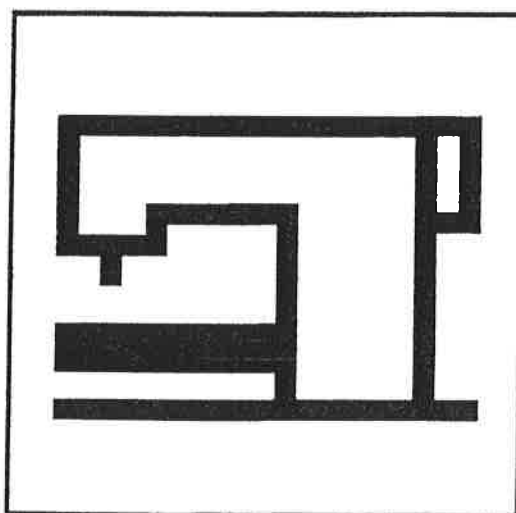


# SEIKO

## INSTRUCTION MANUAL

## 使用说明书

### CW-8B-2



SEIKO SEWING MACHINE CO.,LTD

Thank you very much for buying a SEIKO sewing machine. Before using your new machine, please read the safety instructions below and the explanations given in the instruction manual.

With industrial sewing machines, it is normal to carry out work while positioned directly in front of moving parts such as the needle and thread take-up lever, and consequently there is always a danger of injury that can be caused by these parts.

Follow the instructions from training personnel and instructors regarding safe and correct operation before operating the machine so that you will know how to use it correctly.


## SAFETY INSTRUCTIONS

### 1. Safety indications and their meanings


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


The meanings of these indications and symbols are given below.


#### Indications

 <b>CAUTION</b>	<p>The instructions which follow this term indicate situations where failure to follow the instructions could cause injury when using the machine or physical damage to equipment and surroundings.</p>
--	---










#### Symbols

 ..... This symbol ( $\triangle$ ) indicates something that should be careful of. The picture inside the triangle indicates the nature of the caution that must be taken.  
(For example, the symbol at left means, "beware of injury".)

 ..... This symbol ( $\otimes$ ) indicates something that you must not do.

 ..... This symbol ( $\odot$ ) indicates something that you must do. The picture inside the circle indicates the nature of the thing that must be done.  
(For example, the symbol at left means, "You must make the ground connection".)

### 2. Notes on safety

 <b>CAUTION</b>	
<b>Environmental requirements</b>	
<ul style="list-style-type: none"> <li> • Use the sewing machine in an area, which is free from sources of strong electrical noise such as high-frequency welders. Sources of strong electrical noise may cause problems with correct operation.</li> <li> • Any fluctuations in the power supply voltage should be within <math>\pm 10\%</math> of the rated voltage for the machine. Voltage fluctuations that are greater than this may cause problems with correct operation.</li> <li> • The power supply capacity should be greater than the requirements for the sewing machine's electrical consumption. Insufficient power supply capacity may cause problems with correct operation.</li> <li> • The pneumatic delivery capability should be greater than the requirements for the sewing machine's total air consumption. Insufficient pneumatic delivery capability may cause problems with correct operation.</li> </ul>	<ul style="list-style-type: none"> <li> • The ambient temperature should be within the range of 5°C to 35°C during use. Temperatures that are lower or higher than this may cause problems with correct operation.</li> <li> • The relative humidity should be within the range 45% to 85% during use, and no dew formation should occur in any devices. Excessively dry or humid environments and dew formation may cause problems with correct operation.</li> <li> • Avoid exposure to direct sunlight during use. Exposure to direct sunlight may cause problems with correct operation.</li> <li> • In the event of an electrical storm, turn off the power and disconnect the power cord from the wall outlet. Lighting may cause problems with correct operation.</li> </ul>



## CAUTION

### Installation



• Machine installation should only be carried out by a qualified technician.



• Contact your SEIKO dealer or a qualified electrician for any electrical work that may need to be done.



• The installation should be carried out by two or more people.



• Do not connect the power cord until installation is complete, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.



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



• All cords should be secured at least 25mm away from any moving parts. Furthermore, do not excessively bend the cords or secure them too firmly with staples, otherwise there is the danger that fire or electrical shocks could occur.



• Be sure to install the belt guards to the machine head and motor.



• If using a work table that has casters, the casters should be secured in such a way so that they cannot move.



• Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.



• Be sure to wear protective goggles and gloves when handling the lubricating oil, so that no oil gets into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil under any circumstances, as it can cause vomiting and diarrhea. Keep the oil out of the reach of children.

### Sewing



• This sewing machine should only be used by operators who have received the necessary training in safe use beforehand.



• The sewing machine should not be used for any applications other than sewing.



• Be sure to wear protective goggles when using the machine. If goggles are not worn, there is the danger that if a needle breaks, parts of the broken needle may enter your eyes and injury may result.



• Turn off the power switch at the following times, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.

1. When threading the needle
2. When replacing the needle and bobbin
3. When not using the machine and when leaving the machine unattended

\* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work.



• If using a worktable that has casters, the casters should be secured in such a way so that they cannot move.



• Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.



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



• Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.



• If an error occurs in machine operation, or if abnormal noises or smells are noticed, immediately turn off the power switch. Then contact your nearest SEIKO dealer or a qualified technician.



• If the machine develops a problem, contact your nearest SEIKO dealer or a qualified technician.



## CAUTION

### Cleaning



- Turn off the power switch before carrying out cleaning, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.

- \* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work.



- Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.



- Be sure to wear protective goggles and gloves when handling the lubricating oil, so that no oil gets into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil under any circumstances, as they can cause vomiting and diarrhea. Keep the oil out of the reach of children.

### Maintenance and inspection



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



- Ask your SEIKO dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.



- Turn off the power switch and disconnect the power cord from the wall outlet at the following times, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury.

1. When carrying out inspection, adjustment and maintenance

2. When replacing consumable parts such as the rotary hook

- \* When using a clutch motor, the motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work.



- If the power switch and air need to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.



- Disconnect the air hoses from the air supply and wait for the needle on the pressure gauge to drop to "0" before carrying out inspection, adjustment and repair of any parts which use the pneumatic equipment.



- Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.



- When checking the rotary hook lubrication, do not touch moving parts such as the rotary hook, needle and needle bar with your finger or paper nor push them with other objects, otherwise injury or damage to the machine may result.



- Use only the proper replacement parts as specified by SEIKO.



- If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check those they operate correctly before using the machine.



- Any problems in machine operation, which result from unauthorized modifications to the machine, will not be covered by the warranty.

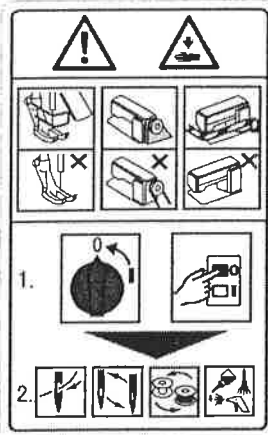
### 3. Warning labels

\* The following warning labels appear on the sewing machine.

Please follow the instructions on the labels at all times when using the machine.

If the labels have been removed or are difficult to read, please contact your nearest SEIKO dealer.

1



Caution  
Moving parts may cause injury.

Attach all safety devices before using the sewing machine.

Turn off the power switch at the following times.

- When threading the needle.
- When replacing the bobbin, needle, knife, rotary hook.
- When lubrication, cleaning, adjustment and maintenance.

2



Be sure to connect the ground.

If the ground connection is not secure, you run the risk of receiving a serious electric shock.

3



Direction of operation

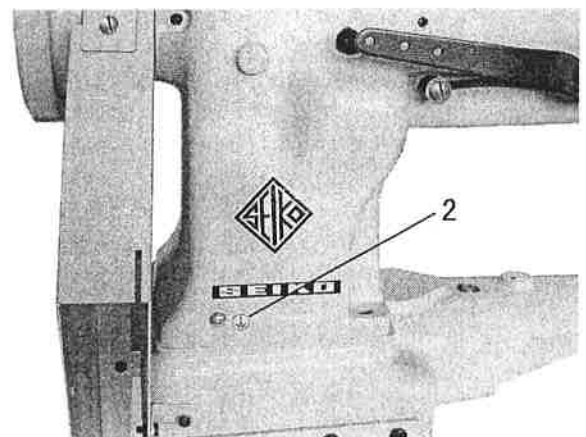
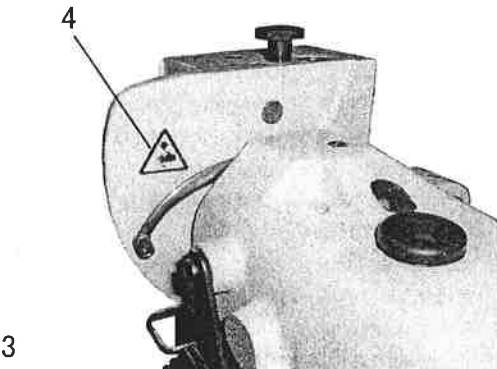
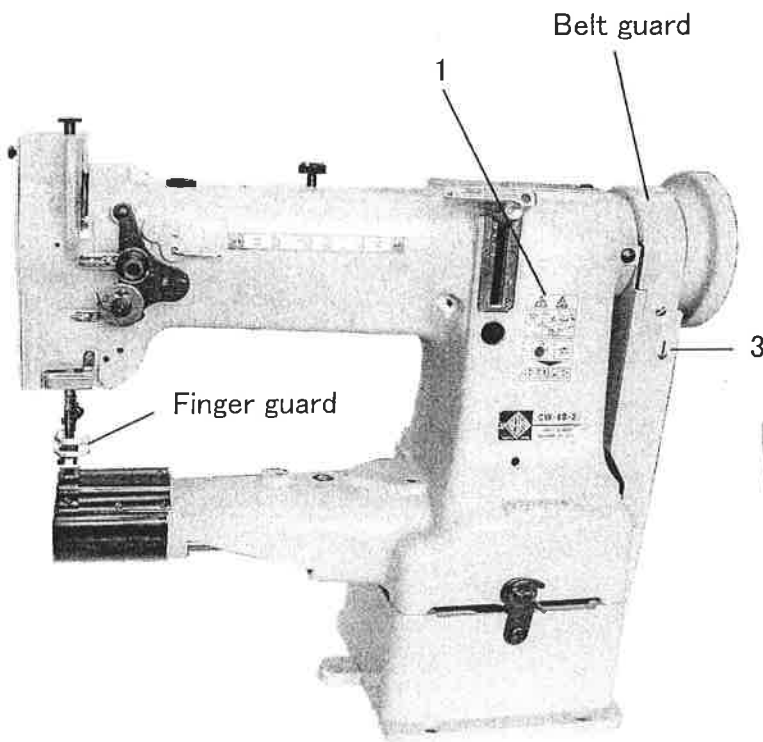
#### Safety devices

- Finger guard
- Belt guard, etc.

4



Moving parts may cause injury.



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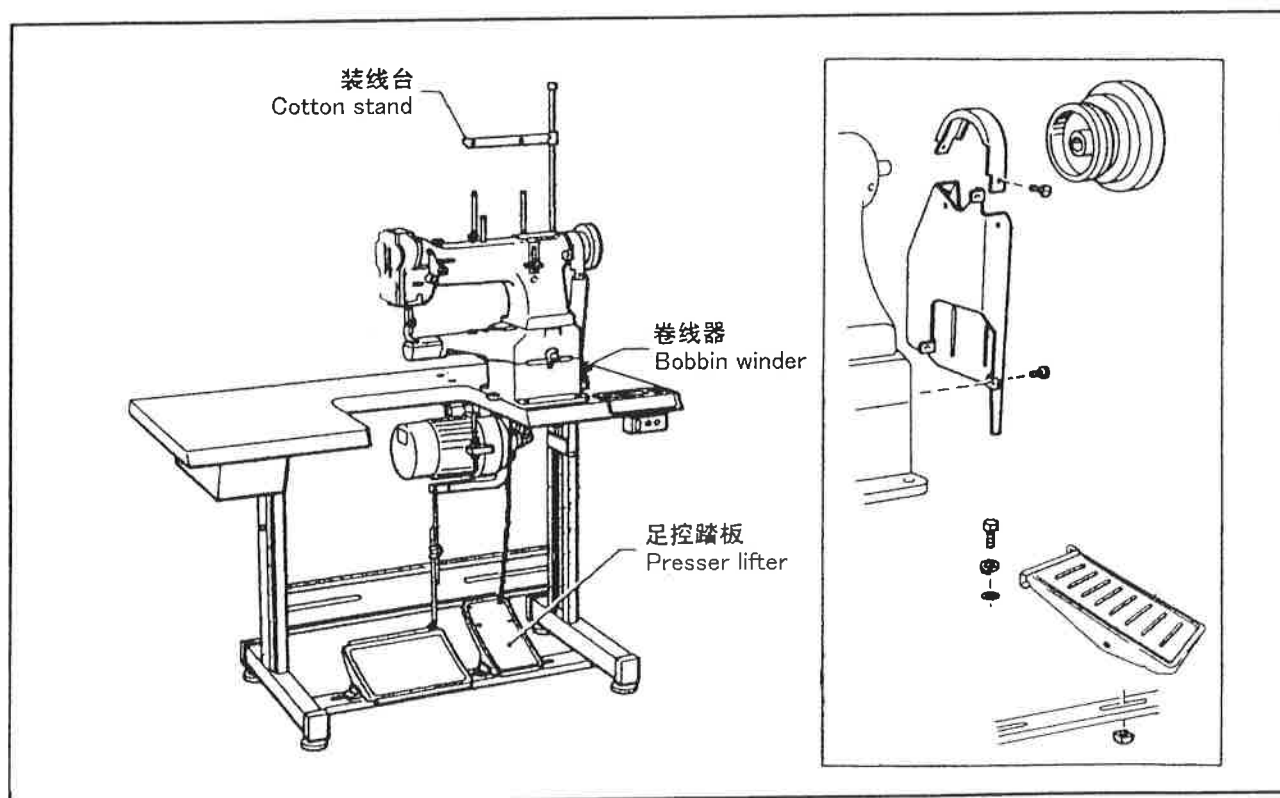
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## 1.缝纫机规格 / SPECIFICATIONS

最高缝速	Max.sewing speed	2,500 s.p.m.
足控压脚上升量	Presser foot lift	8.5mm
针杆行程	Needle bar stroke	33.2mm
最大进针量	Max.stitch length	5mm
送布牙高度	Feed dog height	1mm
使用机针	Needles	DP × 17#22
平板尺寸	Size of bed	65 φ × 269
作业尺寸	Arm pocket size	258 × 110

## 2.各部分名称及安装方法 / MAIN PARTS NAME AND INSTALLATION



※ 请将上轮设定为向作业方向旋转。

※ 足控压脚调节踏板请在机头组装前安装。

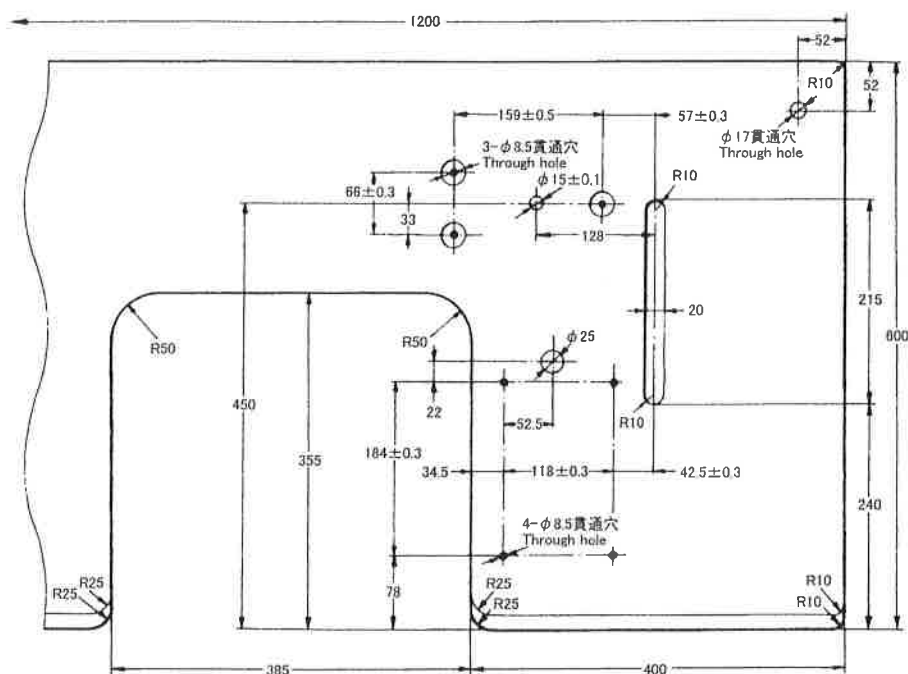
※ V型皮带安装时的松紧程度, 请掌握在手指压下10~20mm左右。

- During operation, the pulley of the machine must always be turned toward you.
- The presser lifter must be installed before setting the machine head.
- The V-belt must be adjusted so that the belt tension has about 10 to 20 mm of play.

※ 使用市场上出售的台板时, 安装孔请按下图加工。

● When using a tabel made by another manufacturer, drill holes in the table as shown in the figure below.

台板加工图/Power table



电机 /Motor

单相 110V	2极, 400W 电机
Single-phase 110V	2pole,400W motor
三相 220V	2极, 400W 电机
Three-phase 220V	2pole,400W motor

※ 根据使用地区电波波长(50Hz,60Hz)不同, 电机轮直径和皮带尺寸各不相同, 请参考下表选择使用。

● Select the correct motor pulley and V-belt, referring to table below, to suit the power supply frequency of your area.

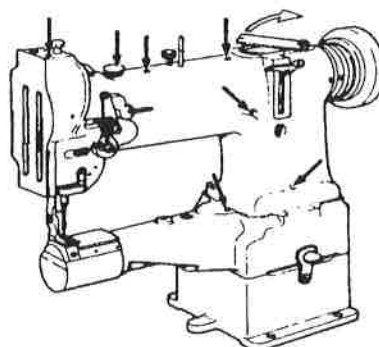
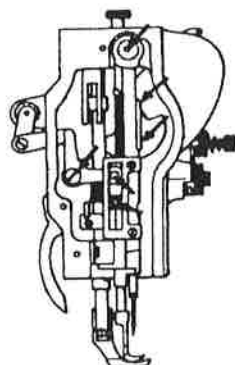
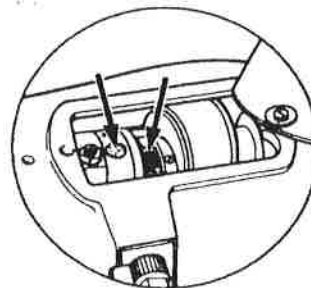
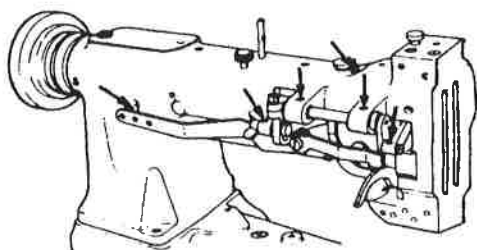
转速/Sewing speed	周波/Frequency	皮带轮直径/Motor pulley	V型皮带长度/V-belt
2,400 s.p.m.	50Hz	φ 65	57 inch
2,400 s.p.m.	60Hz	φ 55	57 inch
2,200 s.p.m.	50Hz	φ 60	57 inch
2,200 s.p.m.	60Hz	φ 50	57 inch
2,000 s.p.m.	50Hz	φ 55	57 inch
2,000 s.p.m.	60Hz	φ 45	57 inch



### 3.加油

### 3.给油 / LUBRICATION

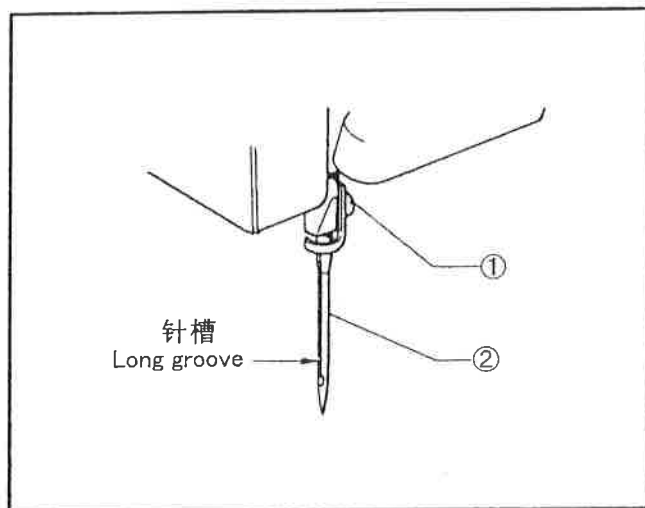
- ※ 在加油完毕前, 绝对不要起动缝纫机, 请按下图箭头所示之处进行加油。
- ※ 缝纫机连续运转时, 一天至少进行2次以上加油。
- ※ 旋梭部位, 请及时加油。
- ※ 在旋梭下部加油的同时, 垫毡上也要加油。新机在装入梭心时, 请加油。
- ※ Do not operate the machine, even if only for testing, unless it has been properly oiled at every spot requiring lubrication
- ※ The arrows in the figures below indicate these spots.
- ※ Oiling must be done at least twice daily when the machine is in continuous operation to assure free running and durability of the operating parts.
- ※ The hook mechanism should receive careful attention when lubricating the machine.
- ※ The oil well beneath the hook should be filled with oil and the felt pad in the same should be soaked with oil. In case of a new machine, oil the felt pad every time a new bobbin is inserted.



#### 4. 正确使用方法

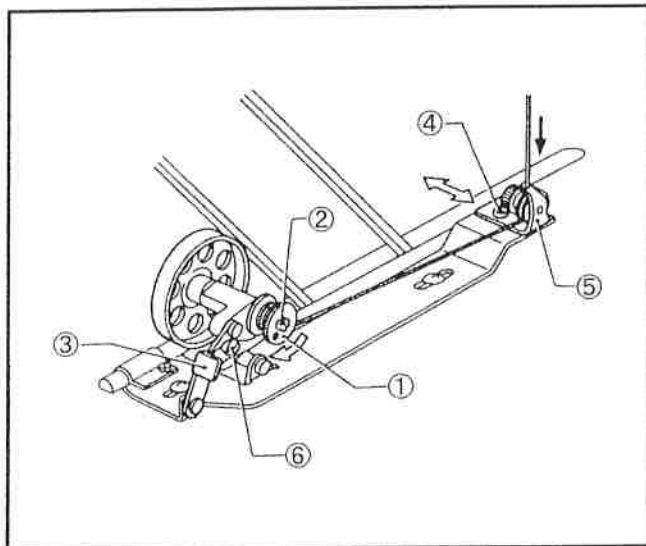
### 4. 正确使用方法 / CORRECT OPERATION

#### 4-1 机针的安装 / Attaching the needles



- (1) 请松开螺丝①。
  - (2) 将机针②的针槽面向左侧往上方插至顶部。
  - (3) 拧紧安装螺丝①。
- (1) Loosen the screws ①.
  - (2) Holding the needles ② with its long grooves facing left, insert all the way into the needle bars.
  - (3) Tighten the screws ①.

#### 4-2 绕线装置 / Winding the bobbin thread

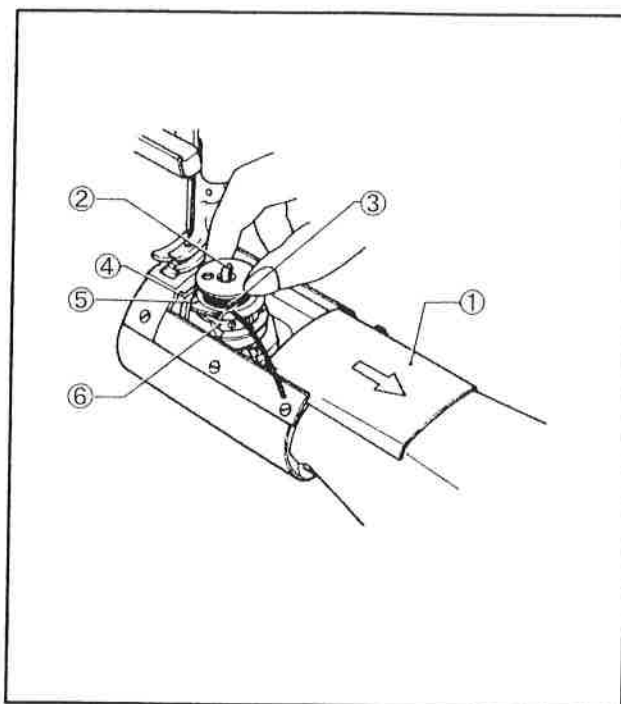


- (1) 将梭心①嵌入卷线轴②。
  - (2) 按下手柄③至底部。
  - (3) 用缝线按箭头方向在梭心①上绕几卷, 然后起动缝纫机, 将缝线绕至梭心的80%左右。
- ※ 缝线难以顺利卷入时, 请松开螺丝④和导入装置⑤向左右移动进行调节。
- ※ 当缝线卷入超出梭心①时, 可拧紧螺丝⑥进行调节。

- (1) Push the bobbin ① onto the bobbin winder shaft ②.
  - (2) Push the bobbin winder stop latch ③ all the way downward.
  - (3) Wind the thread around the bobbin ① a few times in the direction of the arrow, and then operate the machine. The thread will be wound around about 80% of the bobbin.
- ※ If the thread does not wind evenly, loosen the thread guide screw ④ and move the thread guide ⑤ to the right or left as necessary.
- ※ To wind more thread onto the bobbin ①, tighten the screw ⑥ to adjust.

## 4-3 梭心的安装和底线的穿法

/ Inserting and removing the bobbins and threading the bobbin thread



※ 首先请关闭电源开关, 切断电源。

(1) 将针杆移动至最高位置。

(2) 打开旋梭盖①。

(3) 将旋梭柄②向上竖起, 从梭壳中取出梭心。

(4) 装入梭芯, 倒下旋梭柄②。

※ 这时确认缝线应从梭心的左侧穿向右侧出线。

(5) 底线从狭缝③通过, 经过梭壳分线勾④和旋梭⑤之间, 在调线弹簧下侧穿过。

(6) 将缝线引出针板5cm, 嵌入旋梭盖①, 这时应留出底线所通过的间歇。

※ NOTE: The power must be off.

(1) Raise the needle bar to its highest point.

(2) Open the rotary hook cover ① on the arm of the machine.

(3) Pull up the latch ② and lift the bobbin from the bobbin case.

(4) Place the bobbin ② and push down the latch ②.

※ NOTE: Be sure that the bobbin thread draws out from the bobbin from left to right.

(5) Pull the bobbin thread into the slot ③ and to the left between the bobbin case opener ④ and hook ⑤ and under the tension spring ⑥.

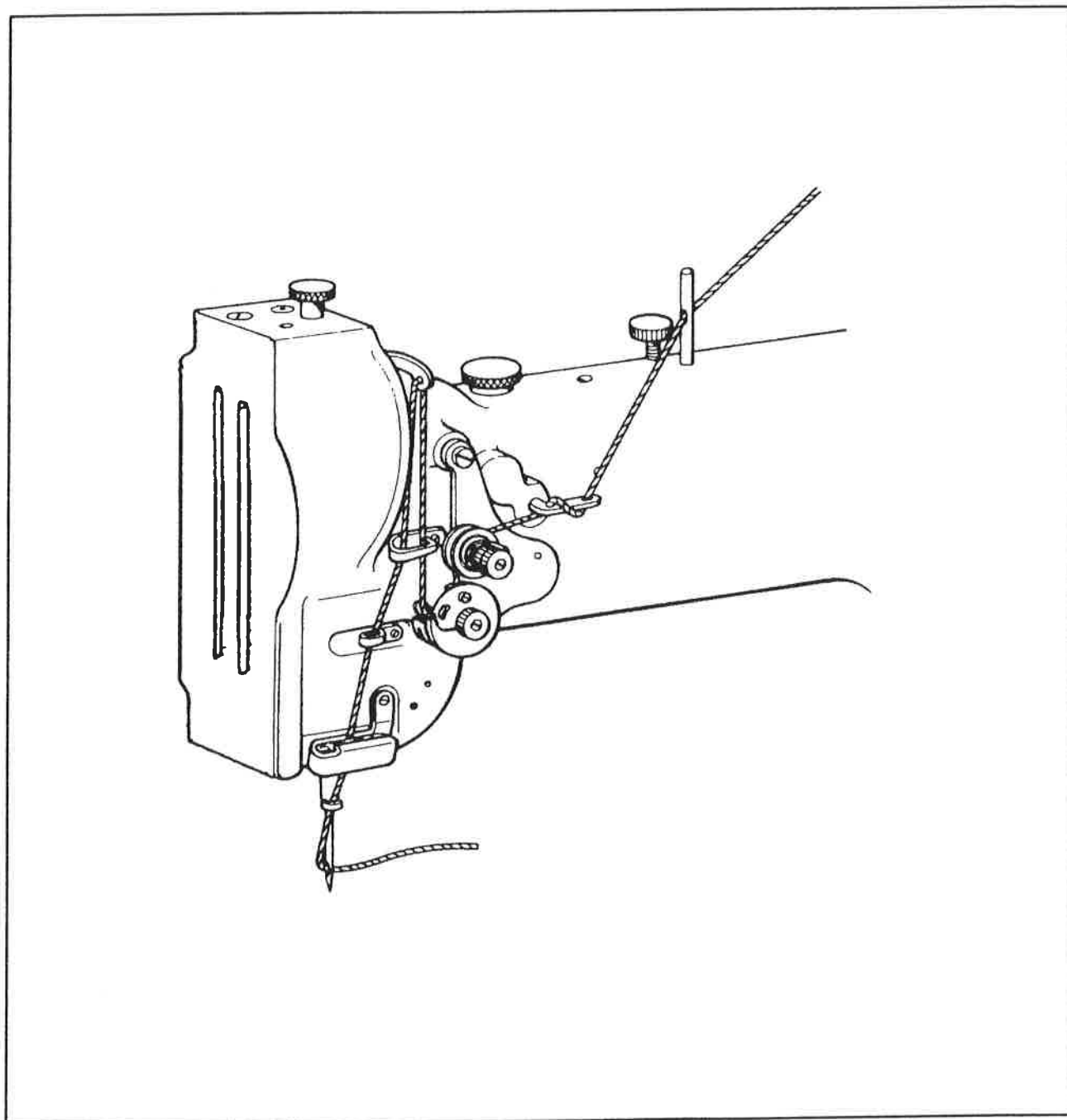
(6) Draw out about 5 cm of the bobbin thread on the needle plate and close the rotary hook cover ①, but leave sufficient space for passage of the thread.

#### 4.正确使用方法

##### 4-4 针线的穿法 / Threading the needle

面线的穿法如下图所示

Therad the needle as shown in the figures below.



## 4.5 调线装置的调节 / Adjusting the thread tension

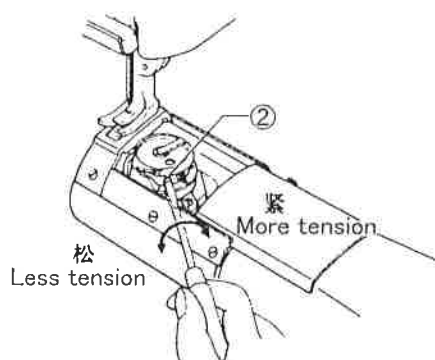
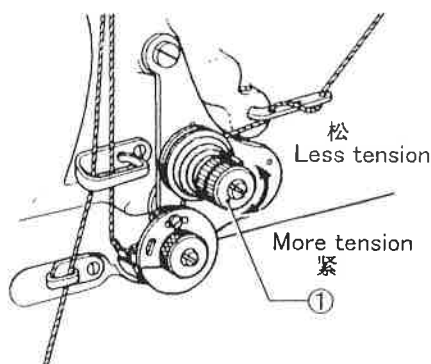
均匀漂亮的缝迹  
Good even stitches



底线太紧或面线太松时的缝迹  
Needle thread tension too weak or bobbin thread tension too strong



面线太紧或底线太松时的缝迹  
Needle thread tension too strong or bobbin thread tension too weak



## &lt;面线的调节&gt;

面线的张力用夹线螺母①来调节。  
加大张力时, 夹线螺母①向右侧转动;  
减少张力时, 夹线螺母①向左侧转动。

## &lt;面线的调节&gt;

底线的张力用底线调节螺丝②来调节。  
加大张力时, 底线调节螺丝②向右侧转动;  
减少张力时, 底线调节螺丝②向左侧转动。

## &lt;Needle thread tension&gt;

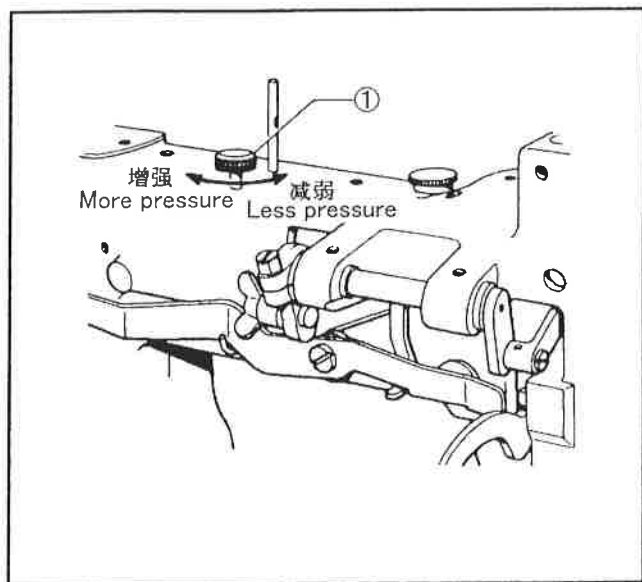
The tension of the needle thread is adjusted using the thread tension nut ①.  
To increase the tension of the needle thread, turn the thread tension nut ① to the right. To decrease tension, turn the thread tension nut ① to the left.

## &lt;Bobbin thread tension&gt;

The tension of the bobbin thread is adjusted using the screw ②.  
To increase the tension, turn the screw ② to the right. To decrease tension, turn the screw ② to the left.

#### 4. 正确安装方法

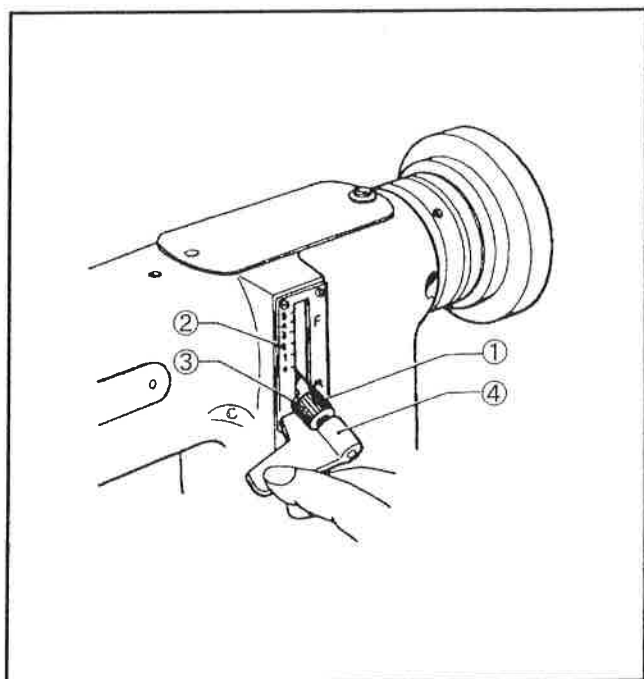
##### 4-6 调节压脚压力 / Adjusting the presser foot pressure



压脚的压力, 请旋转调节螺丝①进行调节。  
一般调节至翻弹力较弱的程度为好。

Adjust the presser foot pressure to lower as much as possible so that the presser foot can properly hold down material by turning the screw ①.

##### 4-7 进针量的调节 / Adjusting the stitch length

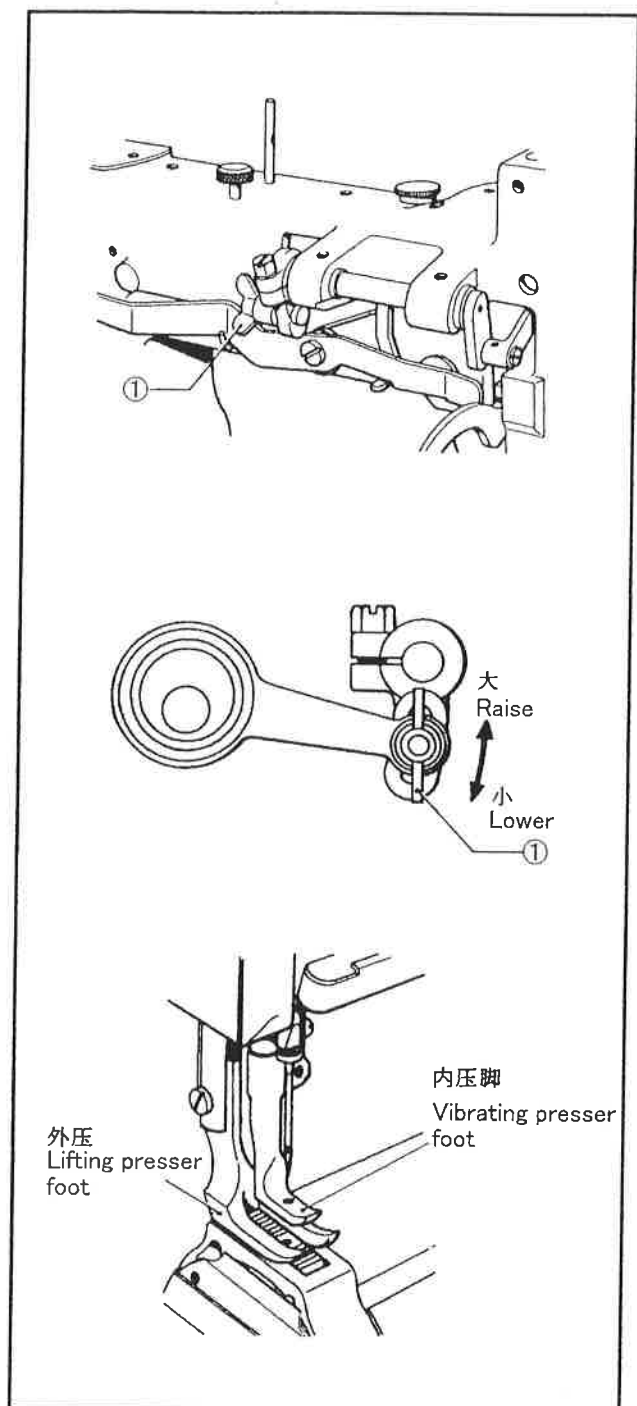


请旋转针距调节柄①按刻度标记②, 使其与送量调节基线③一致, 调节针距(进针量)的大小。  
倒缝时, 请将送量调节柄④向下按至最底处。

The length of the stitch is adjusted by turning the knurling tool ① so that the reference mark on the collar ③ aligns with the desired stitch length number on the plate ②.

When making reverse stitching, push the reverse feed lever ④ down as far as it will go.

## 4-8 调节内外压脚高度差 / Adjusting the height of the alternating presser feet



内外压脚的高度(上升量)根据缝制物的厚度进行调节。通常,内外压脚调节成同样的高度为好。

- (1) 请松开蝶形螺母①。
- (2) 增加高度时, 向上; 降低高度时, 向下调节。
- (3) 最后, 拧紧蝶形螺母①。

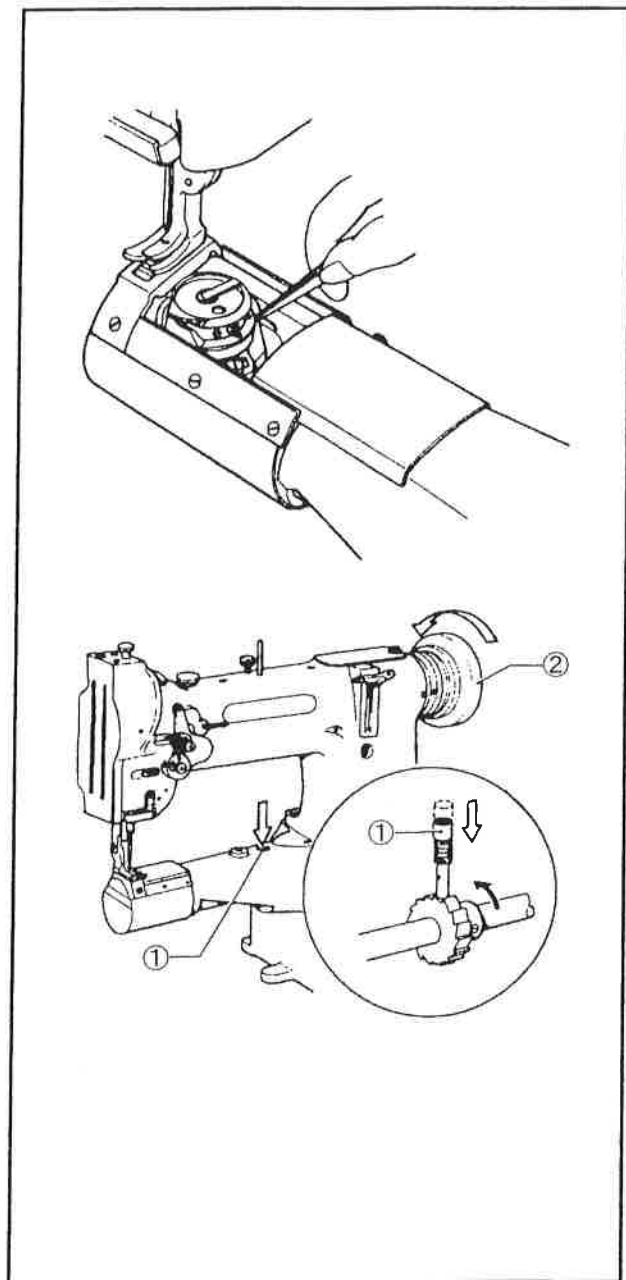
※内外压脚的高度不同时, 或想改变高度时, 请参考 P18 「调整压脚高度」

Adjust the height of the alternating presser feet to suit the thickness of the material sewn. Normally, the two presser feet should be adjusted so that their heights become equal.

Loosen the nut ①, raise the nut to raise the height, or depress the nut to lower the height.

NOTE: When the heights of the inside and outside presser feet are not equal, or when you wish to change their height, refer to page 18, "adjusting the height of the presser feet".

4-9 安全装置的复位方法 / Resetting the safety clutch mechanism



因旋梭或其它原因造成缝纫机异常时, 安全装置会发生动作, 使缝纫机的运转中断, 从而保护缝纫机免受损伤。

- (1) 清除旋梭上的残余缝线。
  - (2) 在按下基板上的按钮①的同时, 边手动逆转上轮②使安全装置恢复正常。
- 避免使用尖头锋利的工具, 保护旋梭。

The sewing hook and its mechanism are protected by a safety clutch. If the hook gets jammed with thread or other matter, the safety device disengages the driving belt and the machine stops sewing to prevent damage to the machine.

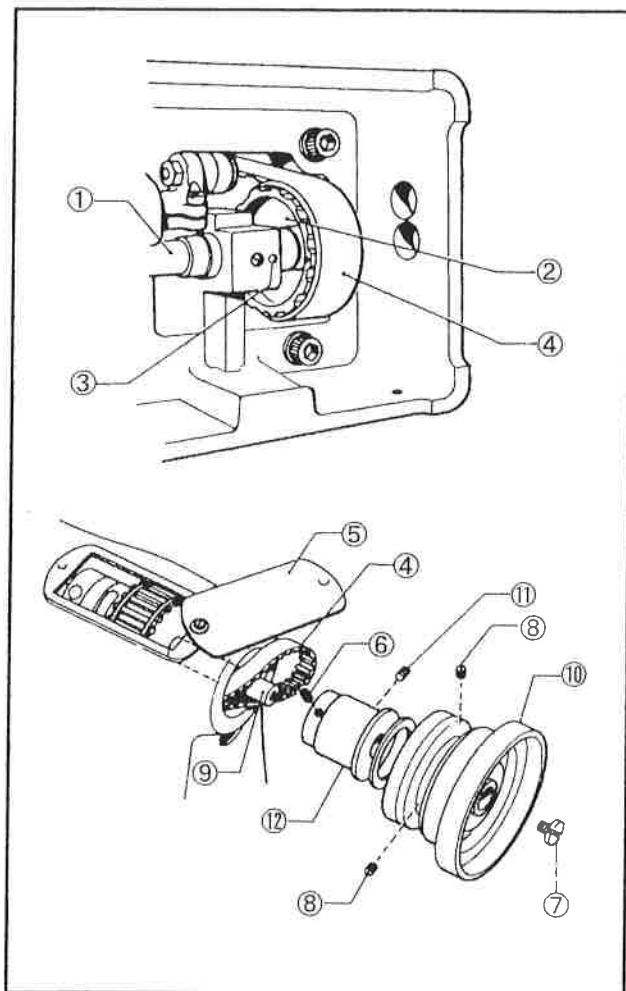
- (1) Remove any matter which may have lodged in the hook.
- (2) Depressing the push button ① on the bed plate, turn the pulley ② away from you until the safety clutch mechanism resets.

NOTE: Do not use a sharp-edged tool to clean the hook, as doing so may damage the hook.



## 5. 标准调整 / STANDARD ADJUSTMENT

## 5-1 交换同步皮带 / Replacing the timing belt



## &lt;皮带的安装方法&gt;

- (1) 缝纫机上轮向作业侧方向转动使挑线杆至最高处。
- (2) 转动下轴①使用同步皮带轮的标记与机壳③上的标记相重合。
- (3) 在这一位置时, 将同步皮带④先套装在电机的皮带轮上。

## &lt;皮带的拆卸方法&gt;

- (1) 先卸下电机轮②上的皮带④。
- (2) 卸下上板⑤, 松开轴上2个套圈螺丝⑥。
- (3) 卸下固定螺丝⑦, 松开2个小螺丝⑧, 从上轴⑨卸下上轮⑩。
- (4) 松开螺栓⑪, 从基板孔中拉出上轴BR盒⑫。
- (5) 同步皮带轮④在基板孔中能拆卸和安装。
- (6) 皮带安装后, 请盖上上板⑤, 拧紧螺丝。

## &lt;Inserting the timing belt &gt;

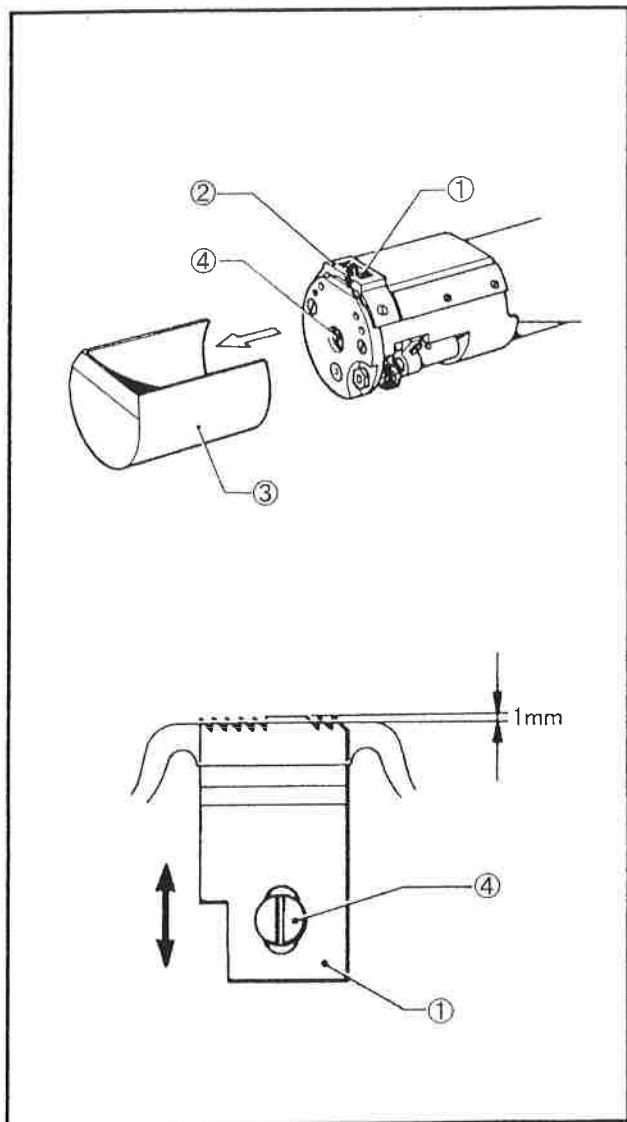
- (1) Turn the pulley toward you until the take-up lever reaches its highest point.
- (2) Turn the hook driving shaft ① until the point mark on the lower pulley ② comes in line with another point mark on the bed ③.
- (3) Insert a new timing belt ④ into the belt pulley at this position.

## &lt;Removing the timing belt &gt;

- (1) Remove the arm shaft connecting belt ④ from the lower pulley ②.
- (2) Move the arm cap ⑤ and loosen the bearing adapter sleeve screws ⑥.
- (3) Remove the screw ⑦ and loosen the two screws ⑧, then draw out the balance wheel ⑩ from the arm shaft ⑨.
- (4) Loosen the set screw ⑪ and draw out the ball bearing adapter ⑫ through the arm hole.
- (5) Removing and inserting the arm shaft connecting belt ④ is made through the hole drawn out the ball bearing adapter ⑫.
- (6) After inserting a new belt, replace the arm cap ⑤, screws to their original places securely.

## 5. 标准调整

### 5-2 送布牙的高度调整 / Adjusting the height of the feed dog



送布牙①在最高位置时, 应高出针板②1mm左右。

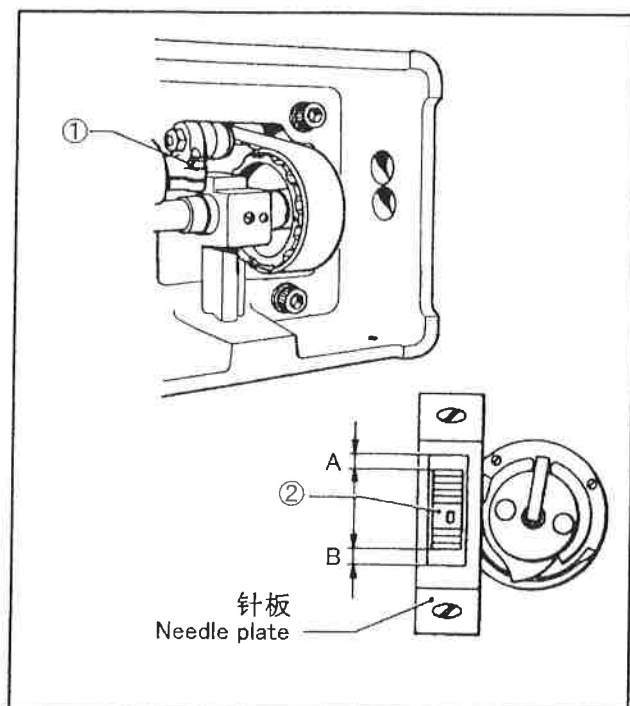
※带有包边器的缝纫机, 应将送布牙和针板调整为相同高度。

- (1) 转动上轮, 使送布牙①至最高位置。
- (2) 卸下筒盖③。
- (3) 松开螺丝④, 使送布牙①作上下移动调整高度。

The maximum height of the feed dog ① from the surface of the needle plate ② is normally 1 mm.

- (1) Turn the pulley so as to raise the feed dog ① to its highest point.
- (2) Draw out the cylinder cover ③.
- (3) Loosen the set screw ④.
- (4) Raise or lower the feed dog ① as necessary.
- (5) Securely tighten the screw ④ and replace the cylinder cover ③.

## 5-3 针板、机针与送布牙组装 / Assembly of the needle plate, the needle and the feed dog

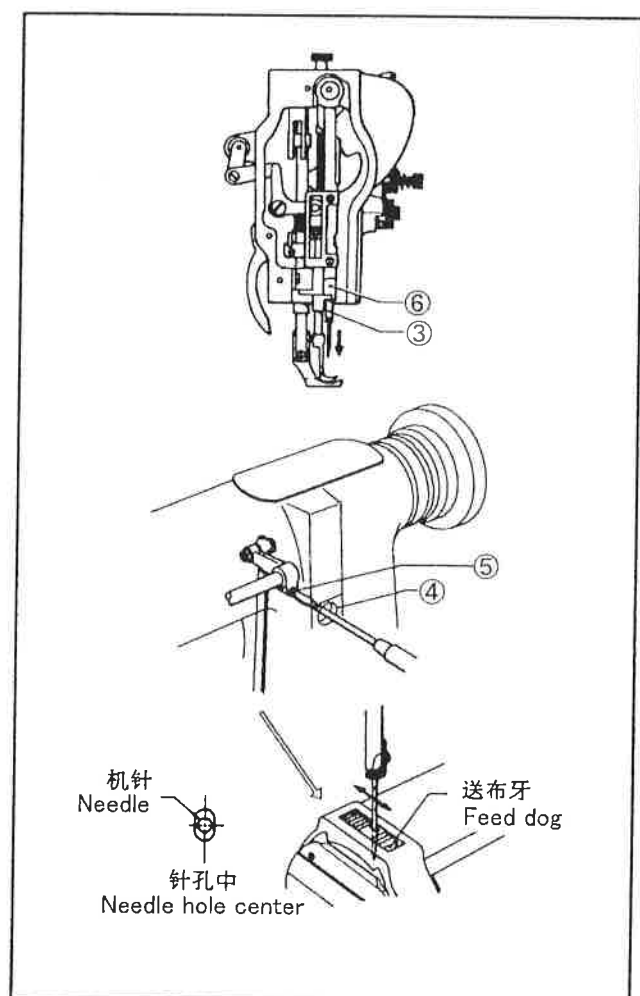


<送布牙与针板的位置>

- (1) 进针量设定为最大。
- (2) 在送布牙②活动状态时, 均匀调整A和B的间距、  
松开螺丝①调整送布牙②的位置。
- (3) 最后拧紧螺丝①。

<Positions of the feed dog and needle plate>

- (1) Adjust the feed motion to the maximum.
- (2) Loosen the screw ① and set the position of the feed dog ② so that both clearances A and B are equal when the feed dog ② moves all the way to the backward or forward.
- (3) Securely tighten the screw.



<机针与送布牙针孔的位置>

转动上轮, 使针杆③慢速下降, 确认机针落于送布牙针孔的中心位置。

※当机针落针于送布牙针孔的中心位置时, 从孔④  
松开螺丝⑤, 手持针杆支架⑥的下部, 拧紧螺丝⑤  
调整其位置。

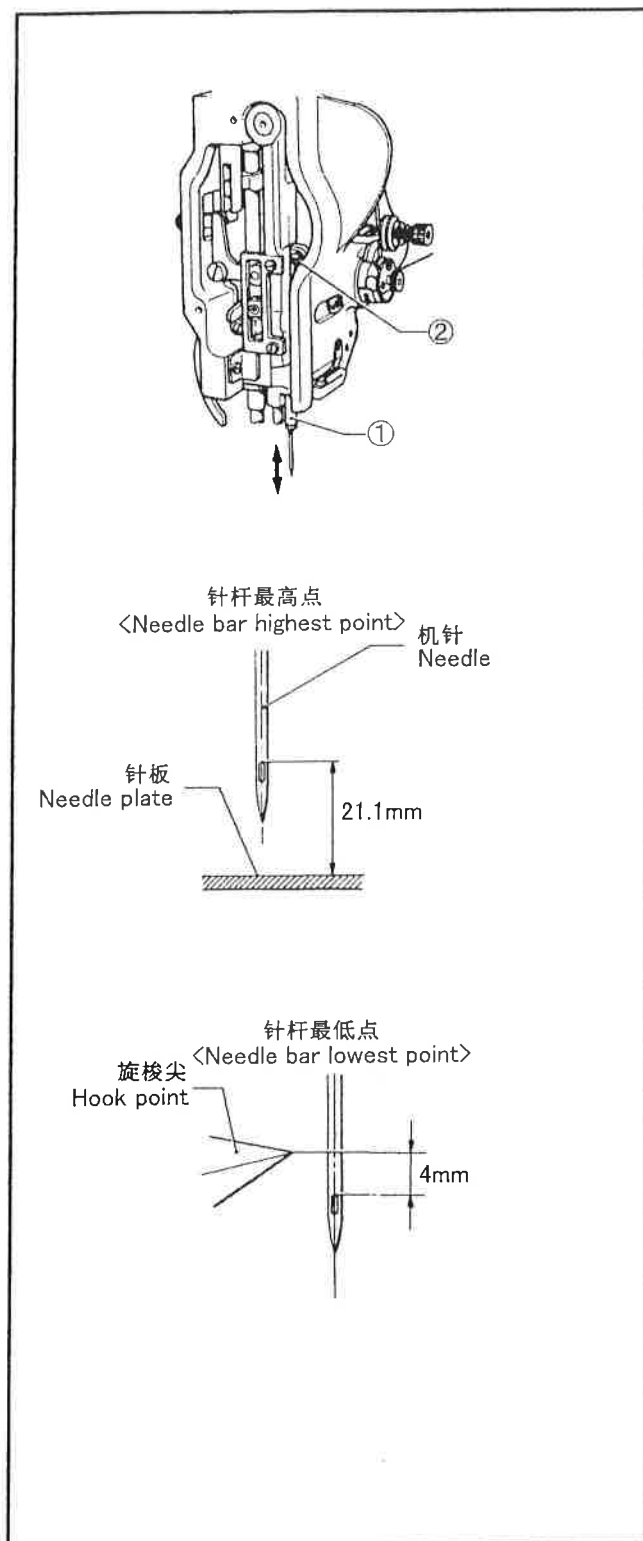
<Positions of the needle and needle hole of the feed dog>

Turning the pulley to lower the needle bar ③ slowly, check whether the needle descends to the center of the needle hole of the feed dog or not.

NOTE: If the needle does not enter into the center of the hole, loosen the screw ⑤ through the window of the arm ④. Holding the bottom of the needle bar rock frame ⑥, move it as may be required to get the correct position to the feed dog. Then, tighten the screw ⑤.

## 5. 标准调整

### 5-4 调整针杆高度 / Adjusting the height of the needle bar



针杆①在最高点时, 从针板表面至针孔上缘的标准间距为21.1mm。

松开螺丝②, 移动针杆①进行调整。

这种调整能在针杆处于最下端时进行。这时, 旋梭尖至针孔上缘应为4mm。

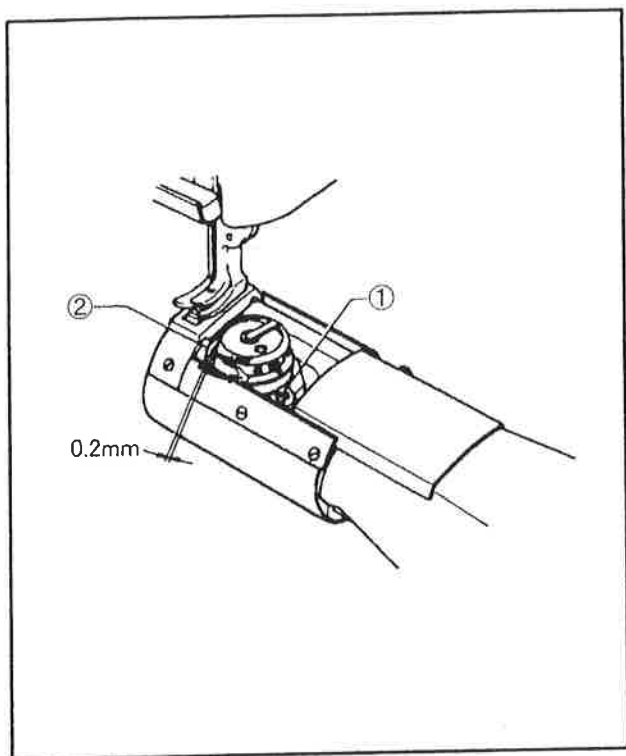
When the needle bar ① is at its highest position, normally the measurement between the surface of the needle plate and the upper end of the needle eye is 21.1 mm.

To adjust this, loosen the screw ② and move the setting position of the needle bar ① to get the correct position. Then tighten the screw.

There is another method for this adjustment by setting the needle bar to its lowest point. There should be 4 mm from the hook point to the upper end of the eye of a needle.

## 5. 标准调整

### 5-6 调整旋梭,梭心及分线勾 / Adjusting relative position between hook and bobbin case opener



(1) 松开螺丝①, 转动上轮, 使梭心分线勾②处于最右侧位置。

(2) 这时, 将梭心分线勾②的内缘至旋梭之间的间隙调整为0.2mm。

(3) 调整后, 拧紧螺丝②。

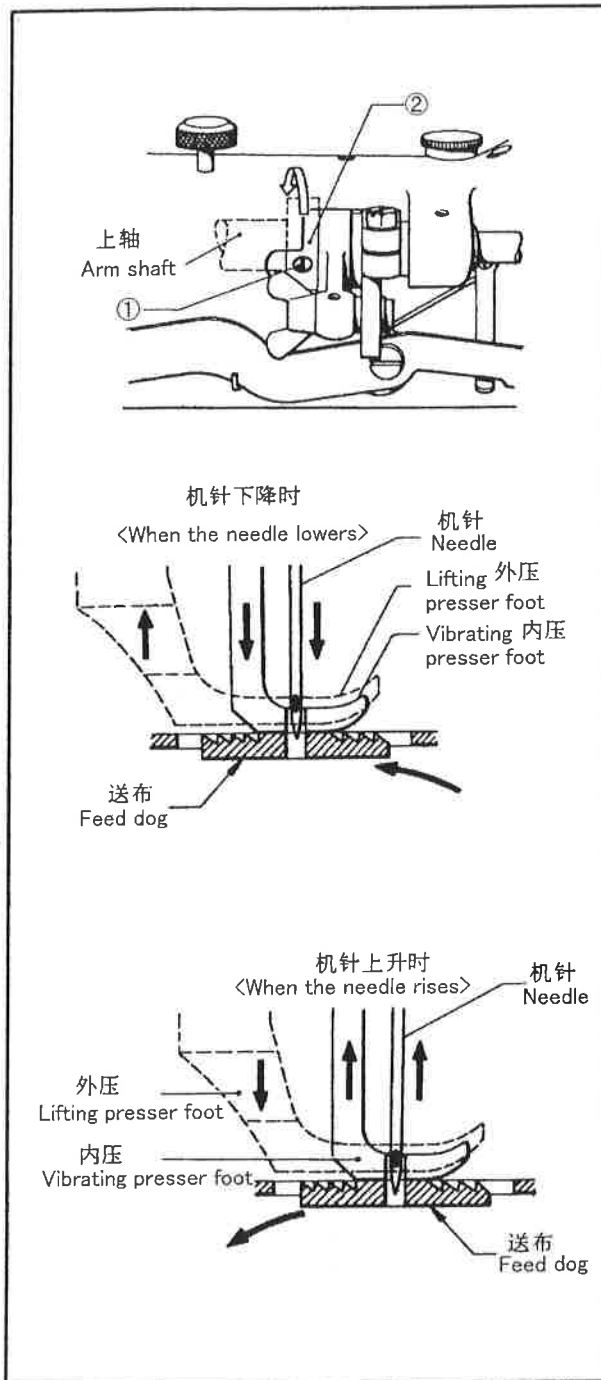
(1) Loosen the screw ① and turn the pulley until the bobbin case opener ② is located at the extreme right hand position of its travel.

(2) In this position, adjust it so that the clearance between the inside edge of the bobbin case opener ② and the tab on the hook is about 0.2 mm.

(3) After adjustment, tighten the screw ②.

## 5.标准调整

### 5-8 调整内压脚 / Adjusting the timing of the inside presser foot



(1) 放下压脚抬升柄, 使上轮向作业侧转动, 在机针针尖到达送布牙时, 内外压脚应同时到达送布牙位置。

(2) 当机针上升, 针尖离开送布牙时, 内外压脚应同时离开送布牙。

※ 当机针刺入缝制物的瞬间, 内压脚尚未压住缝制物时, 将成为跳针的原因。

(3) 内外压脚的同步, 可松开两个旋梭固定螺丝①, 转动旋梭②进行调整。

Check the inside presser foot timing as follows:

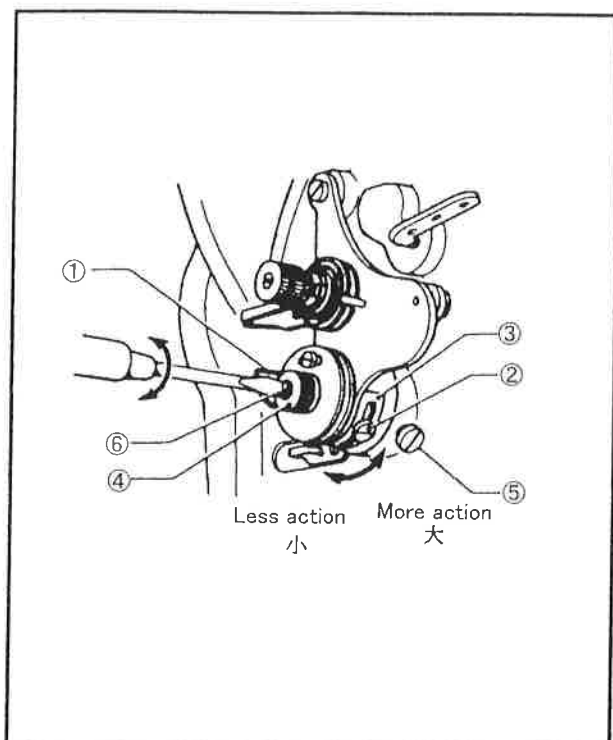
(1) Lower the presser bar lifting lever, then turn the pulley toward you. At this time, the vibrating presser foot should reach the feed dog before the needle eye does.

(2) When the needle is raised, make sure the vibrating presser foot is still holding the material firmly. If the vibrating presser foot rises while the needle is still penetrating to the material, it may cause skipped stitches, etc.

If the timing is not correct after you make these adjustments:

(3) To synchronize the timing of the alternating presser feet, loosen the two screw ①, then turn the cam ②.

## 5-8 调整挂线弹簧 / Adjusting the thread take-up spring



## &lt;挂线弹簧的动作调整&gt;

加大挂线弹簧①的动作范围时, 请松开螺丝②, 将弹簧座③向右侧移动。减少挂线弹簧的动作范围时, 则可将弹簧座③向左侧移动。

## &lt;挂线弹簧的强度调整&gt;

加大弹簧①强度时, 松开螺母④和螺丝⑤, 用螺丝刀将调线杆⑥向左侧旋转进行调整。将弱时, 向右侧旋转进行调整。调整后请拧紧螺丝。

## &lt;Action of the spring&gt;

- (1) For more controller action on the thread, loosen the screw ② and move the spring stopper ③ to the right. For less action, loosen the screw ② and set the spring stopper ③ to the left.

- (2) Tighten the screw ②.

## &lt;Tension of the spring&gt;

- (1) loosen the thread tension nut ④, and screw ⑤.

- (2) To increase the spring tension, slightly turn the tension screw stud ⑥ counterclockwise using a screw driver. To decrease the tension, turn the stud clockwise.

- (3) After adjustment, tighten the tension thumb nut ④, and screw ⑤.

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