进。
- 3) 把竖送刻度设为 0。

(4) 钉子母扣附件 (Z037)



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



(安装方法)

卸下抓扣装置和布压脚下板，横送布刻度和竖送布刻度设定为 4mm 以后，安装子母扣用下布压板 ①，让针均匀地落到四角孔里。

然后，在子母扣抓脚抓住子母扣的状态，安装上子母扣抓扣装置 ②，让机针正确地落到扣孔里。

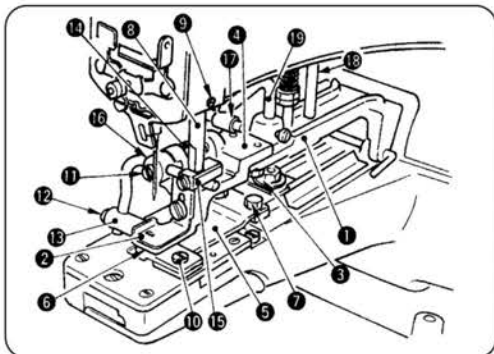
如果落针不正确的话，请拧松六角螺丝 ③ 进行调整。最后，请确认下布压板 ① 的凸形和子母扣用钮扣导爪 ④ 下面的凹形是否完全一致。

(5) 钉金属扣附件 (Z038)



注意

为了防止突然启动造成人身事故，请关掉电源，确认马达确实停止转动后再进行。



(安装方法)

卸下抓扣装置和布压脚下板，安装金属扣用抓扣装置①，拧松固定螺丝③，前后移动抓爪安装台④，让机针正好落在抓爪②的落针沟的中间。另外，用固定螺丝⑦固定金属扣用布压脚下板⑤，让机针正好落在压脚下板⑥的落针槽中。把钮扣压开杆⑧插进机架头部的孔里，然后用固定螺丝⑨拧紧固定。

(使用方法)

- 1) 拧松固定螺丝⑩，把布压脚下板⑥从抓爪②的左端面拉进 1.0 ~ 1.5mm，然后拧紧固定螺丝⑩。
- 2) 安放钮扣，拧松固定螺丝⑪和⑫，让钮扣压脚⑬正好压住钮扣的中心。
- 3) 拧松固定螺丝，转动轴环⑭进行调整，让钮扣压脚⑬的压力在缝制中不让钮扣移动。
- 4) 把钮扣压脚打开凸轮⑮移动到使用方便的位置固定起来。



1. 转动轴环时，旋转轴⑯在轴方向不能有松动。
2. 抓扣装置上升时，请调整抓扣装置的提升钩⑰和抓扣装置的止动销⑱，让 L 型提升杆凸块⑲和抓脚安装台④不相碰。

4-4. 马达皮带轮和皮带

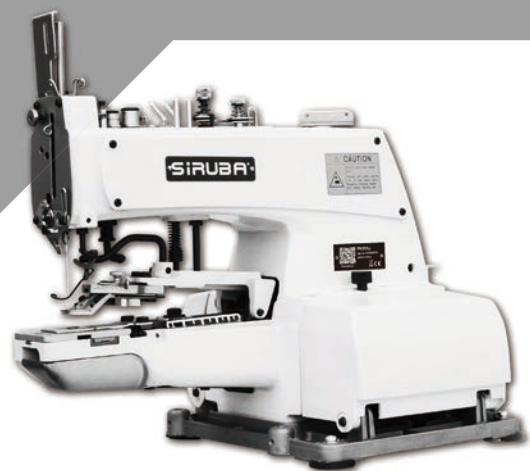
- 1) 马达使用单相、输出功率 200W (1/4 马力) 的通用马达。
- 2) 请使用 V 型皮带。
- 3) 马达皮带轮和缝纫机转速的关系如下表所示。

Hz	rpm	马达皮带轮的货号	mm
50	1500	40038291	Φ 76
	1300	40038298	Φ 64.5
60	1500	40038298	Φ 64.5
	1300	40042229	Φ 57

- ★ 50Hz、1300rpm 和 60Hz、1500rpm 的皮带轮通用。
- ★ 马达的转动方向，从马达皮带轮侧看是逆时针转动。请注意不要让皮带轮逆转。
- ★ 更换马达皮带轮，转速变更为 1300rpm ↔ 1500rpm 时，请一定重新调整遮挡位置。(参照「3-14. 遮挡位置的调整」P.32)

5. 故障的原因和对策

故障	原因	对策
1. 断线。	① 靠线动作不良。 ② 紧线拨杆调整不良。 ③ 第二线张力盘的同步不好。 ④ 抓扣装置的上升量太高。 ⑤ 拔针器压线。拔针器调整不良。(间隙小) ⑥ 机针没有落到钮扣的中心。 ⑦ 针与扣眼相比太粗。	○ 调整靠线器的前后左右同步。 ○ 调整紧线拨杆。 ○ 提早线张力盘浮起同步。 ○ 把抓脚上升量调整为 8mm。 ○ 调整拔针器摆动滑块。 ○ 用抓脚安装台调整。 ○ 换为细针。
2. 始缝时形成不了缝迹，中途开始出缝迹	① 线调紧拨杆的调整不良。 ② 面板线张力太大。	○ 调整线张力拨杆摆动轴。 ○ 减弱面板线张力。
3. 紧线不良。	① 靠线动作不良。 ② 第二线张力盘的同步不好。 ③ 第二线张力盘的张力不良。 ④ 机针没有落到钮扣的中心。 ⑤ 布压脚压力不良。	○ 调整靠线器的前后左右同步。 ○ 稍稍推迟线张力盘浮起同步时间。 ○ 用第二线张力盘调整。 ○ 用抓脚安装台调整。 ○ 调整布压脚压力。
4. 最终针的加固缝紧线弱。	① 紧线拨杆调整不良。 ② 结线板的同步不良。 ③ 拔针器调整不良。(间隙过大)	○ 调整紧线拨杆。 ○ 提早结线板的同步时间。(调整结线打结) ○ 用拔针器摆动滑块调整。
5. 钮扣上第一针的线出得太长。	线张力拨杆调整不良。	○ 调整线张力拨杆摆动轴。
6. 分离时切线不良。	① 第二线张力盘的同步不好。 ② 机针碰到钮扣孔。 ③ 拔针器压线不良。 ④ 布压脚压力太大。	○ 稍稍推迟线张力盘浮起同步，使紧线变好。 ○ 调整落针。 ○ 调整拔针器摆动滑块。 ○ 用布压脚压力调整螺母进行调整。
7. 切线不断。	① 移动刀分线爪不能把布侧的线确实分开。 ② 机针没有落到钮扣的中心。 ③ 最后落针跳针。 ④ 移动刀分线爪高度不良。	○ 调整移动刀位置。 ○ 用抓脚安装台调整。 ○ 调整弯针。 ○ 调整移动刀分线爪的高度。
8. 面线和底线 2 根都断线。	① 移动刀位置不良。 ② 移动刀分线爪高度不良。	○ 调整分离时移动刀的位置。 ○ 调整移动刀分线爪的高度。
9. 切线后布里侧线出得太长。	① 线移动刀切线同步不良。 ② 抓扣装置上升量过大。	○ 调整移动刀位置。 ○ 把抓脚上升量调整为 8mm。
10. 切断后布背面出线长度有长有短。	① 移动刀位置不正确。 ② 抓扣装置的上升量过高。	○ 调整分离时移动刀的位置。(10 ~ 11mm) ○ 把抓脚上升量调整为 8mm。



高林股份有限公司
KAULIN MFG. CO., LTD.

由於對產品的改良及更新，本產品零件圖及外觀的修改恕不事先通知！

The specification and/or appearances of the equipment described in this parts list are subject to change because of modification which will without previous notice.

JLL-05A01.JUN.2021