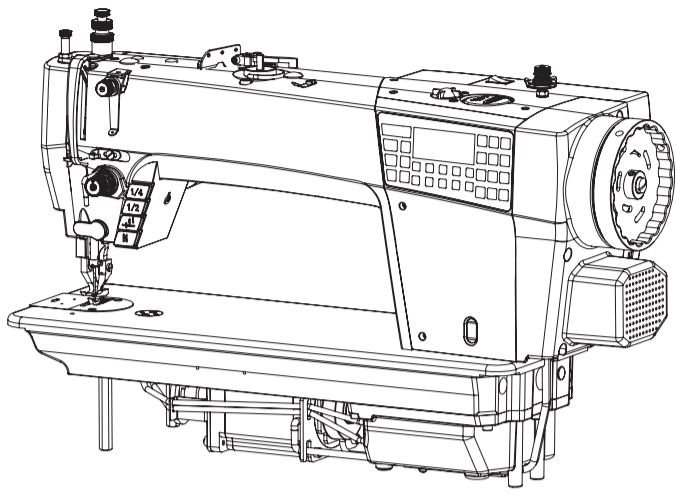


# 同步电脑平缝机

Computerized special stitch pattern lockstitch sewing machine



## 使用说明书 Operation instruction

### 重要安全事项

为了使您正确使用我们的产品，须对产品各种功能充分了解，以便安全操作。使用前请仔细阅读使用说明书。我们希望您能长期愉快地使用我们的产品，请保存好说明书，以备查阅。

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. 所有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，应立即关闭电源开关，或拔出电源插头。
  - 7-1 机针、弯针、分离器穿线或更换旋梭时。
  - 7-2 更换机针、压脚、针板、弯针、分离器、送布牙、护针器、支架导向器等时。
  - 7-3 修理时。
  - 7-4 工作场所无人或离开工作场所时。
8. 缝纫机以及附属装置使用的机油、润滑油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进行。
11. 一般的维护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、维修应由合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。
14. 缝纫机在其使用期间应定期清扫。

15. 为了正常安全运转，应安装地线。同时应在不受高频焊机或强噪音影响的环境下使用。
16. 电源插头应用具有电气专门知识来安装。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，并采取有奖的安全措施。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。

### 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 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 device 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 work place or when the working place is unattended.
8. If you should allow oil, grease, etc. Use 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.
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 compressed air supply 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.

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19. Warning hints are marked with the two shown symbols.
  - ⚠ Danger of injury to operator or service staff
  - ⚠ Items requiring special attention

### 安全操作事项 FOR SAFE OPERATION

- 危险 DANGER**
1. 为了防止发生触电事故，请不要再打开电源的状态下，打开电气箱盖以及触摸电气箱内的零件。
  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.
- 注意 CAUTION**
1. 为了防止人身事故的发生，请不要再卸下电机罩、手指防护器等安全装置的状态下运转缝纫机。
  2. 为了防止被卷入机器的人身事故，缝纫机运转中请不要将手指、头发、衣服靠近手轮、也不要把手放到机器上面。
  3. 为了防止人身事故的发生，打开电源时以及缝纫机运转中，请不要把手指放到机针附近。
  4. 为了防止人身事故的发生，缝纫机运转中请不要把手指放到挑线杆外罩内。
  5. 缝纫机运转中，旋梭高速旋转，为了防止手受到伤害，运转中请绝对不要把手靠近旋梭。
  6. 为了防止人身事故的发生，放到缝纫机或返回原位时，要注意不要夹住手。
  7. 为了防止突然的启动造成人身事故，放到缝纫机时，请一定关掉电源。
  8. 使用伺服电机时，缝纫机停止电机无声音。为了防止意外的启动造成人身事故，请注意不要忘记关电源。
  9. 为了防止触电事故，卸下电源地线的状态，请不要运转缝纫机。
  10. 为了防止触电和损坏电气零件，拔电源的插头时，请先关掉机器电源开关。
  10. 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 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 does not produce noise while the machine when tilting the machine head.
  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.

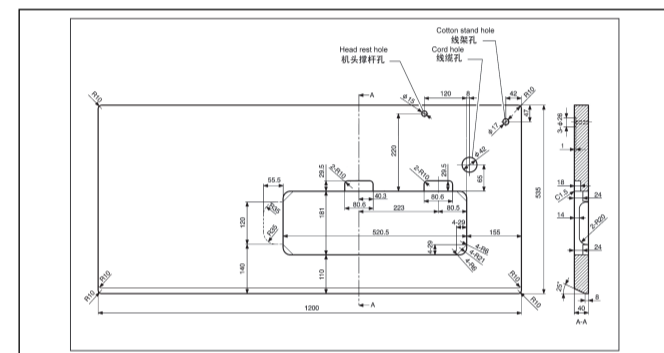
### 运转缝纫机前的注意事项 BEFORE OPERATION

- 注意 CAUTION** 为了防止机械错误动作或损伤，请确认如下项目。
- To avoid malfunction and damage of the machine, confirm the following.
- 最初使用缝纫机之前，请把机器打扫干净。
  - 清除运送中积存的灰尘，并加油。
  - 请确认电压是否正确。
  - 请确认电源插头是否正确连接。
  - 电压规格不同时，请绝对不要使用。
  - 缝纫机的转动方向是，站在飞轮侧看为逆时针方向。请注意不要让缝纫机反向转动。
  - Before you put the machine into operation for the first time after the set up, clean it thoroughly.
  - Remember 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 connected to the power supply.
  - 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.

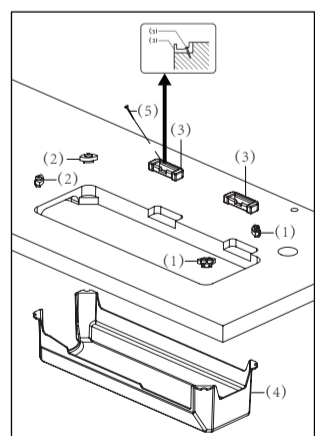
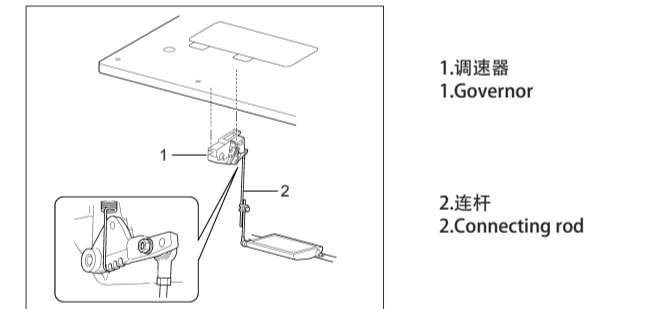
### 1. 缝纫机规格 Machine specifications

|   |                                    |  |
|---|------------------------------------|--|
|   |                                    | 1903                                       |
| 用途 USE                                      |                                    | 中厚料<br>Medium-weight materials             |
| 最高缝纫速度<br>Max. Sewing speed                 |                                    | 2,200 sti/min                              |
| 最大针距<br>Max. Stitch speed                   |                                    | 10mm                                       |
| 压脚高度<br>Presser foot height                 | 压脚板手 Lifting lever<br>自动 automatic | 7.5mm<br>7.5—16mm 可调 (Adjustable)          |
| 送布牙高度<br>Feed dog height                    |                                    | 1.2mm                                      |
| 机针 (DP X 17) Needle                         |                                    | #20-#23                                    |
| 旋梭 Hook                                     |                                    | 自动润滑大旋梭 Auto-lubricating big rotating hook |
| 压脚交替量<br>Alternate presser foot life volume |                                    | 3.5mm—5.5mm                                |

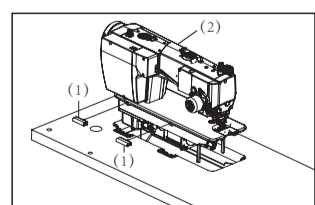
### 2-1. 台板加工图 Table processing diagram



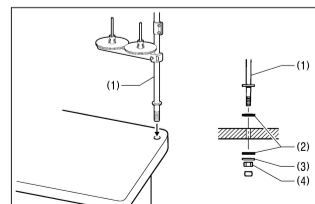
### 2-2. 安装方法 Installation



3. 安装
- (1) 头部防震垫 (大) (2个)
- (2) 头部防震垫 (小) (2个)
- (3) 铰链套 (2个)
- (4) 托盘
- (5) 钉 (8个)
3. Install
- (1) Head cushions(big)[2 pcs]
- (2) Head cushions(small)[2 pcs]
- (3) Rubber cushions[2 pcs]
- (4) Tray
- (5) Nail [8 pcs]



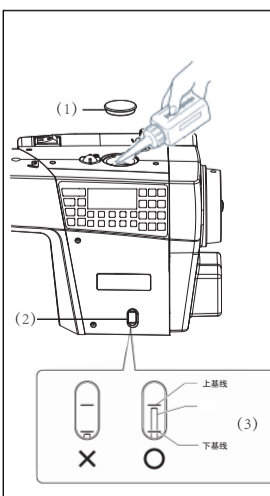
4. 缝纫机头部
- (1) 机头铰链 (2个)
- (2) 缝纫机头部
4. Machine head
- (1) Hinges [2 pcs]
- (2) Machine head



5. 线架
- (1) 线架
- 注意：将螺母 (4) 拧紧以便将两个橡皮垫片 (2) 和垫圈 (3) 夹紧，使线架 (1) 固定。
5. Cotton stand
- (1) Cotton stand
- NOTE: Securely tighten the nut(4) so that the two rubber cushions(2) and the washer(3) are securely clamped and so that the cotton stand(1) does not move.

### 3. 加油方法 Lubrication

- 注意 CAUTION**
- ⊘ 在加油未完成前，请勿插上电源。
  - ⊘ 当误踩下脚踏板时，缝纫机动作会导致人员受伤。
  - ⊘ 使用润滑油时，请务必戴好防护眼镜和手套等，以防润滑油落入眼中或沾在皮肤上。这是引起发炎的原因。
  - ⊘ 另外，润滑油不能饮用，否则会引起呕吐和腹泻。
  - ⊘ 将油放在儿童拿不到的地方。
  - ⊘ 在剪去油罐的油嘴口时，请一定要拿住油嘴的根部。
  - ⊘ 如果拿住油嘴口，剪刀容易伤到手，成为受伤的原因。
  - ⊘ Do not connect the power cord until lubrication has been completed, otherwise the machine may operate if the treadle is depressed by mistake, which could result in injury.
  - ⊘ Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result.
  - ⊘ Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhea. Keep the oil out of the reach of children.
  - ⊘ When cutting the nozzle of the oil tank, hold the base of the nozzle securely. If you hold the end of the nozzle, injury from the scissors may result.



初次使用缝纫机前需添加机油以保证机器各机械部件的润滑，以延长机器寿命

1. 将加注油孔塞 (1) 打开
2. 将白油注入机头加油口中
3. 加油过程中观察油量视窗 (2)，使油量计 (3) 稳定在上、下基线之间
- 注：油量计不可超过视窗上基线

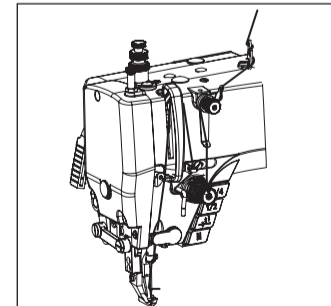
如油量计 (3) 低于下基线，则必须添加机油

1. open the oil rubber (1)
2. add oil into the machine
3. look at the oil window (2) during adding oil, to make the oil gauge (3) is steable between the top and bottom baselines
- Note: the oil gauge can't be over the top baseline in the window

If the oil gauge (3) is lower than the bottom baseline, machine must be added oil

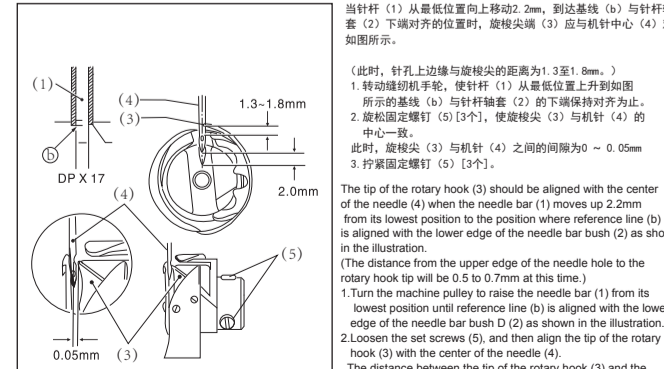
### 4. 面线的穿法 Threading the upper thread

- 注意 CAUTION**
- 在穿线过程中，请切断电源。当误按启动开关时，缝纫机动作会导致人员受伤。The machine may operate if the treadle is depressed by mistake, which could result in injury.



- 在穿引面线之前转动手轮，抬高挑线杆 (1)。这样会使穿引更加容易，并防止面线在缝纫开始时脱落
- Turn the machine pulley and raise the thread take-up(1) before threading the upper thread. This will make threading easier and it will prevent the thread from coming out at the sewing start.

### 5. 机针和旋梭的同步 Adjusting the needle and rotary hook timing



当针杆 (1) 从最低位置向上移动 2.2mm，到达基线 (b) 与针杆轴套 (2) 下端对齐的位置时，旋梭尖端 (3) 应与机针中心 (4) 对齐，如图所示。

(此时，针孔上边缘与旋梭尖的距离为 1.3 至 1.8mm)

1. 转动挑线手轮，使针杆 (1) 从最低位置向上移动 2.2mm
2. 旋梭尖端 (3) 与针杆轴套 (2) 的下端保持对齐为止。
3. 旋梭尖端 (3) 与机针 (4) 的中心一致。
4. 此时，旋梭尖 (3) 与机针 (4) 之间的间隙为 0 ~ 0.05mm
5. 拧紧固定螺钉 (5) [3个]。

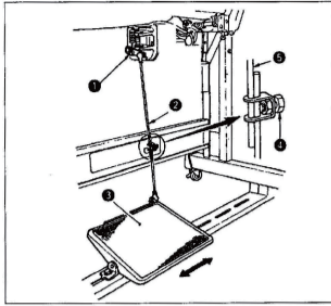
The tip of the rotary hook (3) should be aligned with the center of the needle (4) when the needle bar (1) moves up 2.2mm from its lowest position until reference line (b) is aligned with the lower edge of the needle bar bush (2) as shown in the illustration. (The distance from the upper edge of the needle hole to the rotary hook tip will be 0.5 to 0.7mm at this time.)

1. Turn the machine pulley to raise the needle bar (1) from its lowest position until reference line (b) is aligned with the lower edge of the needle bar bush (2) as shown in the illustration.
2. Loosen the set screws (5) [3 pcs], and then align the tip of the rotary hook (3) with the center of the needle (4).
3. The distance between the tip of the rotary hook (3) and the needle (4) should be approximately 0-0.05mm.
4. Securely tighten the set screws (5).



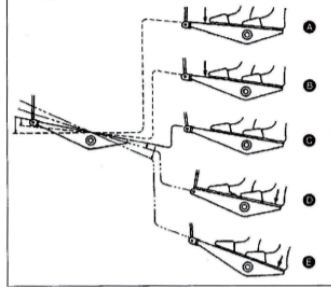
## 6. 踏板的调整 Adjustment of the pedal

**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.



- 连接杆的安装  
 1) 向箭头方向移动踏板调节板③，让踏板连接杆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角度。  
 2) 拧松调节螺丝④，拉出插入连接杆⑤进行调整。
- 安装连接杆  
 1) 将踏板③移到右侧或左侧如图中所示，使踏板连接杆①和连接杆②呈一直线。  
 (2) 调整踏板的倾斜角度  
 1) 通过改变连接杆⑤的长度，可以自由地调整踏板的倾斜角度。  
 2) 拧松调节螺丝④，拉出插入连接杆⑤进行调整。

## 踏板操作 / PEDAL OPERATION



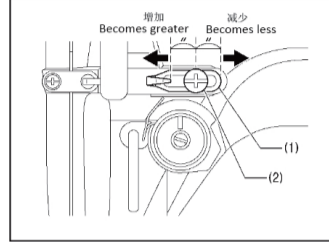
- 踏板按4个阶段进行操作。  
 1) 向前轻轻踩踏板为低速缝制①。  
 2) 再用力向前踩踏板则变为高速缝制②。  
 (但是，开关设定为自动倒缝时，倒缝结束后进行高速缝制)  
 3) 把踏板返回到脚踏轻轻地放在踏板上的位置缝制机停③。(机针上停止或下停止位置)  
 4) 用力向后踩踏板则为切线动作④。  
 \* 使用自动压脚提升装置时，再停止和切线之间增加1级开关。向后轻轻的踩踏板为压脚提升动作⑤，再用力踩踏板为切线动作。
- 踏板的操作在以下四个步骤中进行：  
 1) 当机器以低速缝制时，轻轻踩踏板的前部①。  
 2) 当机器以高速缝制时，用力踩踏板的前部②。  
 (如果设定为自动倒缝，倒缝结束后进行高速缝制)  
 3) 当机器停止(机针向上或向下)时，将踏板恢复到其原始位置③。  
 4) 当机器修剪线头时，用力踩踏板的后部④。  
 \* 如果您的机器配备了自动压脚提升装置，在机器停止和修剪线头之间增加1级开关。向后轻轻踩踏板为压脚提升动作⑤，用力踩踏板为切线动作。

## 7. 标准调整 Standard adjustment

**注意**  
 只有经过训练的技术人员才能进行缝纫机的维修、保养和检查。  
 发生下列情况时，请关闭电源，并拔下电源插座。否则误踩下踏板时，缝纫机动作会导致受伤。  
 取下安全保护装置，再次安装时，请务必安装在原位上，并检查能否正常的发挥作用。  
 在必须关上电源开关进行调整时，务必十分小心遵守所有的安全注意事项。

**CAUTION**  
 Maintenance and inspection of the sewing machine should only be carried out by a qualified technician.  
 Ask your DUMA dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.  
 If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check that they operate correctly before using the machine.  
 Secure the table so that it will not move when tilting back the machine head. If the table moves, it may crush your feet or cause other injuries.

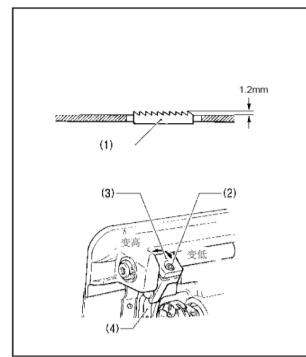
## 7-1. 机壳线导向R Adjusting arm thread guide R



机壳线导向R(1)的标准安装位置是在螺钉(2)位于机壳线导向R(1)的可调范围中心处。  
 [注意]  
 旋松螺钉(2)，移动机壳线导向R(1)进行位置的调节。  
 \* 当缝制厚料时，向左移动机壳线导向R(1)。(挑线量增加。)  
 \* 当缝制薄料时，向右移动机壳线导向R(1)。(挑线量减少。)

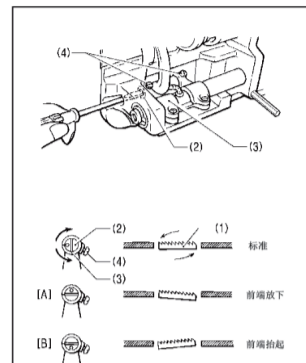
The standard position of arm thread guide R (1) is the position where the screw (2) is in the center of the adjustable range for arm thread guide R (1).  
 To adjust the position, loosen the screw (2) and then move arm thread guide R (1).  
 \* When sewing thick material, move arm thread guide R (1) to the left. (The thread take-up amount will become greater.)  
 \* When sewing thin material, move arm thread guide R (1) to the right. (The thread take-up amount will become less.)

## 7-2. 送布牙的高度



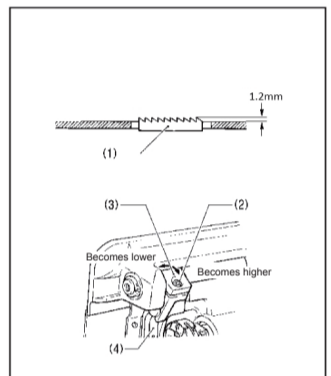
- 当送布牙(1)被尽量提高到针板表面之上时，其标准高度为1.2mm。  
 1. 回转缝纫机手轮，将送布牙(1)移到针板上最高高度。  
 2. 放倒缝纫机机头。  
 3. 旋松螺钉(2)。  
 4. 旋转上下抬牙叉(3)来调整。  
 5. 拧紧螺钉(2)。

## 7-3. 送布牙的角度



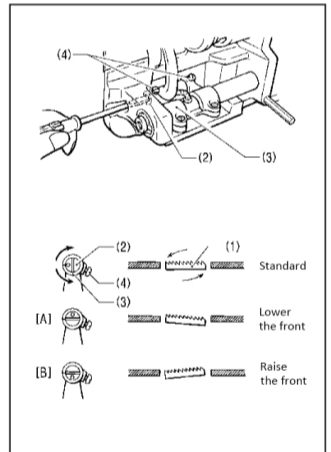
- 送布牙(1)位于针板最高处时的标准倾斜是牙架柄偏心轴(2)上的钢印(0)与牙架柄(3)上的标记一致，送布牙(1)与针板平行。  
 1. 转动缝纫机手轮，将送布牙(1)移到针板上最高高度的位置。  
 2. 放倒缝纫机机头。  
 3. 将螺钉(4) [2个] 松开。  
 4. 根据标准位置，在90°的范围内按箭头方向调整牙架柄偏心轴(2)。  
 \* 为了防止翘起，可降低送布牙(1)的前端。(图A)  
 \* 为了防止在重叠缝制时布料不一致(缝线不齐)，可抬高送布牙(1)的前端。(图B)  
 5. 将螺钉(4) [2个] 完全拧紧。  
 [注意]  
 调整送布牙(1)的倾斜度后，送布牙(1)的高度也会改变，因此请再一次调整送布牙(1)的高度。

## 7-2. Adjusting the feed dog height



- The standard height of the feed dog (1) when it is at its maximum height above the top of the needle plate is 1.0 mm for M specifications, and 1.2mm for H specifications.  
 1. Turn the pulley until the feed dog (1) rises to the highest position.  
 2. Tilt back the machine head.  
 3. Loosen the screw (2).  
 4. Move the feed bar(3) up or down to make adjustment.  
 5. Tighten the screw (2).

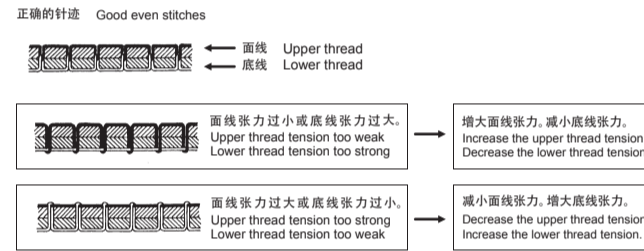
## 7-3. Adjusting the feed dog angle



- The standard angle for the feed dog (1) when it is at its highest position above the needle plate is when the "O" mark on the shaft (2) is aligned with the feed rocker bracket arm (3) and the feed dog (1) is parallel to the needle plate.  
 1. Make the machine hand wheel backward, rise the feed dog from lowest position to the same position with needle plate.  
 2. Tilt back the machine head.  
 3. Loosen the two set screws (4).  
 4. Turn the shaft (2) in the direction of the arrow within a range of 90 with respect to the standard position. (Fig.C) In order to prevent puckering, lower the front of the feed dog (1).  
 In order to prevent the material from slipping, raise the front of the feed dog (1).  
 5. Securely tighten the set screws (4).

## 8. 线张力的调节 Adjusting the thread tension

**注意 CAUTION**  
 取出梭芯套时，请切断电源。  
 当误踩下踏板时，缝纫机动作会导致人员受伤。  
 Turn off the power switch before removing or inserting the bobbin case.  
 The machine may operate if the treadle is depressed by mistake, which could result in injury.



正确的针迹 Good even stitches  
 面线张力过小或底线张力过大。 Upper thread tension too weak Lower thread tension too strong  
 增大面线张力，减小底线张力。 Increase the upper thread tension. Decrease the lower thread tension.  
 面线张力过大或底线张力过小。 Upper thread tension too strong Lower thread tension too weak  
 减小面线张力，增大底线张力。 Decrease the upper thread tension. Increase the lower thread tension.

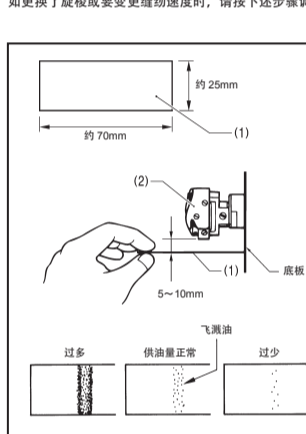
<底线张力>  
 拉出从梭芯套中露出的线头，转动调节螺钉(1)进行调节直至梭芯套以自重慢慢垂落。  
 <Lower thread tension>  
 Adjust by turning the adjustment screw (1) until the bobbin case drops gently by its own weight while the thread end coming out of the bobbin case is held.

<面线张力>  
 在底线张力调节之后，调节面线张力以使针脚均匀平整。  
 1. 降下压脚。  
 2. 转动夹线螺钉(2)进行调节。

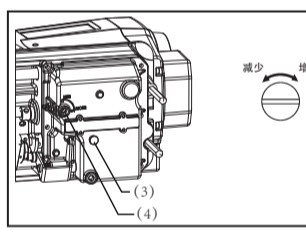
<Upper thread tension>  
 After the lower thread tension has been adjusted, adjust the upper thread tension so that a good, even stitch is obtained.  
 1. Lower the presser foot.  
 2. Adjust by turning the tension nut (2).

## 9. 旋梭供油量的调整

**注意**  
 在检查旋梭供油量时，手指和油测试纸不能碰到旋梭和送布机构等运动部件。  
 是导致人员受伤的原因。



- 如更换了旋梭或要变更缝制速度时，请按下述步骤调整旋梭的供油量。  
 <供油量的确认>  
 1. 拆去挑线杆至机针上的线。  
 2. 用抬压脚板手抬起压脚。  
 3. 以缝纫机实际缝制时的转速进行约 10 分钟的空运转(适度的断续运转)。  
 4. 将油测试纸(1)插入旋梭(2)的下面并握住，以缝纫机实际进行缝制时的转速使缝纫机运转 10 秒钟。(对油测试纸(1)的纸质没有什么要求。)  
 5. 确认飞溅到测试纸上的油量。  
 当需要进行调整时，请按下面(供油量的调整)一节所述进行调整。  
 [注意]  
 如果供油量的检查结果不符合左图所示的状态(飞溅到纸上的油呈完整的带状或一点也没有飞溅出来)，则请向右转动油量调整螺钉(3)将其完全拧紧，然后再向左转动拧出 3 圈半，在松开状态下进行下述的调整作业。

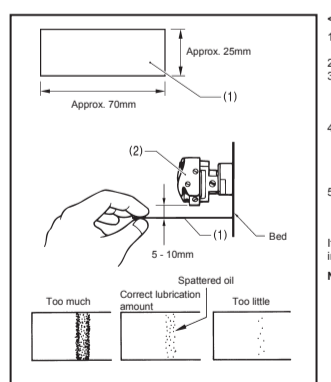


- <供油量的调整>  
 1. 将缝纫机头倒下。  
 2. 取出橡皮塞(3)。  
 3. 转动油量调整螺钉(4)，调整供油量。  
 \* 向右转动油量调整螺钉(3)，供油量增加。  
 \* 向左转动油量调整螺钉(3)，供油量减少。  
 4. 参照上述[供油量的确认]所述来检查供油量。  
 \* 请反复转动油量调整螺钉，进行调整及供油量的确认，直到获得适当的供油量为止。  
 5. 将橡皮塞塞回原处。  
 6. 在进行了约 2 小时的缝制后，请再次检查供油量。

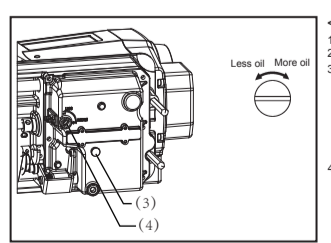
## 9. Adjusting the rotary hook lubrication amount

**CAUTION**  
 Be careful not to touch your fingers or the lubrication amount check sheet against moving parts such as the rotary hook or the feed mechanism when checking the amount of oil supplied to the rotary hook. If care is not taken, injury may result.

Use the following procedure to check the amount of oil being supplied to the rotary hook when replacing the rotary hook or when changing the sewing speed.

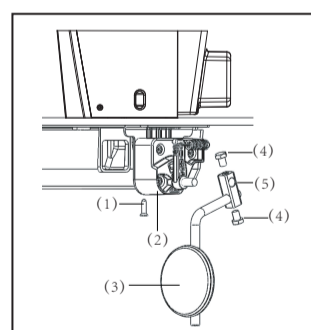


- <Checking the lubrication amount>  
 1. Remove the thread from all points from the thread take-up lever to the needle.  
 2. Use the lifting lever to lift the presser foot.  
 3. Run the machine at the normal sewing speed for approximately 10 minutes without sewing any material (following the same start/stop pattern as when actually sewing).  
 4. Place the lubrication amount check sheet (1) to the left of the rotary hook (2) and hold it there. Then run the sewing machine at the normal sewing speed for 10 seconds. (Any type of paper can be used as the lubrication amount check sheet (1).)  
 5. Check the amount of oil which has splattered onto the sheet.  
 If adjustment is necessary, carry out the following operations in "Adjusting the lubrication amount".  
**NOTE:**  
 If the lubrication amount does not match the correct amount shown in the illustration at left (if the amount of splattered oil is too much or none at all), turn the adjusting screw (3) clockwise to fully tighten it, turn it back counterclockwise by 3 1/2 turns, and then carry out the following adjustment.



- <Adjusting the lubrication amount>  
 1. Tilt back the machine head.  
 2. Remove the rubber cap (3).  
 3. Turn the adjusting screw (4) to adjust the lubrication amount.  
 \* the rotary hook adjusting screw (4) is turned clockwise, the lubrication amount becomes greater.  
 \* If the rotary hook adjusting screw (4) is turned counterclockwise, the lubrication amount becomes smaller.  
 4. Check the lubrication amount again according to the procedure given in "Checking the lubrication amount" above.  
 \* Turn the rotary hook adjusting screw (4) and check the lubrication amount repeatedly until the lubrication amount is correct.  
 5. Put the rubber (3) stopper back in place.  
 6. Check the lubrication amount again after the sewing machine has been used for approximately two hours.

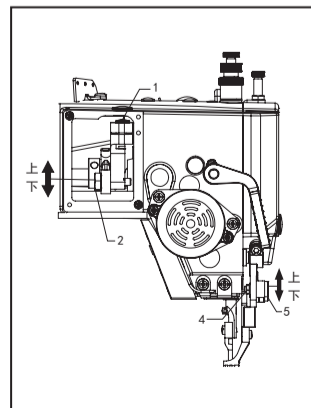
## 10. 膝靠安装 Knee mount



- 将电子膝靠组件(2)固定在台板上，旋紧固定螺钉(1)。
- 将膝靠组件(3)与膝靠接头(5)、电子膝靠组件(2)连接。
- 拧紧螺钉(4)。
- 安装后检查膝靠组件是否灵活。

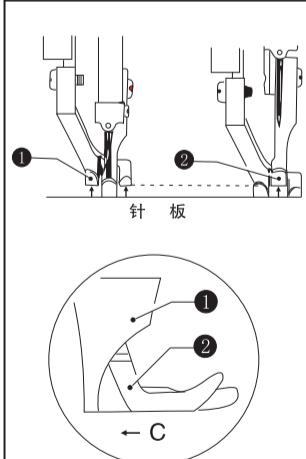
- The electronic knee assembly (2) is fixed on the plate and the fixed screw (1) is tightened.
- Connect the knee control assembly (3) with the knee control joint (5) and the electronic knee assembly (2).
- Tighten the screw (4).
- Check whether the knee control is flexible after installation.

## 11. 调节摆压脚与小压脚交替提升量



- 摆压脚及小压脚的垂直方向运动：  
 1-1. 摆压脚及小压脚是交替式的上下运动  
 1-2. 摆压脚及小压脚上升高度一般是相同或是小压脚的上升高度略低一些  
 将挑线杆置于最下位置，放下压脚板，松开螺钉①使压脚升降前曲柄左、右移动来调节交替提升量  
 右移：两压脚交替提升量趋于相同  
 左移：小压脚的提升量减小
- 摆压脚及小压脚总提升量的调节  
 根据缝料的不同来改变摆压脚、小压脚的提升量。先将偏心轮连杆螺钉②旋松，然后上、下移动来调节该螺钉与压脚升降轴的中心距，中心距调小，则各自的提升量都增加。  
 摆压脚、小压脚前后方向的调节  
 为了在缝制过程中，使摆压脚的前端与小压脚后端不碰撞，必须保持适当的间隔C(3mm左右)  
 旋松摆压脚前曲柄螺钉③，然后，后转动摆压脚曲柄④来进行调节
- 摆压脚的调节  
 送布牙送料量与摆压脚送料量之间的标准比率为1:1(同步送料)摆压脚的送料量可根据缝料不同进行调整，松开螺母⑤，上下移动螺钉⑥进行调节  
 向上：减小中心距L，摆压脚送料量减小  
 向下：增大中心距L，摆压脚送料量增大

## 11. Adjust the lifting amount of the pendulum presser foot and the small presser foot alternately



- Vertical movement of the pendulum presser foot and small presser  
 1-1. Swing presser foot and small presser foot alternate up and down movement  
 1-2. Presser foot and put a small clamp lift height is generally the same or a small rise in the presser foot slightly lower height  
 Place the thread take-up lever at the lowest position, lower the presser foot wrench, loosen the screw ①, move the front crank of the presser foot up and down to move left and right to adjust the alternate lifting amount  
 Right shift: the alternate lifting amount of the two presser feet tends to be the same  
 Move left: the lifting amount of the small presser foot is reduced
- Adjustment of the total lift of the pendulum presser foot and small presser  
 The lifting amount of the pendulum presser foot and small presser foot should be changed according to the different sewing materials. Loosen the eccentric wheel connecting rod screw ② and then move it up and down to adjust the center distance between the screw and the presser foot lifting shaft. If the center distance is reduced, the respective lifting amounts will increase  
 In order to prevent the front end of the pendulum presser foot from colliding with the rear surface of the small presser foot during the sewing process, a proper clearance C (about 3mm) must be maintained  
 Loosen the front crank screw ③ of the pendulum presser foot and then turn the presser foot swing crank ④ front and back to adjust
- Swing foot adjustment  
 The standard ratio between the feeding amount of the feed dog and feeding amount of the pendulum presser foot is 1:1. The feeding amount of the pendulum presser foot can be adjusted according to different sewing materials. Loosen the nut ⑤, move the screw ⑥ up and down to adjust  
 Upward: Decrease the center distance L, the feed amount of the pendulum presser foot decreases  
 Downward: increase the center distance L, the feed amount of the pendulum presser foot will increase