

GC6890

INSTRUCTION BOOK



HIGH SPEED SEWING MACHINE



TYPICAL

IMPORTANT SAFETY INSTRUCTIONS

To get the most out of the many functions of this machine and operate it in safety, it is necessary to use this machine correctly. Please read this instruction Manual carefully before use. We hope you will enjoy the use of your machine for a long time. Please remember to keep this manual in a safe place.

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.
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 uses 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 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

FOR SAFE OPERATION

 DANGER	<ol style="list-style-type: none">1. To avoid electrical shock hazards, neither open the cover of the electrical box for the motor nor touch the components mounted inside the electrical box.
 CAUTION	<ol style="list-style-type: none">1. To avoid personal injury, never operate the machine with any of the belt cover, Finger guard or safety devices removed.2. To prevent possible personal injuries caused by being caught in the machine, Keep your fingers, head and clothes away from the handwheel, V belt and the motor while the machine is operation. In addition, place nothing around them.3. To avoid personal injury, never put your hand under the needle when you turn "ON" the power switch or operate the machine.4. To avoid personal injury, never put your fingers into the thread take-up cover while the machine is in operation.5. The hook rotates at a high speed while the machine is in operation. To prevent possible injury to hands, be sure to keep your hands away from the vicinity of the hook during operation. In addition, be sure to turn OFF the power to the machine when replacing the bobbin.6. To avoid possible personal injuries, be careful not to allow your fingers in the machine when tilting/raising the machine head.7. To avoid possible accidents because of abrupt start of the machine, turn OFF the power to the machine when tilting the machine head.8. If your machine is equipped with a servo-motor, the motor does not produce noise while the machine is at rest. To avoid possible accidents due to abrupt start of the machine, be sure to turn OFF the power to the machine.9. To avoid electrical shock hazards, never operate the sewing machine with the ground wire for the power supply removed.10. To prevent possible accidents because of electric shock or damaged electrical components(s), turn OFF the power switch in prior to the connection/disconnection of the power plug.

BEFORE OPERATION



CAUTION:

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

- Before you put the machine into operation for the first time after the set up, clean it thoroughly.
- Remove all dust gathering during transportation and oil it well.
- Confirm that the power plug has been properly connected to the power supply.
- Never use the machine in the state where the voltage type is different from the designated one.
- The direction of rotation of the sewing machine is counterclockwise as observed from the handwheel side. Be careful not to rotate it in reverse direction.

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◆ PARTS BOOK

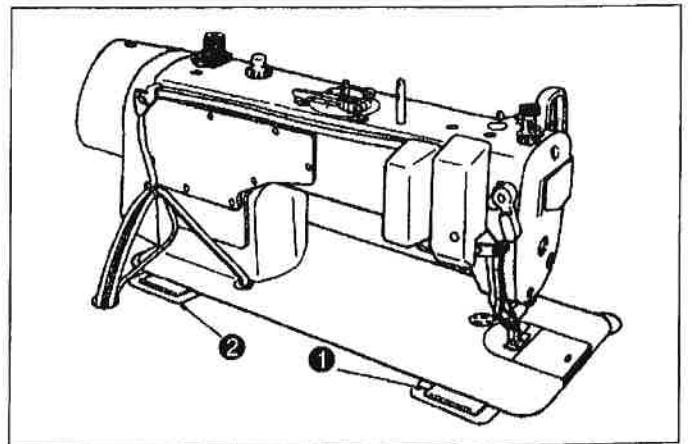
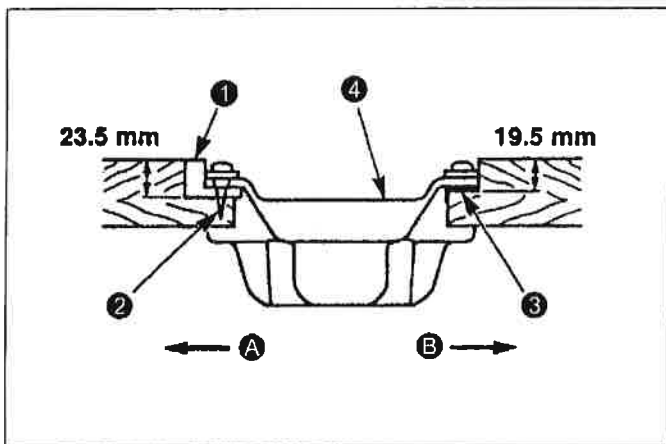
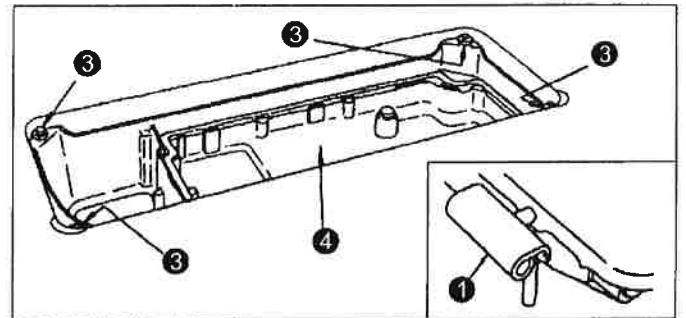
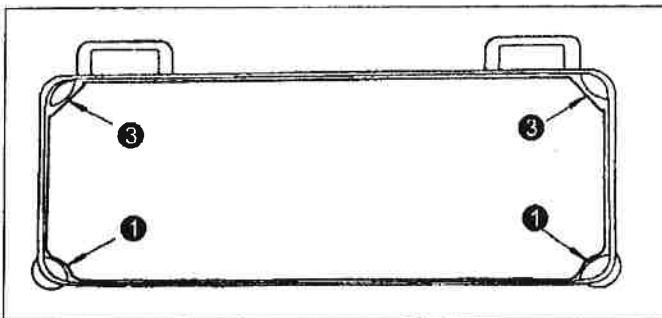
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1. 规格 / SPECIFICATIONS

用途	一般布料、薄料、中厚料
缝纫速度	最高 5,000 rpm
最大针脚长度	4 mm
机针	DBX1 #9~#18
压脚高度 (膝动提升)	10mm (标准) 13mm (最大)
使用机油	0号白油

Application	General fabrics, light-weight and medium-weight materials
Sewing speed	Max. 5,000 rpm
Max. Stitch length	4 mm
Needle	DB x 1 #9 to #18
Presser foot lift	10 mm (standard) 13 mm (Max.)
Lubricating oil	White Oil 0
Noise	Workplace-related noise at sewing speed $n = 4,500 \text{ min}^{-1} : L_{PA} \leq 83 \text{ dB(A)}$ Noise measurement according to DIN 45635-48-A-1.

2. 缝纫机的安装 / INSTALLATION



(1) 底槽的安装

- 1) 把底槽支到机台沟的四角上。
- 2) 用螺钉②把前侧的A 2个头部橡胶支座①钉到机台的伸出部, 再用螺钉②把铰链侧B 的2个头部胶垫座③钉好固定, 然后把底槽④放上去。
- 3) 把铰链①放到机台的孔上, 对准台板橡胶支座②, 把头部放到四角的机头胶垫③上。

(1) Installing the under cover

- 1) The oil pan should rest on the four corners of the machine table groove.
- 2) Fix two rubber seats ① on side A (operator's side) using nails ② as illustrated above. Fix two cushion seats ③ on side B (hinged side) using a rubber-based adhesive. Then place oil pan ④ on the fixed seats.
- 3) Fit hinge ① into the opening in the machine bed, and fit the machine head to table rubber hinge ② before placing the machine head on cushions ③ on the four corners.

3. 膝动提升高度的调整 / ADJUSTING THE HEIGHT OF THE KNEE LIFTER

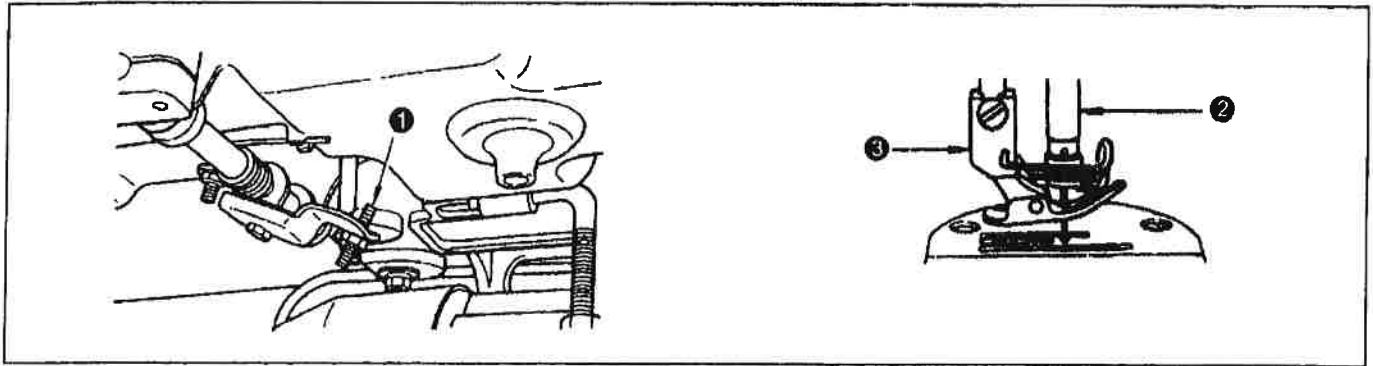
注意

为了防止意外的起动造成的事故，请关掉电源后进行。



WARNING:

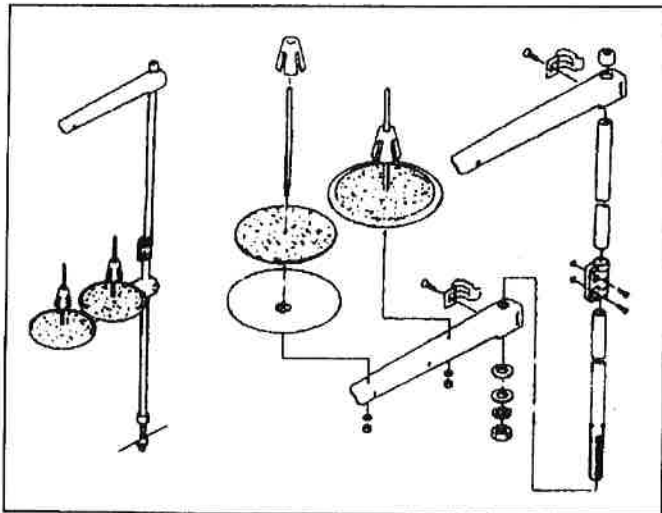
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



- 1) 膝动提升的压脚标准高度为10mm。
- 2) 调节膝动提升调节螺丝 ① 可以把压脚高度最大调整到13mm。(A型时最大为9mm。)
- 3) 压脚提升到 10 mm 以上时，请注意针杆 ② 的前端下降到最底下时，不能碰到压脚 ③。

- 1) The standard height of the presser foot lifted using the knee lifter is 10 mm.
- 2) You can adjust the presser foot lift up to 13 mm using knee lifter adjust screw ①. (Max. 9 mm for A type)
- 3) When you have adjusted the presser foot lift to over 10 mm, be sure that the bottom end of needle bar ② in its lowest position does not hit presser foot ③.

4. 线架装置的安装 / INSTALLING THE THREAD STAND



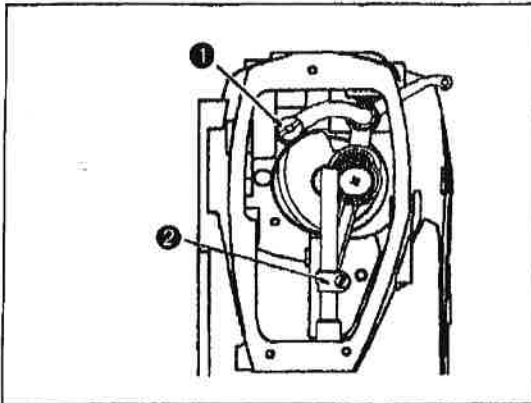
5. 加润滑脂 / LIPIN

注意

为了防止意外的起动机造成的事故，请关掉电源后进行。

WARNING:

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- 1) 请先卸下挑线连杆销①上的小螺钉后，将润滑脂注满挑线连杆销①的小孔内。
- 2) 请先拆下针杆连接柱组件后卸下针杆连接柱②上的小螺钉，将润滑脂注满针杆连接柱②的小孔内。

- 1) Full pore of the thread take-up crank shaft ① with lipin before disassembly small screw of the thread take-up crank shaft ①.
- 2) Disassembly small screw before Disassembly the needle rod holder ASM, then full pore of the needle bar connection ASM ② with lipin.

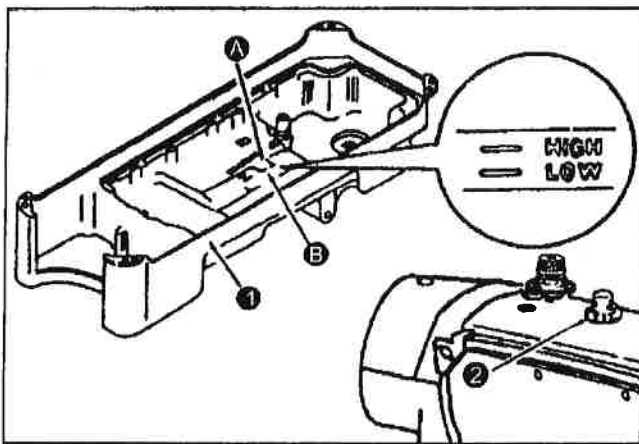
6. 加油 / LUBRICATION

注意

为了防止意外的起动机造成的事故，请关掉电源后进行。

WARNING:

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



运转缝纫机前

- 1) 请把机油倒进油槽①里，一直加到 HIGH 标记 A 的位置。
- 2) 油槽的油面降到 LOW 标记 B 以下时，请再次补充机油。
- 3) 加油后运转缝纫机，如果润滑正常时，可以通过油窗②看到油的流动。
- 4) 油流动量的多少，与油量的多少无关。



新缝纫机或较长时间没有使用的缝纫机在使用之前，应进行 10 分钟 3,000~3,500 rpm 的磨合运转。

Information on lubrication

- 1) Fill oil pan ① with Machine Oil up to HIGH mark A.
- 2) When the oil level lowers below LOW mark B, refill the oil pan with the specified oil.
- 3) When you operate the machine after lubrication, you will see splashing oil through oil sight window ② if the lubrication is adequate.
- 4) Note that the amount of the splashing oil is unrelated to the amount of the lubricating oil.



When you first operate your machine after setup or after an extended period of disuse, run your machine at 3,000 to 3,500 rpm. for about 10 minutes for the purpose of break-in.

7. 关于旋梭部油量（迹）调整方法 /

ADJUSTING THE AMOUNT OF OIL (OIL SPLASHES) IN THE HOOK

注意

旋梭是以高速运转。为了防止人身事故，调整油量时，请加以充分的注意。

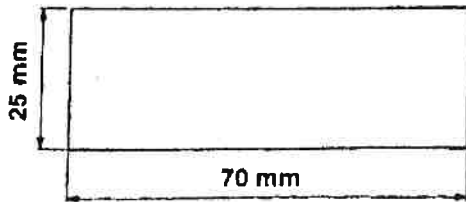


WARNING:

Be extremely careful about the operation of the machine since the amount of oil has to be checked by turning the hook at a high speed.

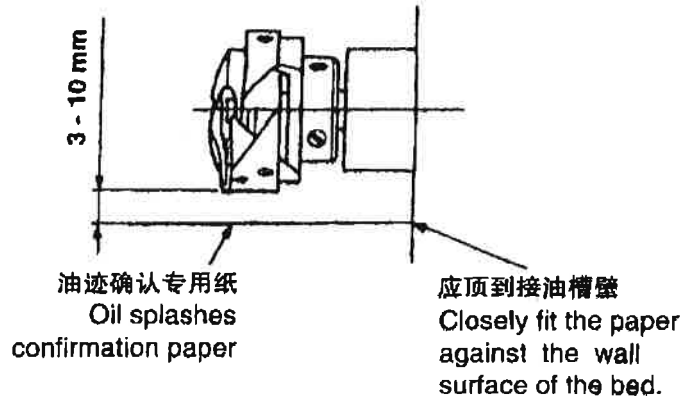
① 油量（迹）确认专用纸

Amount of oil (oil splashes) confirmation paper



② 油量（迹）确认位置

Position to confirm the amount of oil (oil splashes)



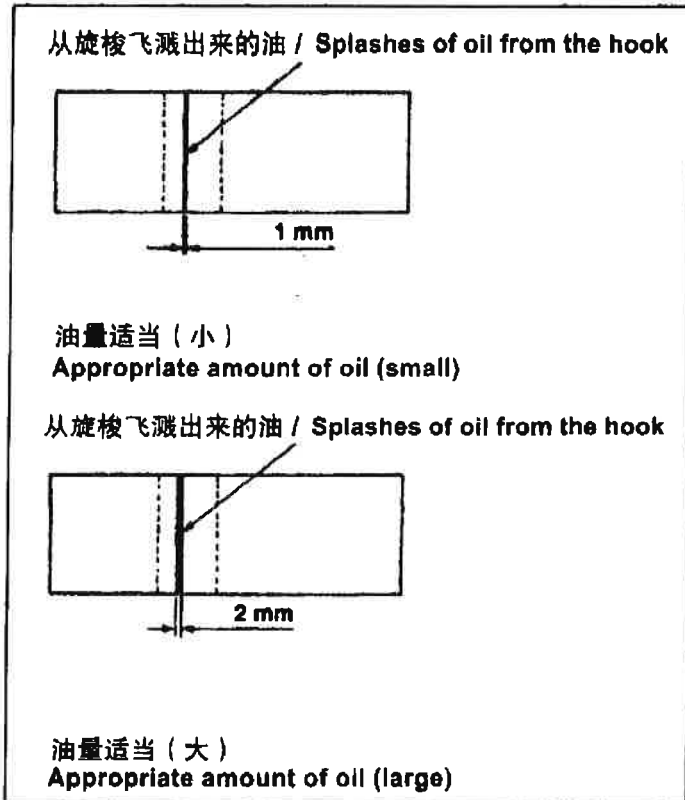
* 进行下列2)的作业时，请卸下滑板，同时要充分注意手指不要碰到旋梭。

- 1) 冷机头时，请进行3分钟左右的空运转。（适当的断续运转）
- 2) 油量（迹）确认专用纸在缝纫机转动后的状态下插进去。
- 3) 请确认油量的油面高度应在HIGH和LOW的范围之内。
- 4) 确认油量（迹）所需要的时间为5秒钟。（应看着表）

* When carrying out the procedure described below in 2, remove the slide plate and take extreme caution not to allow your fingers to come in contact with the hook.

- 1) If the machine has not been sufficiently warmed up for operation, make the machine run idle for approximately three minutes. (Moderate intermittent operation)
- 2) Place the amount of oil (oil splashes) confirmation paper under the hook while the sewing machine is in operation.
- 3) Confirm the height of the oil surface in the oil reservoir is within the range between "HIGH" and "LOW"
- 4) Confirmation of the amount of oil should be completed in five seconds. (Check the period of time with a watch.)

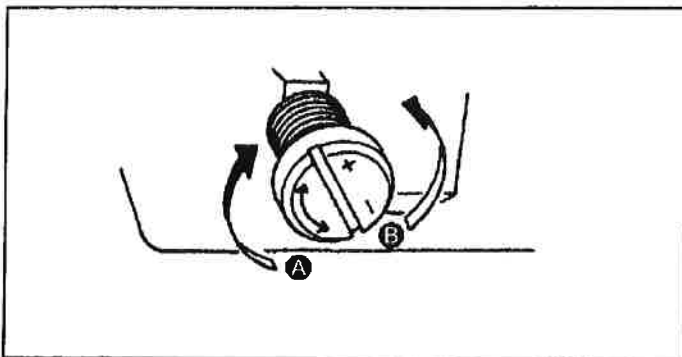
• 油量 (油迹) 适合标准 / Sample showing the appropriate amount of oil



- 1) 左图标样根据缝制供需需要微调增减, 但注意不要过大增加或减少。
(油量过少时, 会烧坏旋梭 (发热)。油量过多时, 会脏污缝制品。)
- 2) 油量 (油迹) 应确认3次 (3张) 均无变化。

- 1) The amount of oil shown in the samples on the left should be finely adjusted in accordance with sewing processes. Be careful not to excessively increase/decrease the amount of oil in the hook. (If the amount of oil is too small, the hook will be seized (the hook will be hot). If the amount of oil is too much, the sewing product may be stained with oil.)
- 2) Adjust the amount of oil in the hook so that the oil amount (oil splashes) should not change while checking the oil amount three times (on the three sheets of paper)

• 旋梭油量 (迹) 调整 / Adjusting the amount of oil



- 1) 把下轴前端金属部件上的油量调节螺丝向 “+” 的方向 (A方向) 转动, 油量 (迹) 变多, 向 “-” 的方向 (B方向) 转动, 油量 (迹) 变少。
- 2) 油量调节螺丝调整后的油迹, 应空运转 30 秒钟左右进行油量 (迹) 的确认。

- 1) Turning the oil amount adjustment screw attached on the hook driving shaft front bushing in the “+” direction (in direction A) will increase the amount of oil (oil spots) in the hook, or in the “-” direction (in direction B) will decrease it.
- 2) After the amount of oil in the hook has been properly adjusted with the oil amount adjustment screw, make the sewing machine run idle for approximately 30 seconds to check the amount of oil in the hook.

8. 机针的安装 / ATTACHING THE NEEDLE

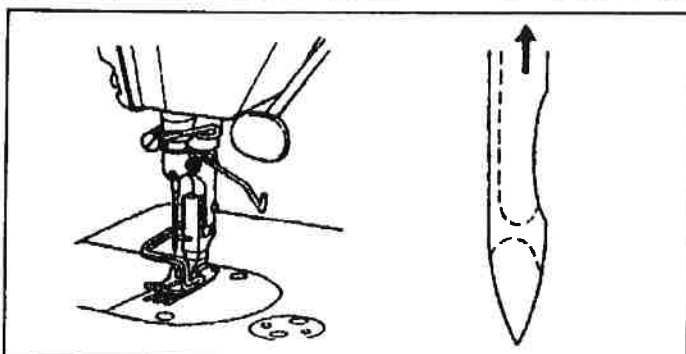
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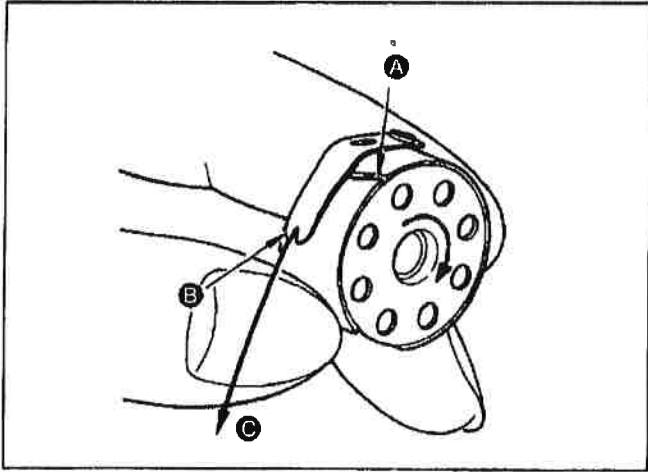


WARNING:

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

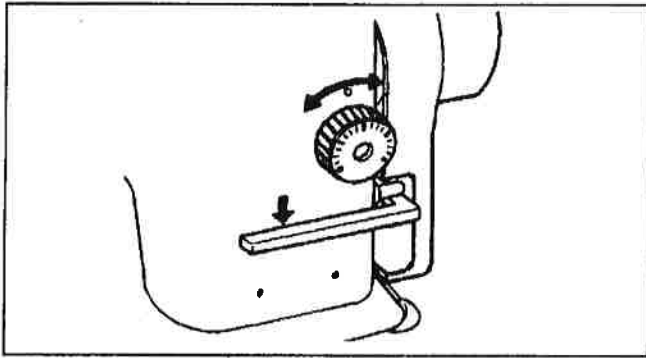


9. 梭心的安装方法 / SETTING THE BOBBIN INTO THE BOBBIN CASE

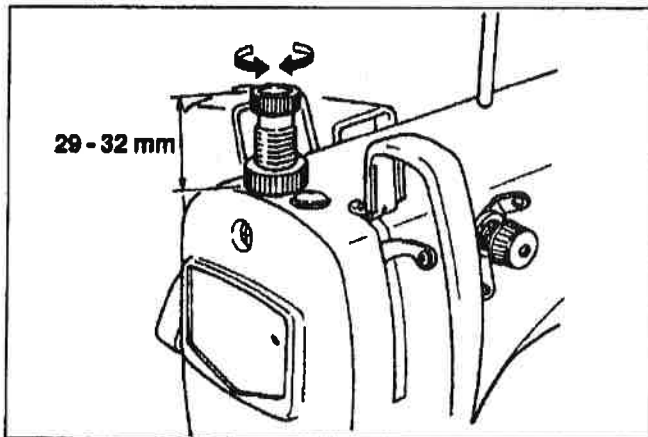


- 1) 把线穿过梭壳的穿线口A，然后把线往B方向拉，从线张力弹簧下面的穿线口B拉出来。
 - 2) 拉底线C，确认梭心是否按箭头方向转动。
- 1) Pass the thread through thread slit A, and pull the thread in direction B.
By so doing, the thread will pass under the tension spring and come out from notch B.
 - 2) Check that the bobbin rotates in the direction of the arrow when thread C is pulled.

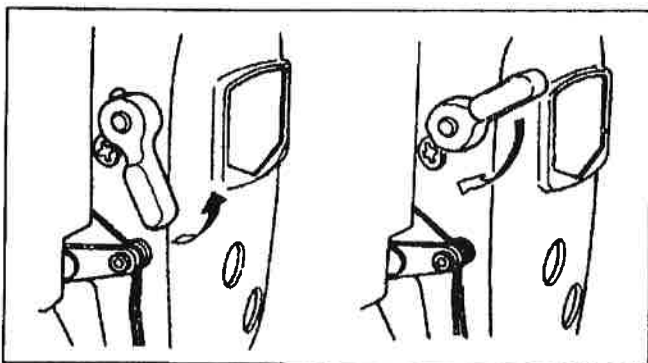
10. 线迹长度的调节 / ADJUSTING THE STITCH LENGTH



11. 压脚压力的调节 / PRESSER FOOT PRESSURE



12. 关于压脚提升 / HAND LIFTER



13. 压脚杆高度的调整 / ADJUSTING THE HEIGHT OF THE PRESSER BAR

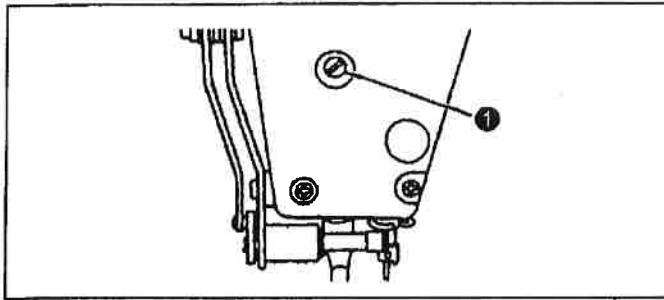
注意

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WARNING:

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1) 变更压脚杆的高度或压脚的角度时，请拧松压脚杆套管固定螺丝①进行调整。

2) 调整后，拧紧固定螺丝①。

1) Loosen setscrew ①, and adjust the presser bar height or the angle of the presser foot.

2) After adjustment, securely tighten the setscrew ①.

14. 上线的穿线方法 / THREADING THE MACHINE HEAD

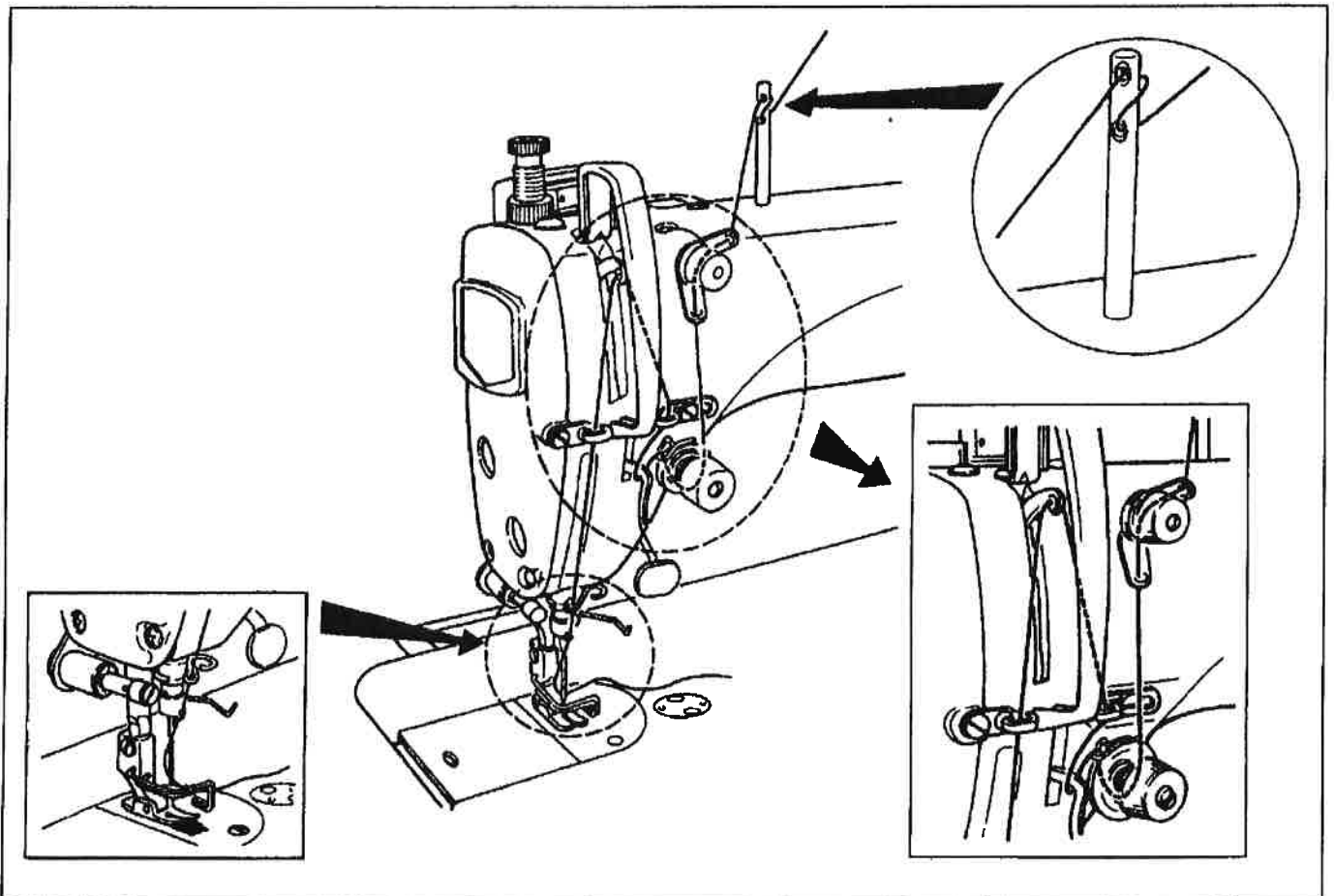
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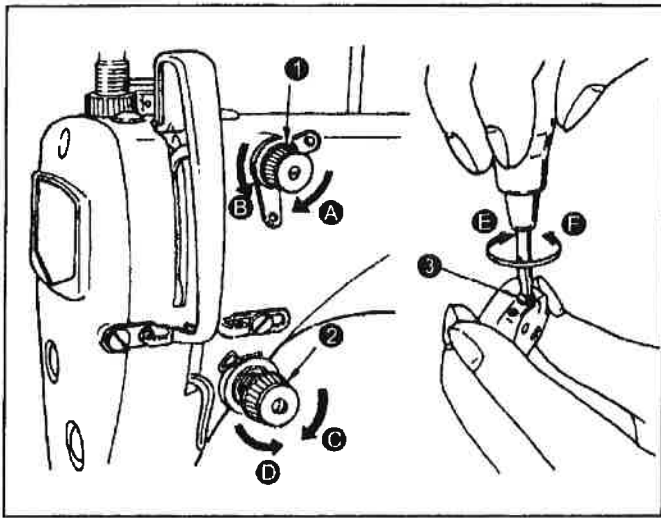


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15. 线张力器 / THREAD TENSION



(1) 上线张力的调整

- 1) 向右 **A** 的方向转动第一线张力螺母 **1**，切线后残留在机针上的线长度变短。
- 2) 向左 **B** 的方向转动，则长度变长。
- 3) 向右 **C** 的方向转动第二线张力螺母 **2**，上线张力变强。
- 4) 向左 **D** 的方向转动，则上线张力变弱。

(2) 底线张力的调整

- 1) 向右 **E** 的方向转动线张力螺丝 **3**，底线张力变强。
- 2) 向左 **F** 的方向转动线张力螺丝，则底线张力变弱。

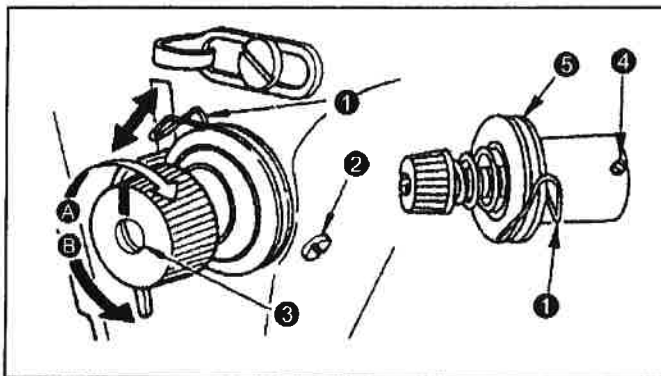
(1) Adjusting the needle thread tension

- 1) As you turn thread tension No.1 nut **1** clockwise (in direction **A**), the thread remaining on the needle after thread trimming will be shorter.
- 2) As you turn nut **1** counterclockwise (in direction **B**), the thread length will be longer.
- 3) As you turn thread tension No.2 nut **2** clockwise (in direction **C**), the needle thread tension will be increased.
- 4) As you turn nut **2** counterclockwise (in direction **D**), the needle thread tension will be decreased.

(2) Adjusting the bobbin thread tension

- 1) As you turn tension adjust screw **3** clockwise (in direction **E**), the bobbin thread tension will be increased.
- 2) As you turn screw **3** counterclockwise (in direction **F**), the bobbin thread tension will be decreased.

16. 挑线弹簧 / THREAD TAKE-UP SPRING



(1) 挑线弹簧**1**的行程量调整

- 1) 拧松线张力台的固定螺丝 **2**。
- 2) 向右 **A** 的方向转动线张力杆 **3**，则行程量变大。
- 3) 向左 **B** 为了防止布的跑偏，需要提早。

(2) 挑线弹簧**1**的压力调整

- 1) 拧松固定螺丝 **2**，卸下线张力杆 **5**。
- 2) 拧松线张力杆固定螺丝 **4** 进行调整。
- 3) 向右 **A** 的方向转动线张力杆 **3** 则压力变强。
- 4) 向左 **B** 的方向转动压力则压力变弱。

(1) Changing the stroke of thread take-up spring **1**

- 1) Loosen setscrew **2**.
- 2) As you turn tension post **3** clockwise (in direction **A**), the stroke of the thread take-up spring will be increased.
- 3) As you turn the knob counterclockwise (in direction **B**), the stroke will be decreased.

(2) Changing the pressure of thread take-up spring **1**

- 1) Loosen setscrew **2**, and remove thread tension (asm) **5**.
- 2) Loosen setscrew **4**.
- 3) As you turn tension post **3** clockwise (in direction **A**), the pressure will be increased.
- 4) As you turn the post **3** counterclockwise (in direction **B**), the pressure will be decreased.

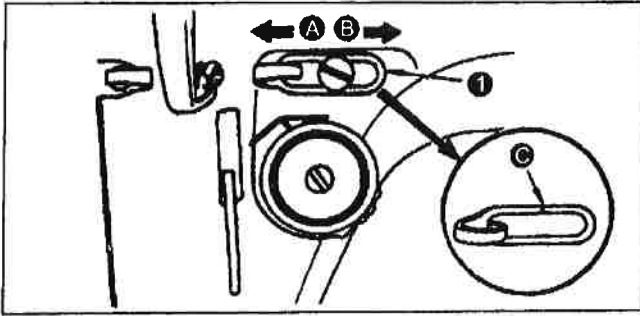
17. 挑线杆挑线量的调整 / ADJUSTING THE THREAD TAKE-UP STROKE

注意

为了防止意外的启动造成的事故，请关掉电源后进行。

WARNING:

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



- 1) 缝制厚料时，向左A的方向移动线导向器①，则挑线量变多。
- 2) 缝制薄料时，向右B的方向移动线导向器①，则挑线量变少。
- 3) 线导向器①在刻线C对准螺丝的中心时是标准位置。

- 1) When sewing heavy-weight materials, move thread guide ① to the left (in direction A) to increase the length of thread pulled out by the thread take-up.
- 2) When sewing light-weight materials, move thread guide ① to the right (in direction B) to decrease the length of thread pulled out by the thread take-up.
- 3) Normally, thread guide ① is positioned in a way that marker line C is aligned with the center of the screw.

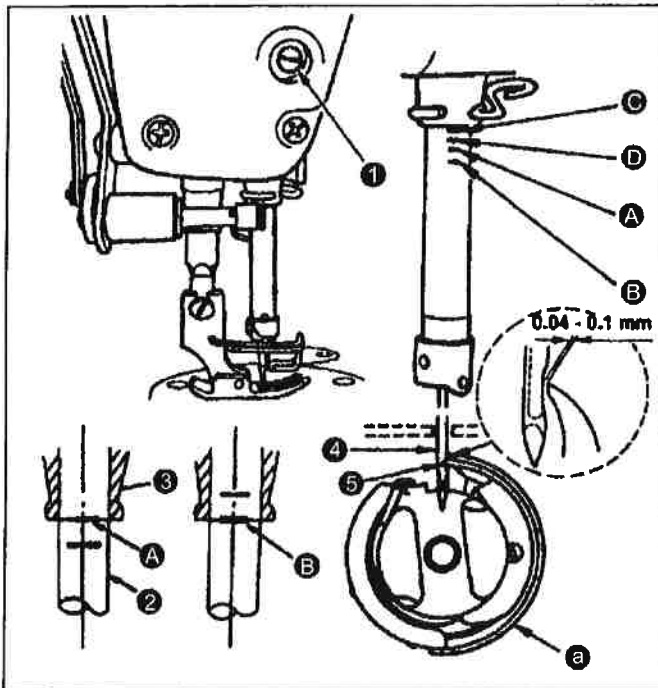
18. 机针与旋梭的关系 / NEEDLE-TO-HOOK RELATIONSHIP

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。

WARNING:

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



(1) 请按如下方法调整机针和旋梭。

- 1) 转动飞轮，让针杆降到最下点，然后拧松针杆套管固定螺丝①。

(决定针杆高度)

2) [DB针时]

把针杆②的刻线A对准针杆下套筒③的下端，然后拧紧针杆套管固定螺丝①。

[DA针时]

把针杆②的刻线C对准针杆下套筒③的下端，然后拧紧针杆套管固定螺丝①。

(决定旋梭③的安装位置)

3) [DB针时]

拧松3根旋梭固定螺丝，转动飞轮在针杆②上升的方向，把刻线B对准针杆下套筒③的下端。

[DA针时]

拧松3根旋梭固定螺丝，转动飞轮在针杆②上升的方向，把刻线D对准针杆下套筒③的下端。

- 4) 在此状态下，让旋梭尖⑤对准机针④的中心，把机针与旋梭的间隙调整为0.04~0.1mm（大致），然后拧紧螺丝。



间隙过小的话，会损伤旋梭尖。间隙过大的话，会跳针。

(1) Adjust the timing between the needle and the hook as follows:

1) Turn the handwheel to bring the needle bar down to the lowest point of its stroke, and loosen setscrew ①.

(Adjusting the needle bar height)

2) (For a DB needle) Align marker line A on needle bar ② with the bottom end of needle bar lower bushing ③, then tighten setscrew ①.

(For a DA needle) Align marker line C on needle bar ② with the bottom end of needle bar lower bushing ③, then tighten setscrew ①.

(Adjusting position of the hook a)

3) (For a DB needle) Loosen the three hook setscrews, turn the handwheel and align marker line B on ascending needle bar with the bottom end of needle bar lower bushing ③.

(For a DA needle) Loosen the three hook setscrews, turn the handwheel and align marker line D on ascending needle bar with the bottom end of needle bar lower bushing ③.

4) After making the adjustments mentioned in the above steps, align hook blade point ⑤ with the center of needle ④. Provide a clearance of 0.04 mm to 0.1mm (reference value) between the needle and the hook, then securely tighten setscrews in the hook.



If the clearance between the blade point of hook and the needle is smaller than the specified value, the blade point of hook will be damaged. If the clearance is larger, stitch skipping will result.

19. 送布牙的高度 / HEIGHT OF THE FEED DOG

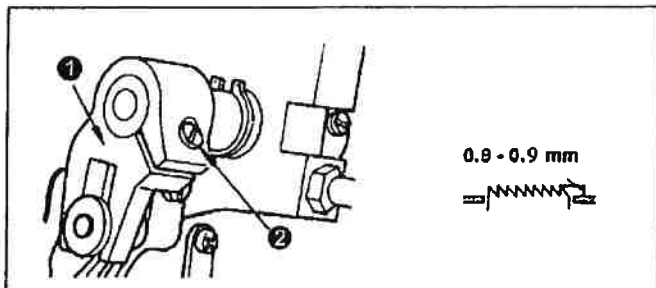


注意

为了防止意外的起动的事故，请关掉电源后进行。

WARNING:

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



调节送布牙的高度时

- ① 拧松上下送布双叉 ① 的紧固螺丝 ②。
- ② 上下移动送布台进行调节。
- ③ 拧紧固定螺丝 ②。



注意 紧固压力过弱的话，抬牙叉部的动作则变得不灵活了。

To adjust the height of the feed dog:

- ① Loosen screw ② of crank ①
- ② Move the feed bar up or down to make adjustment.
- ③ Securely tighten screw ②



If the calmping pressure is insufficient, the motion of the forked portion becomes heavy.

20. 送布牙的倾斜 / TILT OF THE FEED DOG

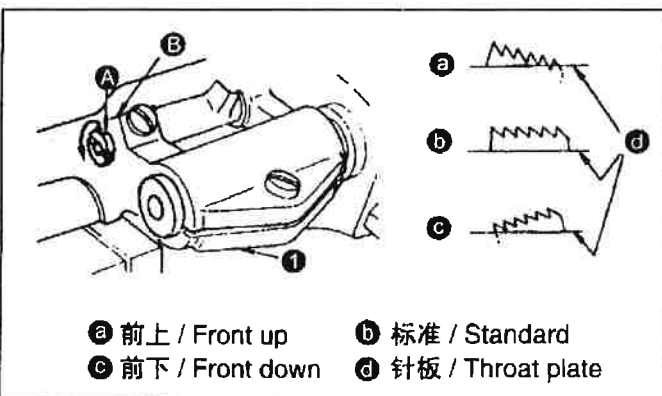


注意

为了防止意外的起动的事故，请关掉电源后进行。

WARNING:

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



- 1) 标准倾斜（水平）度是送布台轴的刻点 A 和送布台曲柄 ① 的 B 部一致时的位置。
(的标准倾斜是对 B 部呈 90 度水平送布面向轴侧的位置。)
- 2) 为了防止缝制皱摺，向前抬起送布牙时，请拧松固定螺丝，把螺丝刀插入送布台轴，然后沿箭头方向转 90 度。
- 3) 为了减少布的偏斜，向前下降送布牙时，请沿与箭头方向相反方向转 90 度。

- a 前上 / Front up b 标准 / Standard
- c 前下 / Front down d 针板 / Throat plate



调节了送布牙之后，送布齿的高度会有变化，请再次确认。

- 1) The standard tilt (horizontal) of the feed dog is obtained when marker dot **A** on the feed bar shaft is aligned with marker dot **B** on feed rocker **1**. (the marker dot **B** inclines forward the feed rocker shaft by 90°, as standard).
- 2) To tilt the feed dog with its front up in order to prevent puckering, loosen the setscrew, and turn the feed bar shaft 90° in the direction of the arrow, using a screwdriver.
- 3) To tilt the feed dog with its front down in order to prevent uneven material feed, turn the feed bar shaft 90° in the opposite direction from the arrow. (The standard tilt for.)



Whenever the feed dog tilt is adjusted, the feed dog height will be changed. So, it is necessary to check the height after tilt adjustment.

21. 送布相位的调节 / ADJUSTING THE FEED TIMING

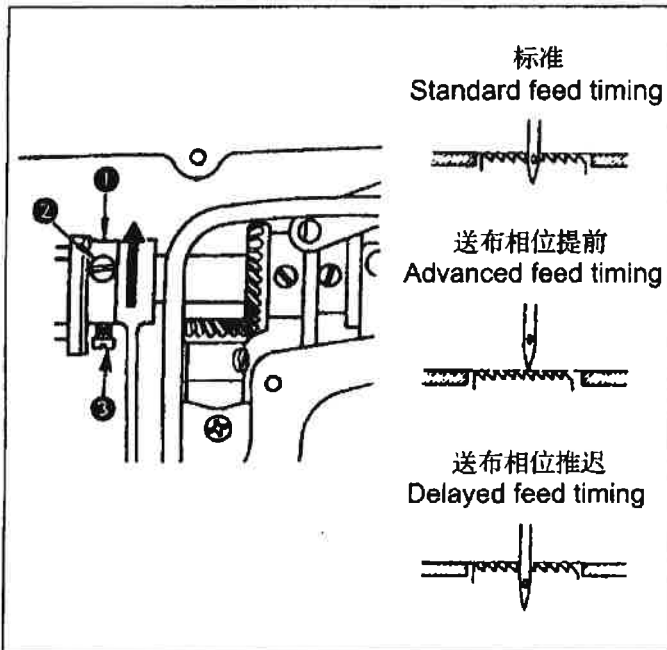
注意



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。

WARNING:

To avoid possible personal injury due to abrupt start of the machine, turn off the power to the machine and check to be sure that the motor has totally stopped rotating in prior.



- 1) 拧松送布偏心凸轮**1**的固定螺丝**2**、**3**，朝箭头方向或反箭头方向移动送布偏心凸轮，然后拧紧固定螺丝。
- 2) 标准调节位置是送布牙从针板下落时，送布牙上面与针孔上端对准针板上面的位置。
- 3) 提早送布相位以防止布偏斜时，请向箭头方向移动送布偏心凸轮。
- 4) 为了良好的紧线而推迟相位时，请逆箭头方向移动偏心凸轮。



移动距离过大会发生断针故障。

- 1) Loosen screws **2** and **3** in feed eccentric cam **1**, move the feed eccentric cam in the direction of the arrow or opposite direction of the arrow, and firmly tighten the screws.
- 2) For the standard adjustment, adjust so that the top surface of feed dog and the top end of needle eyelet are flush with the top surface of throat plate when the feed dog descends below the throat plate.
- 3) To advance the feed timing in order to prevent uneven material feed, move the feed eccentric cam in the direction of the arrow.
- 4) To delay the feed timing in order to increase stitch tightness, move the feed eccentric cam in the opposite, direction from the arrow.



Be careful not to move the feed eccentric cam too far, or else needle breakage may result.

22. 踏板压力和行程 / PEDAL PRESSURE AND PEDAL STROKE

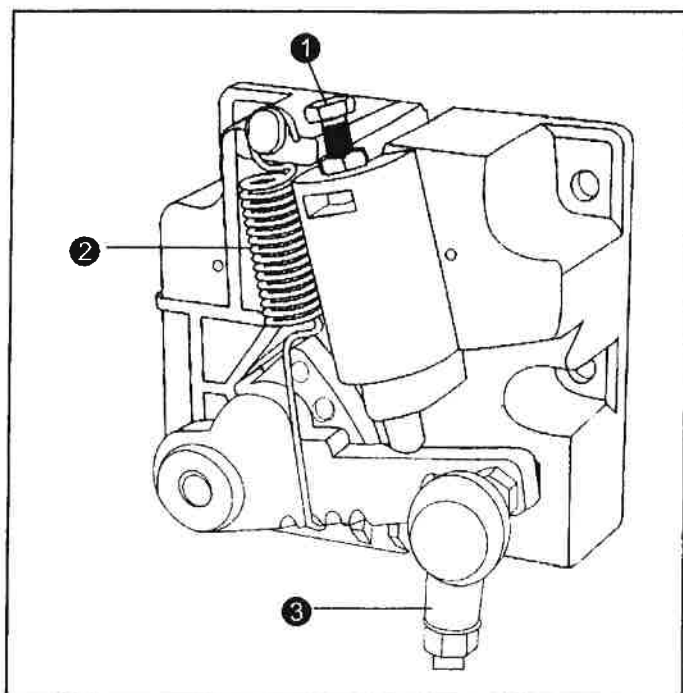
注意

为了防止意外的启动造成的事故，请关掉电源后进行。



WARNING:

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



(1) 踏板踩踏压力的调整

- 1) 换成前踩踏弹簧 ① 可以调整。
- 2) 把弹簧挂到左侧之后，压力变轻。
- 3) 挂到右侧之后变重。

(2) 踏板回踩力的调整

- 1) 用踏板回踩压力调节弹簧 ② 可以调整。
- 2) 拧进调节螺丝则压力变大。
- 3) 拧松调节螺丝则压力变小。

(3) 踏板踩踏行程的调整

- 1) 把连杆杆 ③ 插到右侧的孔里之后行程变大。

(1) Adjusting the pressure required to depress the front part of the pedal

- 1) This pressure can be changed by changing the mounting position of pedaling pressure adjust spring ①.
- 2) The pressure decreases when you hook the spring on the left side.
- 3) The pressure increases when you hook the spring on the right side.

(2) Adjusting the pressure required to depress the back part of the pedal

- 1) This pressure can be adjusted using regulator screw ②.
- 2) The pressure increases as you turn the regulator screw in.
- 3) The pressure decreases as you turn the screw out.

(3) Adjusting the pedal stroke

- 1) The pedal stroke increases when you insert connecting rod ③ into the right hole.

23. 踏板的调整 / ADJUSTMENT OF THE PEDAL

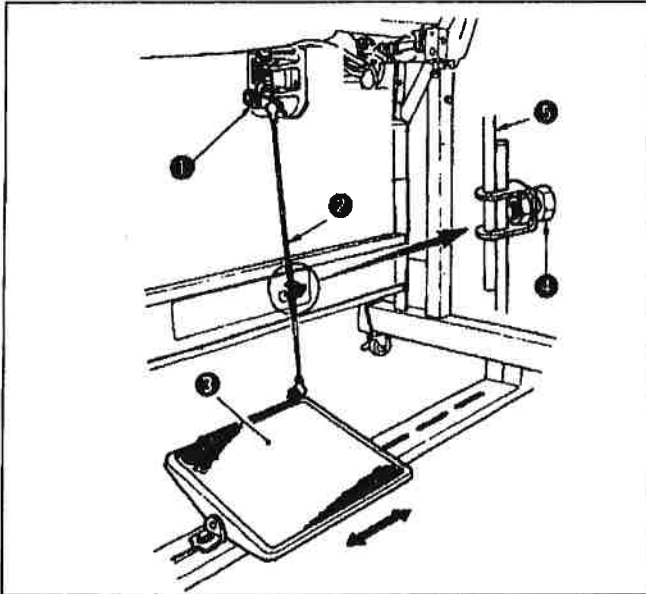
注意

为了防止意外的起动造成的事故，请关掉电源后进行。



WARNING:

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



(1) 连接杆的安装

- 1) 向箭头方向移动踏板调节板 ③，让踏板拨杆 ① 和连接杆 ② 呈一直线。

(2) 踏板的角度

- 1) 调节连接杆的长度就可以自由地改变踏板的倾斜度。
- 2) 拧松调节螺丝 ④，拉出插入连接杆 ⑤ 进行调整。

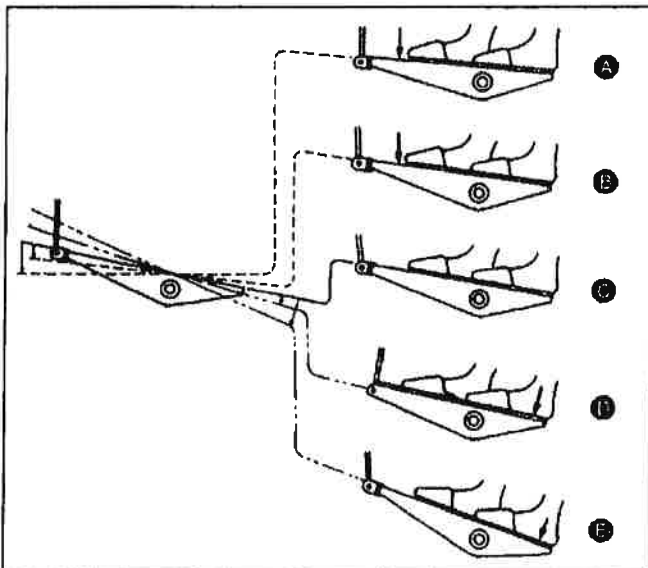
(1) Installing the connecting rod

- 1) Move pedal ③ to the right or left as illustrated by the arrow so that motor control lever ① and connecting rod ② are straightened.

(2) Adjusting the pedal angle

- 1) The pedal tilt can be freely adjusted by changing the length of the connecting rod.
- 2) Loosen adjust screw ④, and adjust the length of connecting rod ⑤.

24. 踏板操作 / PEDAL OPERATION



(1) 踏板按4个阶段进行操作。

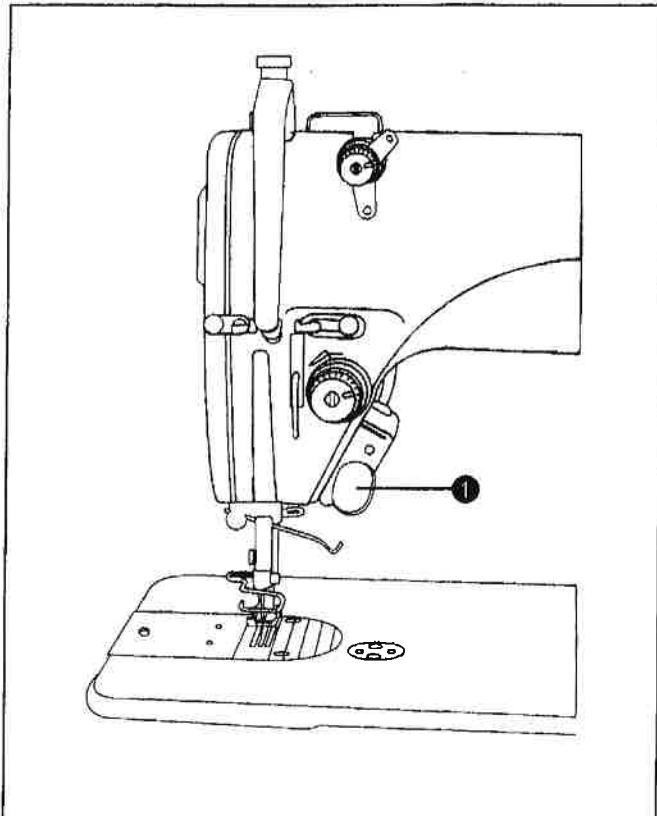
- 1) 向前轻轻踩踏板为低速缝制 ⑤。
- 2) 再用力向前踩踏板则变为高速缝制 ④。
(但是，开关设定为自动倒缝时，倒缝结束后进行高速缝制)
- 3) 把踏板返回到脚轻轻地放到踏板上的位置缝制机停止 ③。(机针上停止或下停止位置)
- 4) 用力向后踩踏板则为切线动作 ②。
* 使用自动压脚提升装置时，在停止和切线之间增加1级开关。向后轻轻的踩踏板为压脚提升动作 ①，再往后用力踩踏板为切线动作。

(1) The pedal is operated in the following four steps:

- 1) The machine runs at low sewing speed when you lightly depress the front part of the pedal. **B**
 - 2) The machine runs at high sewing speed when you further depress the front part of the pedal. **A**
(If the automatic reverse feed stitching has been preset, the machine runs at high speed after it completes reverse feed stitching)
 - 3) The machine stops (with its needle up or down) when you reset the pedal to its original position. **C**
 - 4) The machine trims threads when you fully depress the back part of the pedal. **E**
- * If your machine is provided with the Auto-lifter an addition step is given between the machine stop and thread trimming step. The presser foot goes up when you lightly depress the back part of the pedal **D**, and if you further depress the back part, the thread trimmer is actuated.

25. 触键手动倒缝 /

ONE-TOUCH TYPE REVERSE FEED STITCHING MECHANISM



(1) 使用方法

- 1) 按开关拨杆 **①**，缝纫机立即变为倒送，进行倒缝。
- 2) 按下拨杆的时间，可以进行倒缝。
- 3) 放开拨杆，则立即返回到正缝。



为了防止意外的起动造成的事故，
请关掉电源后进行。

(1) How to operate

- 1) The moment switch lever **①** is pressed, the machine performs reverse feed stitching.
- 2) The machine performs reverse feed stitching as long as the switch lever is held pressed.
- 3) The machine resumes normal feed stitching the moment the switch lever is released.



WARNING:

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.

26. 拨线杆 / WIPER

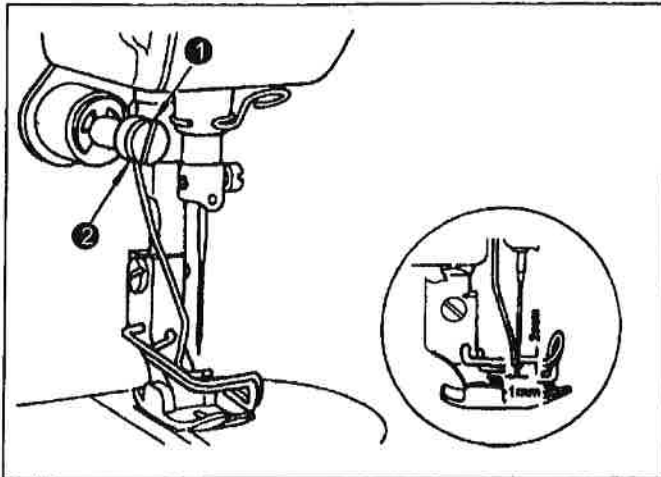
注意

为了防止意外的起动造成的事故，请关掉电源后进行。



WARNING:

Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



(1) 拨线杆的位置

调线杆位置根据布料的厚度按下列方法进行调节。

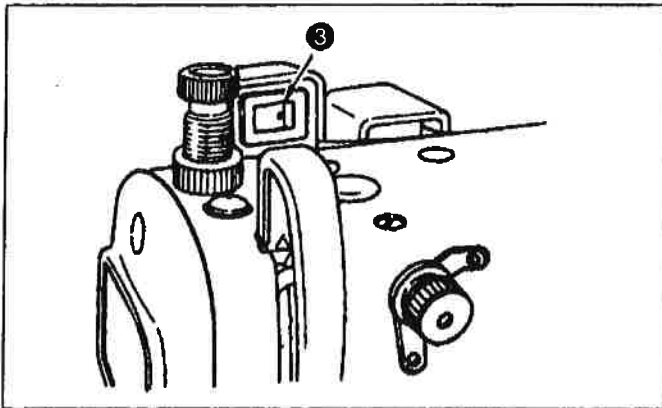
- 1) 用拨线杆环②推拨线杆，然后拧紧固定螺丝①。
把拨线杆的平坦部和机针中心的距离相距1mm。

(1) Positioning the wiper

Adjust the position of the wiper according to the thickness of the material sewn.

The adjustment procedure is as follows:

- 1) Adjust the distance between the flat part of the wiper and the center of the needle to 1 mm.
Tighten wiper adjust screw ① so that the wiper is pressed and fixed by wiper collar ②



- 2) 不使用拨线杆时，请关掉拨线杆开关③。

- 2) When the wiper is unnecessary, turn wiper switch ③ OFF.

△Safety Instruction

1. Users are required to read the operation manual completely and carefully before installation or operation.
2. All the instruction marked with sign △ must be observed or executed; otherwise, bodily injuries might occur.
3. The product should be installed and pre-operated by well trained persons.
4. For perfect operation and safety, it is prohibited that using extension cable with multi-outlet for power connection.
5. When connecting power supply cords to power sources, it is necessary to make sure that the power voltage is lower than 250 VAC and matches the rated voltage indicated on the motor's name plate.
△ ※Attention: If the Control Box is AC 220V system, please don't connect the Control Box to AC 380V power outlet. Otherwise, the error will occur and motor will not work. If that happens, please turn off the power immediately and check the power voltage.
6. Don't operate in direct sun light, outdoors area and where the room temperature is over 45°C or below 5°C.
7. Please avoid operating near the heater at dew area or at the humidity below 30% or above 95%.
8. Don't operate in area with heavy dust, corrosive substance or volatile gas.
9. Avoid power cord being applied by heavy objects or excessive force, or over bend.
10. The earth wire of power cord must be connected to the system ground of the production plant by proper size of conductions and terminals. This connection should be fixed permanently.
11. All the moving portions must be prevented to be exposed by the parts provided.
12. Turing on the machine in the first time, operate the sewing machine at low speed and check the correct rotation direction.
13. Turn off the power before the following operation:
 - a) Connecting or disconnecting any connectors on the control box or motor.
 - b) Threading needle.
 - c) Raising the machine head.
 - d) Repairing or doing any mechanical adjustment.
 - e) Machines idling.
14. Repairs and high level maintenance work should only be carried out by electronic technicians with appropriate training.
14. All the spare parts for repair must be provided or approved by the manufacturer.
15. Don't use any objects or force to hit or ram the product.

Guarantee Time

Warranty period of this product is 1 year dated from purchasing, or within 2 years from ex-factory date.

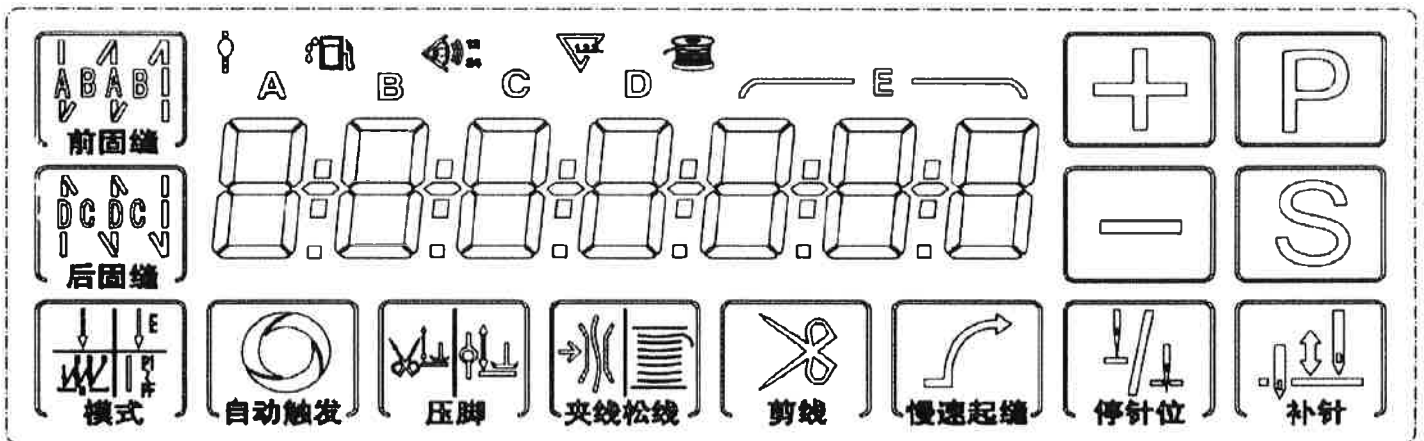
Warranty Detail:

Any trouble found within warranty period under normal operation, it will be repaired free of charge. However, maintenance cost will be charged in the following cases even if within warranty period:

1. Inappropriate use, including: wrong connecting high voltage, wrong application, disassemble, repair, modification by incompetent personnel, or operation without the precaution, or operation out of its specification range, or inserting other objects or liquids into the product.
2. Damage by fire, Earth quake, lighting, wind, flood, salt corrosive, moisture, abnormal power voltage and any other damage cause by the natural disaster or by the inappropriate environments.
3. Dropping after purchasing or damage in transportation by customer himself or by customer's shipping agency

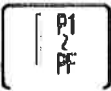








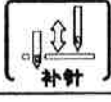
Note: We make our best effort to test and manufacture the product for assuring the quality. However, it is possible that this product can be damaged due to external magnetic interference and electronic static or noise or unstable power source more than expected; therefore the grounding system of operate area must guarantee the good earth and it's also recommended to install a failsafe device. (Such as residual current breaker)

1.Button Displays and operating instructions



1.1.Key Description

名称	按键	注明
Function key enter parameter area		Under normal mode, press the [P] key to enter the user parameter mode Press and hold the [P] key to boot into parameter mode Technician
Enter and determine \ save button		Enter parameter values such items and their contents change after adjustment, need to press the [S] key to save the confirmation. Note: The parameters are saved directly by the [S] key.
Set value increment / parameter increment key		1. A、B、C、D、E、F、G、H section, increase the number of setting stitch . 2. Increase the parameter in Parameter selection. 3. Increase the setting value in Parameter value.
Set value decrement / decrement key parameters		1. A、B、C、D、E、F、G、H decrease the number of setting stitch 2. Decrease the parameter in Parameter selection. 3. Decrease the setting value in Parameter value.
Start/End Back-Tacking Selection		Execution starting back seam B segment or execution starting back seam (A, B segment) 1 Execution starting back seam (A, B segment) 2 times
		Execution terminates back seam C segment or execution terminates back seam (C, D segment) 1 Execution terminates back seam (C, D segment) 2 times
Freedom sewing shortcuts		As the treadle is toed down, machine will start sewing. Once the treadle returns to neutral, machine will stop immediately. As the treadle is heeled back, machine will automatically start trimming cycle.
Some fixed stitch shortcuts		The implementation of paragraph E set needle function, when the display shows the icon, activate the E section of the needle function.
Continuous back seam shortcuts		Once the treadle is toed down, all the seams of Bar-Tacking will be completed with D times, and then the thread will automatically be trimmed. Note: When the Bar-Tacking Sewing starts, will not stop until the trimming cycle finished, except for the treadle heeled back to cancel the action.

Multi-section set needle shortcuts		Line multi-section stitching function, when the display shows the icon, the activation of multi-section needle stitch function.
Automatically trigger button		<ol style="list-style-type: none"> 1. In Free sewing: One touch of this key makes beep sound without any function also LED does not light up. 2. In Constant-Stitch Sewing: One shot to the pedal, stitches number of E, F, G or H will be automatically performed. Toe down the pedal again and again to finish the rest sections until it finish pattern.
Press the lift foot shortcuts		<ol style="list-style-type: none"> 1.  When the icon is on, the presser foot is automatically lifted after cutting. 2.  When the icon is on, the presser foot automatically lifts when the motor stops in the sewing.
Thread clamping function / lifting the foot when the loose line function shortcut keys		<ol style="list-style-type: none"> 1, the corresponding icon is on, the thread clamp function is turned on. 2, the corresponding icon does not shine, no clamp function.
Shortcut function		<ol style="list-style-type: none"> 1. Set the use or cancel tangent function. 2. When the corresponding icon is off, it means that the corresponding function is disabled.
Slow play seam shortcuts		<ol style="list-style-type: none"> 1. The corresponding icon lights, slow starting sewing open. 2. The corresponding icon is not lit, no slow-starting sewing function.
Stop the needle position switch key		<ol style="list-style-type: none"> 1: The icon lights up to indicate the stop position at stop 2: The icon indicates that the needle stops at the next stop
Fill the needle button		If you click, you can make a half needle

2 User Parameter & Technician Parameter

Parameter	Parameter Function	Range	Default	Description
P01	Maximum Sewing Speed (rpm)	100-3700	3700	Maximum speed of machine sewing
P02	Speed Curve Adjustment (%)	10-100	80	The Lager the value, the faster to increase speed
P03	Needle UP/ DOWN	UP/DN	DN	UP: Needle Stops at Up Position DN: Needle Stops at Down Position
P04	Start Back-Tacking Speed (rpm)	200-3200	1800	Start Back-Tacking Speed Adjustment
P05	End Back-Tacking Speed (rpm)	200-3200	1800	End Back-Tacking Speed Adjustment

P06	Bar-Tacking Speed (rpm)	200-3200	1800	Repeat Bar-Tacking Speed Adjustment
P07	Soft Start Speed (rpm)	200-1500	400	Soft Start Speed Adjustment
P08	Stitch Numbers for Soft Start	0-99	2	Soft Start Stitches Setting (one unit = half stitch)
P09	Automatic Constant-Stitch Sewing Speed (rpm)	200-4000	3700	Constant-Stitch sewing speed【034.SMP】 is set at A(or when one shot signal is active)
P10	Automatic End Back-Tacking Sewing(Can invalidate the stitch correction function)	ON/OFF	ON	The Stitch-Correction is valid in sewing stop. Note: Valid only when the【0.11.RVM】must set on B ON: Invalid (Constant-Stitch sewing, it can automatic continue action as CD function) OFF: Valid (Can't continue execute CD function)
P11	Back-Tacking Mode Selection	J/B	J	J: JUKI Mode (In the middle of the car to stop the middle of the time to stop when the inverted seam) B: BROTHER Mode (That is, in the vehicle to perform the reverse operation of the seam, in the end of the time to stop the needle
P12	Start Back-Tacking Mode Selection	0-1	1	A: One shot to pedal, it will automatic execute Start Back-Tacking. M: Pedal-controlled and motor can stop arbitrarily
P13	Mode Selection at the end of Start Back-Tacking	CON/STP	CON	CON: At the end of Start Back-Tacking, machine continues sewing if pedal pressed or START signal on (standing operation) STP: At the end of Start Back-Tacking, machine stops
P14	Soft Start	ON/OFF	ON	ON: Slow start feature is turned on. OFF: Slow start function off.
P15	Make up pin mode	0-4	2	0: Semi-pin; 1: a pin 2: Continuous filling half needle 3: Continuous injection
P18	Stitch Balance for Start Back-Tacking 1	0-200	131	A starting back seam segment stitches compensation 0-200 movement gradually lag; the larger the value, A short last longer needle, B section of the first needle is shorter
P19	Stitch Balance for Start Back-Tacking 2	0-200	165	Starting back seam B segment stitches compensation 0-200 movement gradually lag; the larger the value, paragraph B last longer needle
P20	Mode Selection for End Back-Tacking	0-2	1	A: Pedal full heeling ,it will automatic execute end Back-Tacking
P24	Foot pedal reverse voltage	30-500	110	
P25	Stitch Balance for End Back-Tacking 3	0-200	131	Starting back seam segment stitches compensation C, 0-200 movement gradually lag; the larger the value, the shorter the C section of the first pin
P26	Stitch Balance for End Back-Tacking 4	0-200	165	D starting back seam segment stitches compensation 0-200 movement gradually lag; the larger the value, C section last a longer needle, the first needle is shorter segment D
P28	Mode Selection for Bar-Tacking	0-2	1	Continuous back seam segment, rewind solenoid operation timing: 0: controlled by the pedal can be arbitrarily stopping and starting; 1: Touch the pedal, automatically performs back-tacking action; 2: pause mode

P29	Tangent after braking force	1-45	20	
P30	Thick material angle	0-100	0	The larger the value the greater the intensity, the adjustment is too large may cause the motor abnormalities.
P31	Cutting angle	0-100	30	The larger the value the greater the intensity, the adjustment is too large may cause the motor abnormalities.
P32	Stitch Balance for Bar-Tacking 5	0-200	121	Start back-tacking A (C) paragraph stitch compensation, 0-200 movement gradually lag; the larger the value, A (C) the last paragraph of a needle longer; B (D) of the first paragraph, the shorter pin
P33	Stitch Balance for Bar-Tacking 6	0-200	165	Starting back seam B (D) segment stitch compensation, 0-200 movement gradually lag; the larger the value, B (D) last paragraph a longer needle, C section of the first needle is shorter
P34	Mode Selection for Constant-Stitch Sewing	A/M	A	A: One shot to pedal, it will automatic execute Constant-Stitch M: Pedal-controlled and motor can stop arbitrarily
P36	Slack line output function setting(loose line power set)	0-11	5	0: no loose wire operation 1 to 11 and gradually increases the intensity of loose wire
P37	Wiper Function Selection or Thread Clamp Pressure Setting	0-11	8	0 : No Action 1: Wiper Action 2-11: Thread Clamp action and the pressure gradually increased)
P38	Trimmer Function Selection	ON/OFF	ON	ON: Trimmer Valid OFF: Trimmer Invalid
P39	Presser Foot UP / Down at intermediate stop	UP/DN	DN	UP: Presser foot goes up automatically DN: Presser foot keeps down (Controlled by heeling pedal)
P40	Presser Foot UP / Down after Trimming	UP/DN	DN	UP: Presser foot goes up automatically DN: Presser foot keeps down (Controlled by heeling pedal)
P41	Display the sewing finished quantity		0	Counting the finished-sewing quantity
P42	Information Display			NO1 Electrically controlled version serial numbers NO2 Selected needle cassette version NO3 Speed NO4 Pedals AD, NO5 Positioning angle NO6 Under the positioning angle NO7 Bus voltage AD N12 Knee position sensor AD
P43	Setting Direction of Motor Rotation	CCW/CW	CCW	CW: Clockwise CCW: Counter Clockwise
P44	Parking efforts	1-45	16	Efforts to stop the machine when selecting
P45	Back-seam operation duty cycle (%)	1-50	25	Back-seam action to periodic power output
P46	Motor stops with a reverse angle after trimming	ON/OFF	OFF	ON: It will automatic as reverse function after trimming (angle adjustment according to the
P47	Adjustment of reverse angles after trimming	50-200	160	Adjusting at reverse direction after trimming
P48	Low (Positioning) Speed (rpm)	100-500	210	Setting Positioning Speed

P49	Trimming Speed (rpm)	100-500	300	Adjusting trimming speed
P50	The time of Foot lifting	10-990	250	Adjustment of foot lifting action
P51	Lift foot full force time (%)	1-50	25	Adjustment for Duty-Cycle of Foot Lifter / Back-Tacking (Fine tuning can reduce the over-heating)
P52	The time of Foot down	10-990	120	Delay starting motor, ensure that the foot is put down.
P53	Cancel Foot Lifting when Half-Heeling the Pedal	ON/OFF	OFF	ON: Pedal half heeling without foot lifting function. OFF: Pedal half heeling with foot lifting function
P54	Trimming Time (ms)	10-990	200	Trimming sequence time setting
P55	Setting Wiper Timing	10-990	30	Wiper sequence setting
P56	Needles Goes Up Automatically as Power turned on	0-2	1	0: always not to find a position 1: : always looking for positioning 2: If the motor is positioned on the no longer find location (only with magnet motor)
P57	Protection time for foot lifter(s)	1-60	10	It will automatic come down when foot lifter keep lift over the setting time.
P58	Up Position Adjustment	0-1439	1120	Up Position Adjustment The needle will advance stop when the value decreased. The needle will delay stop when the value increased.
P59	Down Position Adjustment	0-1439	360	Down Position Adjustment The needle will advance stop when the value decreased. The needle will delay stop when the value increased.
P60	Testing Speed (rpm)	100-3700	2000	Setting testing speed.
P61	Testing A	ON/OFF	OFF	Option of Testing A, after setting press 【060. TV】 to set the speed keep running.
P62	Testing B	ON/OFF	OFF	Option of Testing B, after setting press 【060. TV】to set the speed execute the cycle of Start – Sewing –Stop - Trimming
P63	Testing C	ON/OFF	OFF	Option of Testing C, after setting press 【060. TV】to set the speed execute the cycle of Start – Sewing –Stop without positioning function
P64	Running Time of Testing B and C	1-250	20	Setting running time of testing B and C
P65	Stop Time of Testing B and C	1-250	20	Setting stop time of testing B and C
P66	Machine Protection Switch Testing	0-2	1	0: Disable, 1: Testing zero signal, 2: Testing positive signal
P67	Trimming Protection Switch Testing	ON/OFF	OFF	OFF: Disable ON: Enable
P70	The factory Type Selection		20	
P71	Presser foot release buffer duty cycle (%)	0-50	2	Efforts to ease foot pressure release time
P72	The needle position correction	0-1439	0	Hand rotation manual to the appropriate
P73	Under needle position correction	0-1439	0	Hand rotation manual to the appropriate position, press S key to save
P76	Backstitch output of full time (ms)	10-990	250	

P77	Freedom sew back seam even terminate pause time (ms)	20-200	75	
P78	The Thread Clamp release angle	10-150	100	The positioning angle of starting clamp
P79	Clamp start action angle	160-359	270	The positioning angle of release
P80	Shear line infeed is angle	5-359	18	Shear line infeed is angle setting (under defined as 0 °)
P81	Cut the line start angle	5-359	140	Afterburner trimming angle setting
P82	Retract angle cut line	5-359	172	Afterburner trimming angle setting
P84	Thick start angle	0-330	9	
P85	The thick end angle	0-330	57	
P92	Encoder start angle		160	
P101	Loose line starting angle	1-359	30	Song line start angle (defined as 0 ° under calculation)
P102	Loose end angle	1-359	180	Loose wire end angle (defined as 0 ° under calculation)
F117	Release the presser foot buffer delay time (ms)	0-990	12	
P120	Oil alarm switch detects	0-1	0	0: Not detected 1: detected
P121	Trimming needle selection mode	0-3	2	0: Normal mode 1: cut thread mode 2: off thread trimming defense mode 3: Reserved
P122	Timing off thread trimming defense mode, before trimming back tack action	0-1439	1000	A needle before the needle parameter values greater the distance the greater the cut line
P123	Cut the thread mode, trimming back tack during operation timing	0-100	0	
F125	Knee by inductor value AD 1	0-1023	25	Effect lifter effect

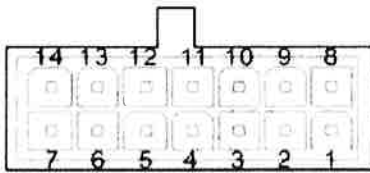
3 Error Code List

Error Code	Problem	Strategies
E1	Power Module is faulty. Abnormal over current or voltage. Resistor is damaged or F1 fuse is blown.	System will be shut down until the power resets on. Please check the power board in detail.
E2	1) When power on, detected main voltage too low 2) Connect the wrong voltage, too low.	Moto and machine will be shutting down. Please check the AC power. (Too low) Please check the main pc board.
E3	Operation Box linked to CPU interface had communication error.	Motor and machine will be shutting down. Please check the operation box.
E5	The connection of the Foot Pedal error	Motor and machine will be shutting down. Please check the connection of the Foot Pedal or the problem of it
E7	a) Bad connection at the motor connector. b) Machine locked or object stuck in the motor pulley. c) Sewing material is too thick. d) Module output is abnormal.	Head rotation motor handwheel see if stuck. As the first rule nose stuck mechanical failure. As normal rotation, check the motor and motor encoder connector power cord connector is loose. Please correct if loose. As good contact, check the power supply voltage is abnormal or speed is set too high. If yes, please adjust. As normal, replace the control box and inform the manufacturer.

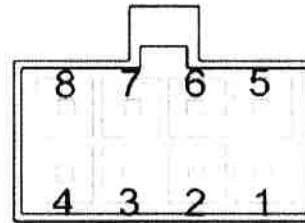
E8	Manual Back-Tacking lasts for 15 sec.	Reverse stitching solenoid pull too long, you can restart the product. If the product or reported after the restart E-08, check the manual back tack switch is damaged.
E09 E11	Positioning signal error	Power off the system, check the motor encoder interface is loose or fall off, it was back to normal after restarting the system. If it still does not work, replace the motor and inform the manufacturer
E14	Encoder signal error	Power off the system, check the motor encoder interface is loose or fall off, it was back to normal after restarting the system. If it still does not work, replace the motor and inform the manufacturer.
E15	Power module abnormal over-current protection	Power off the system, then on again. If it still does not work, replace the control box and inform the manufacturer.
E17	Head protection switch is not in the correct position	Power off the system and check whether the nose open, ball switch control box whether displaced or damaged.
E20	Power motor failed to start	Power off the system, check the motor encoder interface and motor power connector is loose or fall off, It was back to normal after restarting the system. If it still does not work, replace the control box and inform the manufacturer.

4. Port Outline Diagram

4.1 14P function port table illustration

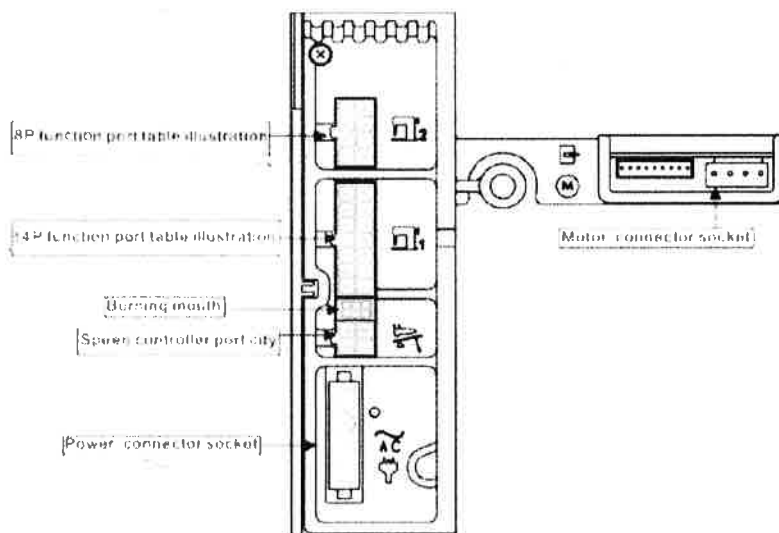


- ① Trimming electromagnet: 1、8
- ② Wiper/clamp solenoid: 2、9
- ③ Loose wire electromagnet: 3、10
- ④ 5V sewing machine lamp: 4、11
- ⑤ Manual backstitch: 5、12
- ⑥ Backstich solenoid: 6、13
- ⑦ Needle switch: 7、14



- ① The level of induction: 5(+5V), 6 (signal ground), 2 (Induction signal)
- ② Foot pressure sensing: 1(+5V), 7 (signal ground), 3 (Induction signal)
- ③ Foot pressure electromagnet: 4、8

4.2 Port Name



GC6890

HIGH SPEED SEWING MACHINE



This machine may only be operated by adequately trained operators only after having completely read and understood the instruction manual.

Parts are subject to changes in design without prior notice.



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