

H9120 SINGLE NEEDLE DIRECT HIGH-SPEED LOCK STITCH
SEWING MACHINE WITH MOTOR BUILT IN HEAD
电脑直驱针送布高速平缝机

零件手册·使用说明书
PARTS BOOK & INSTRUCTION MANUAL BOOK

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此说明书仅作参考，如有更改恕不另作通知。
This manual is only for reference.

IF there is any modification , we apologize for the changing hence caused.



通过 ISO9001:2008
质量管理体系认证

为了您的安全使用/Safety instructions

十分感谢您购买富山牌工业缝纫机。

为了您的安全，在使用缝纫机之前，请仔细阅读产品说明书。

Thank you very much for buying a HIKARI sewing machine.

Before using your new machine, please read the safety instructions.

工业缝纫机的特性之一，因为要在机针和旋梭等运动零部件附近进行操作，而这些零部件很容易引起损伤的危险，所以请在受过培训的人或熟练人员的安全操作知识的指导下，正确的使用此缝纫机。

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, 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 operation before operating the machine so that you will know how to use it correctly.

为了你的安全使用/SAFETY INSTRUCTIONS

[1]. 安全使用的标记及其意义/safety indications and their meanings

本使用说明书及产品所使用的标记和图案记号是为了你的安全而正确地使用产品，防止你及其他人受到危害和损害。表示方法及含义如下。

This instruction manual and the 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

标记/indications

 **危险/DANGER** 表示如果忽视此标记而进行了错误的操作，肯定会引起人员伤亡或重伤。

The instructions which follow this term indicate situations where failure to follow the instructions will almost certainly result in death or severe injury.

 **注意/DANGER** 表示如果忽视此标记而进行了错误的操作，有可能会引起人员受伤及造成设备损坏。 The instructions which follow this term indicate situations where failure to follow the instructions could injury when using the machine or physical damage to equipment and surroundings.

图案和符号/symbols

 该符号表示“应注意事项”。三角形中的图案表示必须要注意的实质内容（例如：左边的图案表示“当心受伤”。） This symbol indicates something that you 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” .)

 该符号表示“禁止”。 This symbol indicates something that you must not do.

 该符号表示“必须”。圆圈中的图案表示必须要做的事情的实质内容。（例如，左边的图案表示“必须接地”） This symbol 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].安全注意事项/Notes on safety



打开控制箱盖时，先关闭电源开关并将电源插头从插座上拔下，至少 5 分钟后，再打开控制箱盖，触摸带有高电压的区域将会造成人员受伤。Wait at least 5 minutes after turning off the power switch and disconnect the power cord from the wall outlet before opening the face plate of the control box. Touching areas where high voltages are present can result in severe injury.

使用环境/Environmental requirements



相对湿度应在 45%~85%范围内，并且设备内不会形成结露的环境下使用。干燥或多湿的环境和结露会影响缝纫机的正确操作。The relative humidity should be within the range of 45%to85% 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.



使用时应避免暴露于直射的阳光下。直射的阳光下会影响缝纫机的正确操作。Avoid exposure to direct sunlight during use. Exposure to direct sunlight may cause problems with correct operation.



万一发生雷电暴风雨时，关闭电源开关，并将电源插头从插座上拔下。雷电可能会影响缝纫机的正确操作。In the event of an electrical storm, turn off the power and disconnect the power cord from the wall outlet .lightning may cause problems with correct operation.

安装/installation



请让受过培训的技术人员来安装缝纫机。 Machine installation should only be carried out by a qualified technician.



在安装完成前，请不要连接电源，如果误踩下踏板时，缝纫机动作会导致受伤。 Do not connect the power cord until installation is complete. The machine may operate if the treadle is depressed by mistake, which could result in injury.



使用润滑油和黄油时，务必戴好保护眼镜和保护手套等，以防润滑油落入眼中或沾在皮肤上，引起发炎。另外，润滑油或黄油不能饮用，否则会引起呕吐和腹泻。将油放在小孩拿不到的地方。

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.



缝纫机重 48Kg,安装工作必须由两人以上来完成。The sewing machine weighs more than 48 Kg, the installation should be carried out by two or more people.



请在切断电源后，再拔掉插头。不然易成为控制箱发生故障的原因。 Turn off the power switch before inserting or removing the plug, otherwise damage to the control box could result.



如果使用带小脚轮的工作台，则应该固定小脚轮，使其不能移动。 If using a work table which has casters, the casters should be secured in such a way so that they cannot move.



缝纫机头倒下或竖起时，请用双手进行操作。单手操作时因缝纫机的重量万一滑落易导致受伤。 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.



固定电缆时，不要过度弯曲电缆或用卡钉固定过紧，会引起火灾或触电的危险。When securing the cords, do not bend the cords excessively or fasten them too hard with staples, otherwise there is the danger that fire or electric shocks could occur.

缝纫/Sewing



本缝纫机仅限于接受过安全操作培训的人员使用。 This sewing machine should only be used by operators who have received the necessary training in safe use beforehand.



本缝纫机不能用于除缝纫外的任何其他用途。 This sewing machine should not be used by any applications other than sewing.



使用缝纫机时必须戴上保护眼睛。如果不戴保护眼镜，断针时就会有危险，机针的折断部分可能会弹入眼睛并造成伤害。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.



如果使用带小脚轮的工作台，则应该固定小脚轮使其不能移动。If using a work table which has casters should be secured in such a way so that they cannot move.



最初使用缝纫机时，应进行 20 天的低速磨合运转（≤3500 r/min）at first operate the machine, should carry on low speed to whet to match an operation for 20 days.(3500 r/min)



如果缝纫机操作发生误动作，或听到异常的噪音或闻到异常的气味，应立即切断电源。然后请与购买商店或受过培训的技术人员联系。If an error occurs in machine, or if abnormal noises or smells are noticed, immediately turn off the power switch. Then contact your nearest HIKARI dealer or a qualified technician.



如果缝纫机出现故障，请与购买商店或受过培训的技术人员联系。If the machine develops a problem, contact your nearest HIKARI dealer or a qualified technician.



发生下列情况时，请切断电源。否则误踩下踏板时，缝纫机动作会导致受伤。1.机针穿线时。2.更换机针或梭芯时。3.缝纫机不使用或人离开缝纫机时。Turn off the power switch at the following times. The machine may operate if the treadle is depressed by mistake, which could result in injury. 1. when threading the needle . 2. when replacing the bobble and needle. 3. when not using the machine and when leaving the machine unattended.



为了安全起见，在使用缝纫机之前，请安装保护装置。如果未安装这些装置就使用缝纫机，会造成人身伤害及缝纫机损坏。Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.



缝纫过程中，不要触摸任何运动部件或将物体靠在运动部件上，因为这会导致人身伤害及缝纫机损坏。Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.



缝纫机头倒下或竖起时，请用双手进行操作。单手操作时因缝纫机的重量万一滑落易导致受伤。

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.

清洁/Cleaning

 在开始清洁作业前，请切断电源。如果误踩下脚踏板时，缝纫机动作会导致人员受伤。Turn off the power switch before carrying out cleaning. The machine may operate if the treadle is depressed by mistake, which could result in injury.

 缝纫机头倒下或竖起时，请用双手进行操作。单手操作时因缝纫机的重量万一滑落易导致受伤。

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.

 使用润滑油和黄油时，务必戴好保护眼镜和保护手套等，以防润滑油落入眼中或沾在皮肤上，引起发炎。另外，润滑油或黄油不能饮用，否则会引起呕吐和腹泻。将油放在小孩拿不到的地方。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.

 用本公司指定更换的零部件。Use only the proper replacement parts as specified by HIKARI.

保养和检查/Maintenance and inspection

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

 由顾客擅自改造机器而导致的任何问题本公司不负一切责任。Any problem in machine operation which result from unauthorized modifications to the machine will not be covered by the warranty.

 发生下列情况下，请关闭电源并从电源插座上拔下插头。否则误踩下脚踏板时，缝纫机动作会导致受伤。1.检查、调整或维修。2.更换旋梭等易损坏零部件。Turn off the power switch and disconnect the power cord from the wall outlet at following times, otherwise the machine may operate if the treadle is depressed 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.

 在必须接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。If the power switch needs to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.

 缝纫机头倒下或竖起时，请用双手进行操作。单手操作时因缝纫机的重量万一滑落易导致受伤。

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.

 与电气有关的维修、保养和检查请委托购买商店或电气工作人员进行。Ask your HIKARI dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.

 取下的安全保护装置，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。If any safety devices have been removed, be absolutely sure to reinstall them to their original positions and check that they operate correctly before using the machine.

 请使用本公司指定更换的零部件。Use only the proper replacement parts as specified by HIKARI.

[3].警告标签/Warning labels

缝纫机上有列警告标签。当使用缝纫机时，请遵守标签上的说明。如果标签说明脱落或模糊不清，请联系购买商店。

The following warning labels appear on the machine. Please follow the instructions on the labels at all times when using the machine .if labels have been removed or are difficult to read, please contact your nearest HIKARI dealer.



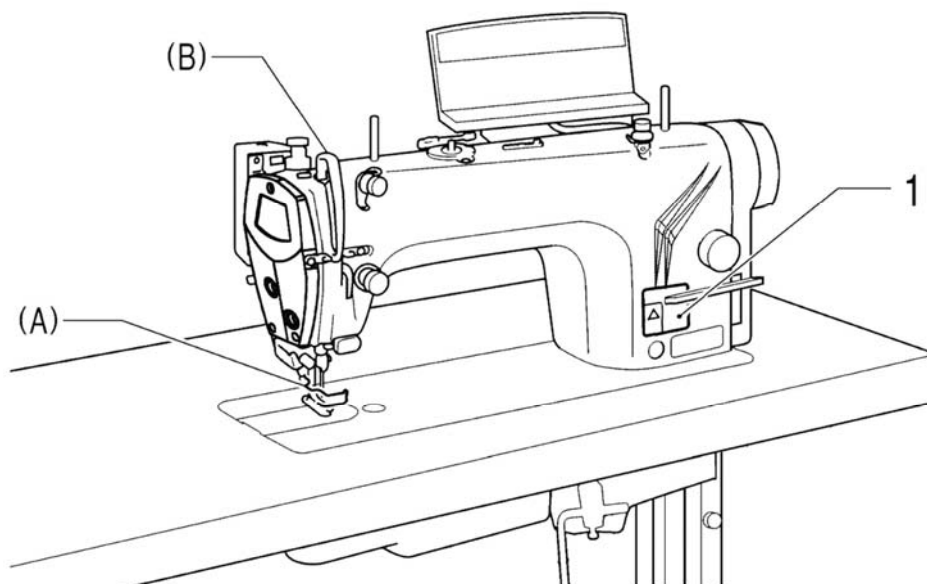
安全保护装置/Safety devices

(A)护指器

(B)挑线杆防护罩

(A)Finger guard

(B)Thread take-up cover



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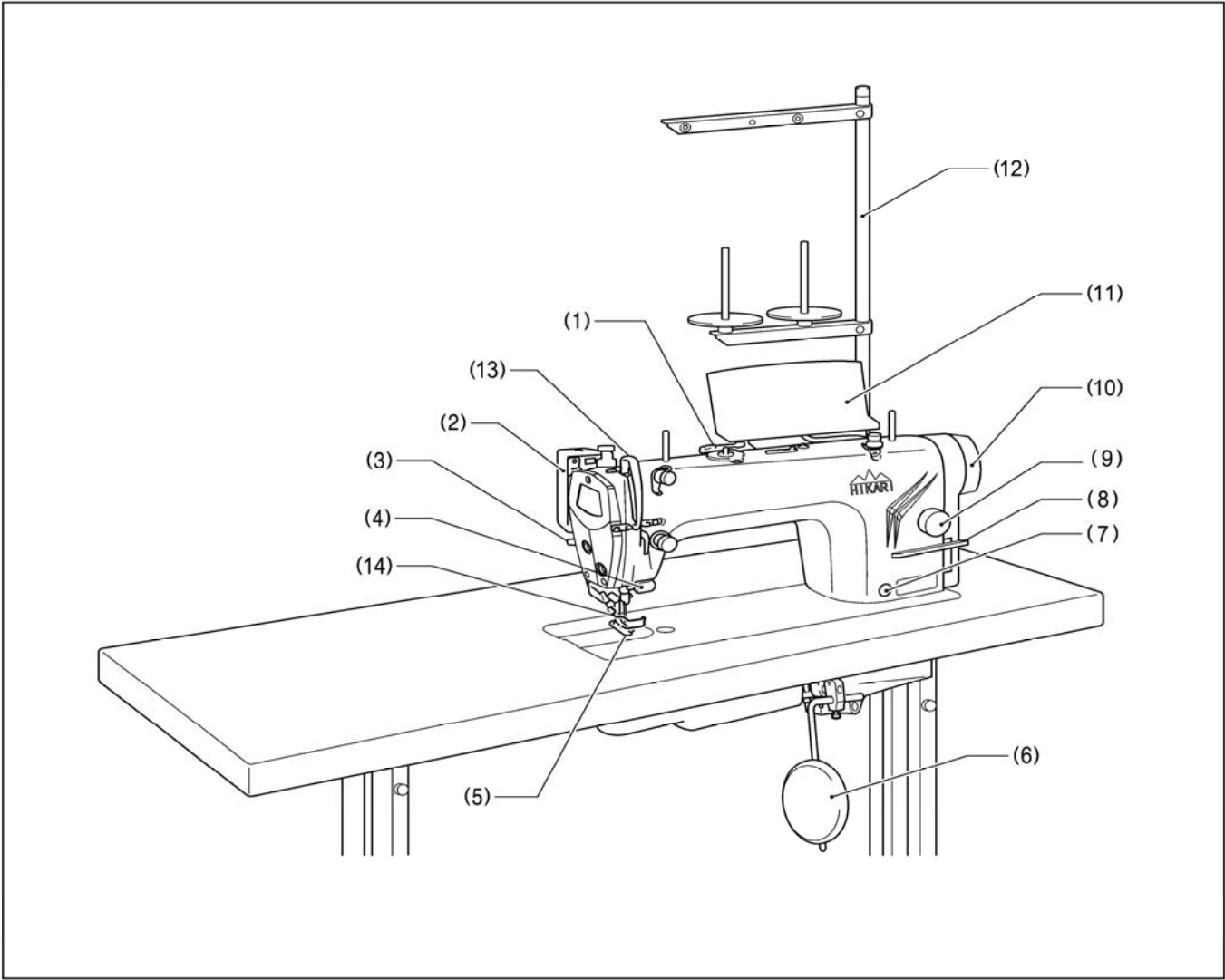
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1. 各部件名称/Name of major parts



(1)梭芯绕线装置	(2)扫线装置	(3)压脚装置
(4)倒缝装置按钮(调节器)	(5)压脚	(6)膝控碰块
(7)油量表视窗	(8)倒缝扳手	(9)针距旋钮
(10)缝纫机手轮	(11)操作盘(选择有操作盘规格时)	(12)线架
安全保护装置		
(13)挑线杆防护罩	(14)护指器	
(1) Bobbin winder	(2) Thread wiper	(3) Lifting lever
(4) Quick reverse (Actuator)	(5) presser foot	(6) knee lifter assembly
(7) Oil gauge window	(8) Reverse lever	(9) Stitch length dial
(10) Machine pulley	(11)operation panel (Models with operation panel)	(12)Cotton stand Safety devices
(13)Thread take up cover		(14)Finger guard



*2 当缝纫速度达到 3000 rpm 或更高时，将针距设在 4.5mm 或 4.5mm 以下。

3. 安装方法/Installation method

⊘ 请让受过培训的技术人员来安装缝纫机。 Machine installation should only be carried out by a qualified technician.

⚠ 在安装完成前，请不要连接电源，如果误踩下踏板时，缝纫机动作会导致受伤。 Do not connect the power cord until installation is complete. The machine may operate if the treadle is depressed by mistake, which could result in injury.

⚠ 缝纫机重 48Kg, 安装工作必须由两人以上来完成。 The sewing machine weighs more than 44Kg, the installation should be carried out by two or more people.

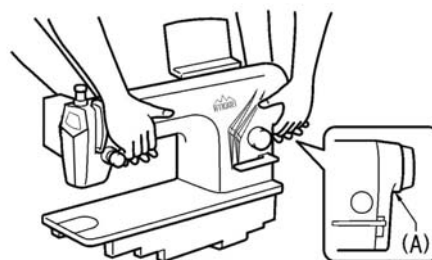
⚠ 请委托购买商店或电器专业人员进行电气配线。 Contact your HIKARI dealer or a qualified electrician for any electrical work that may need to be done.

⚠ 缝纫机头倒下或竖起时，请用双手进行操作。单手操作时因缝纫机的重量万一滑落易导致受伤。

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.

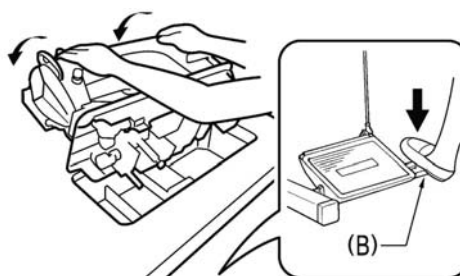
搬运缝纫机/Carrying the machine

1. 应按图示由两人用手托住机壳本体进行搬运。
 2. 还应用手扶住马达盖（A）部，使手轮不能转动。
1. The machine should be carried by the arm by two people as shown in the illustration.
2. Hold the motor cover (A) by hand also so that the pulley does not rotate



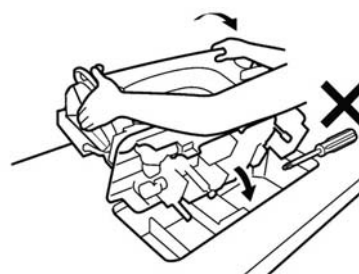
向后倾斜缝纫机机头/Tilting back the machine head

1. 用脚踏住（B）部分，不让台板移动，然后用双手推动机壳本体使缝纫机头部向后倾
1. Hold section (B) with your foot so that the table does not move, and then push the arm with both hands to tilt back the machine head.



将缝纫机头部返回至直立位置/Returning the machine head to the upright position

1. 清除台板开孔附近的所有工具等物件。
 2. 用左手扶住面板，用右手慢慢地将缝纫机头部返回至直立的位置。
- Clear away any tools, etc. which may be near the table holes.
- While holding the face plate with your left hand, gently return the machine head to the upright position with your right hand



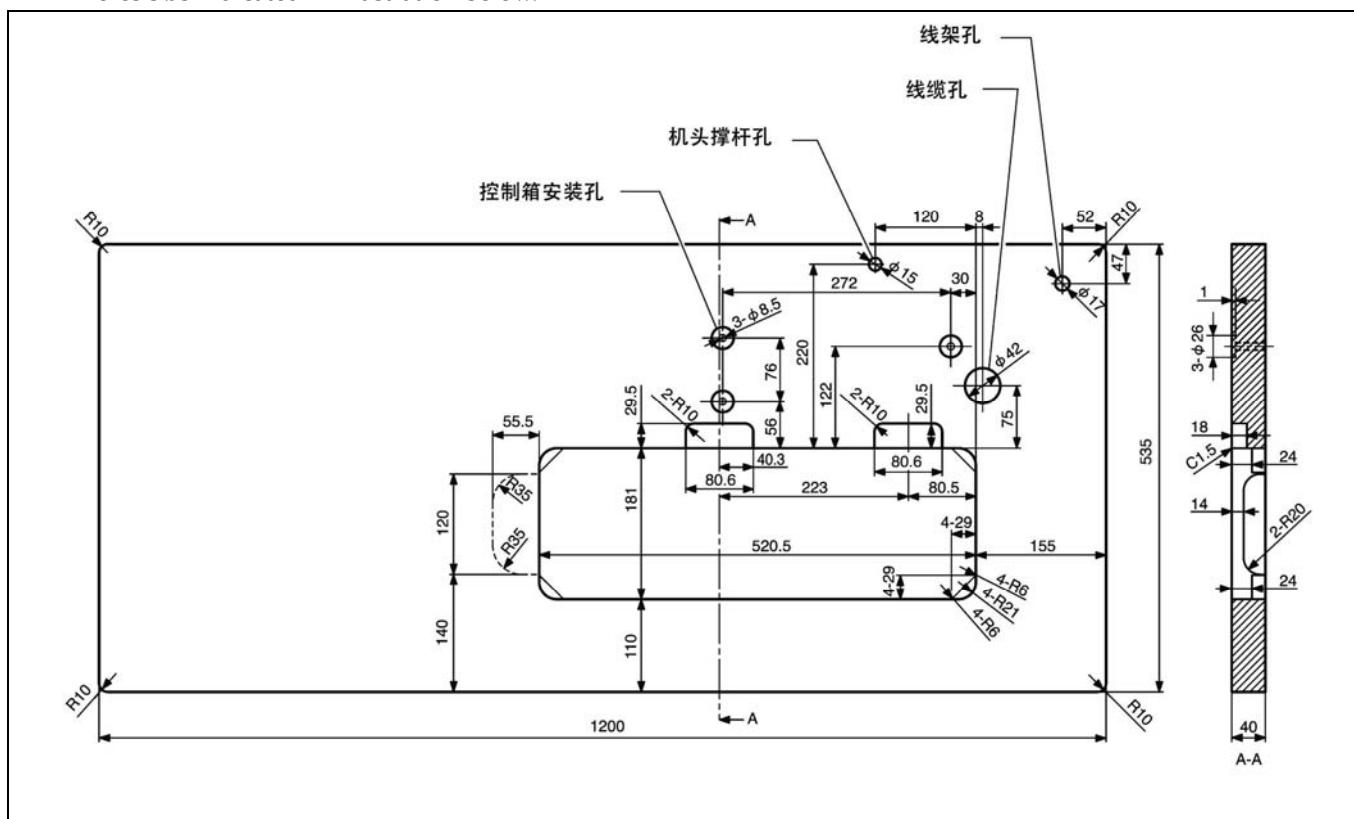
3-1 台板加工图/Table processing diagram

台板的厚度应达 40mm,能够承受缝纫机的重量, 并经受得起缝纫机的震动。

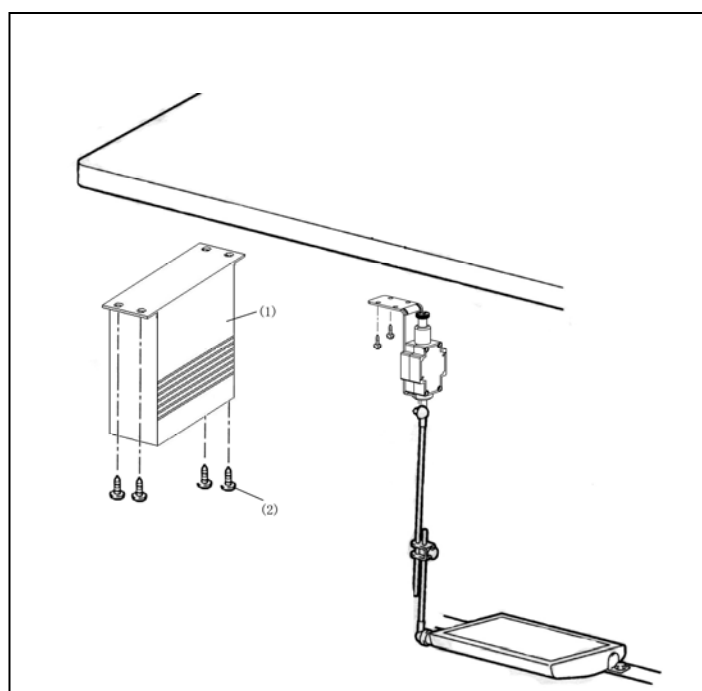
请在如图所示位置上钻孔。

The top of the table should be 40mm in thickness and should be strong enough to hold the weight and withstand the vibration of the sewing machine.

Drill holes s\as indicated in illustration below.



3-2. 安装方法/Installation method



1.控制箱/Control box

- (1) 控制箱/ Control box
- (2) 木螺钉 (4 个) /Bolts (4 pcs)

2.线架/Cotton stand

(1)线架

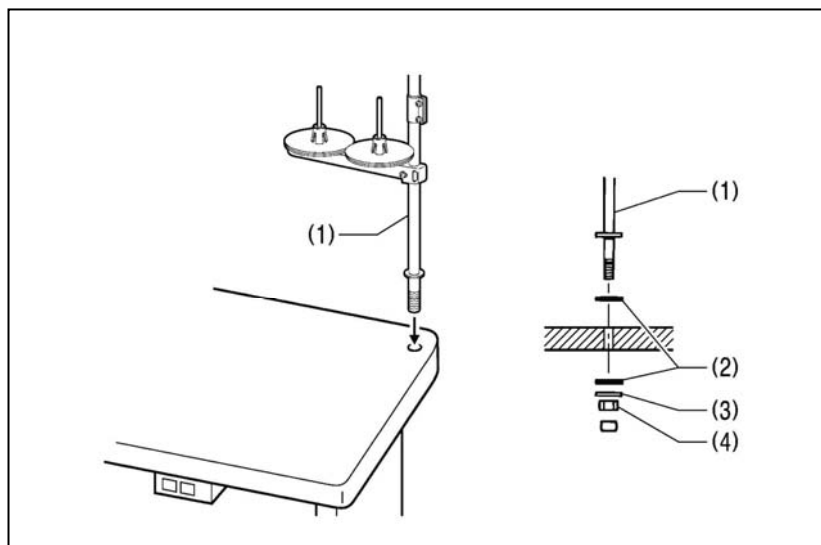
注意:

将螺母(4)拧紧以便将两个橡胶垫片(2)和垫圈(3)夹紧,使使线架(1)不会移动。

(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.油盘/Oil pan

(1)头部防震垫(左)(2 个)

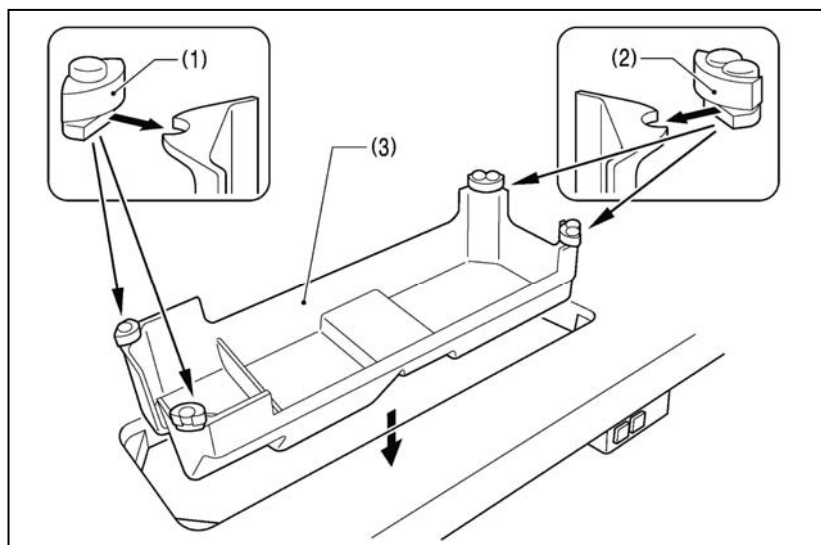
(2)头部防震垫(右)(2 个)

(3)油盘

(1)Head cushions(left)(2 pcs)

(2)Head cushions(right)(2 pcs)

(3)Oil pan



4.机壳铰链

Rubber cushions

(1)机壳铰链套(2 个)

(2)钉(4 个)

(1)Rubber cushions(2 pcs)

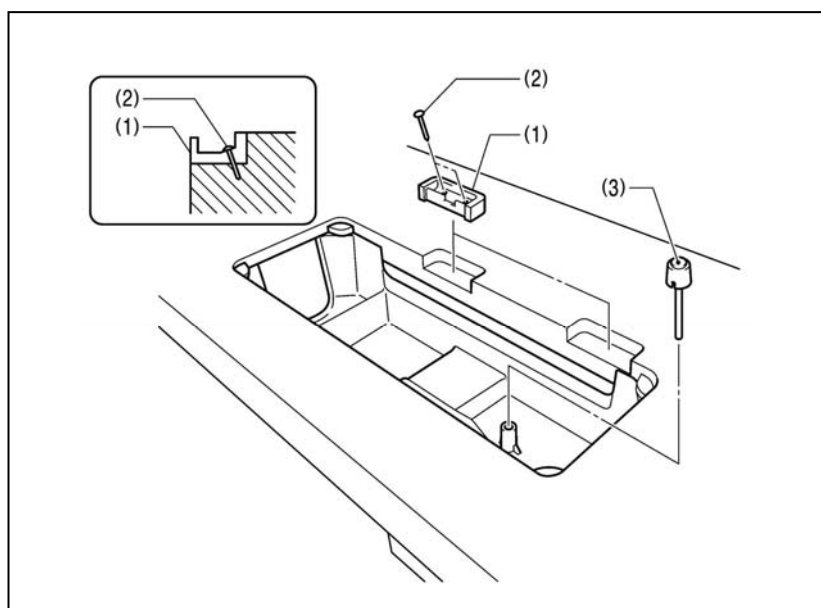
(2)Nails (4 pcs)

5.抬压脚顶杆

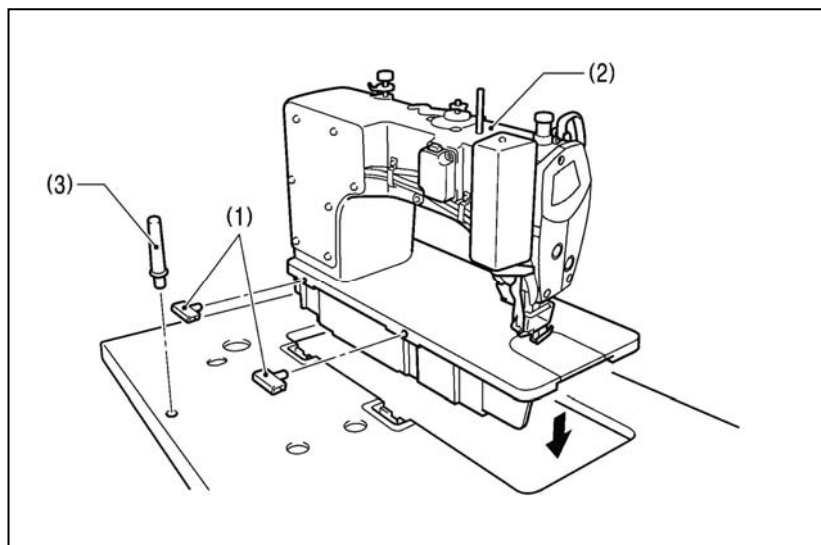
Knee lifter complying bar

(3)抬压脚顶杆

(3) Knee lifter complying bar



6. 缝纫机头部/Machine head



(1)机头铰链(2 个)

(2)缝纫机头部

(3)机头撑杆

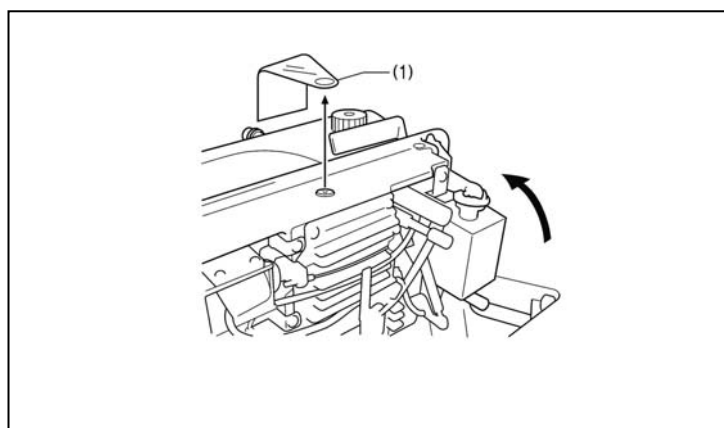
注意：将机头撑杆(3)安全稳定地插入台板开孔。如果机头撑杆(3)未插入到位，则缝纫机头部在向后倾斜时因不稳定而发生危险。

(1)Hinges (2 pcs)

(2)machine head

(3)head rest

Note: Tap the head rest (3) securely into the table hole. If the head rest (3) is not pushed in as far as it will go, the machine head will not be sufficiently stable when it is tilted back.



7. 带胶贴片(取下)/Sticker(Remove)

(1)带胶贴片

(1) Sticker

8. 膝控碰块/Knee lifter plate

(1) 膝控碰块/

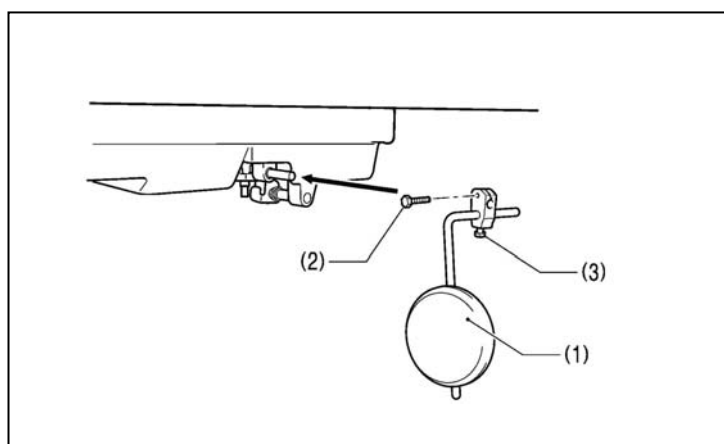
(2) 螺栓/

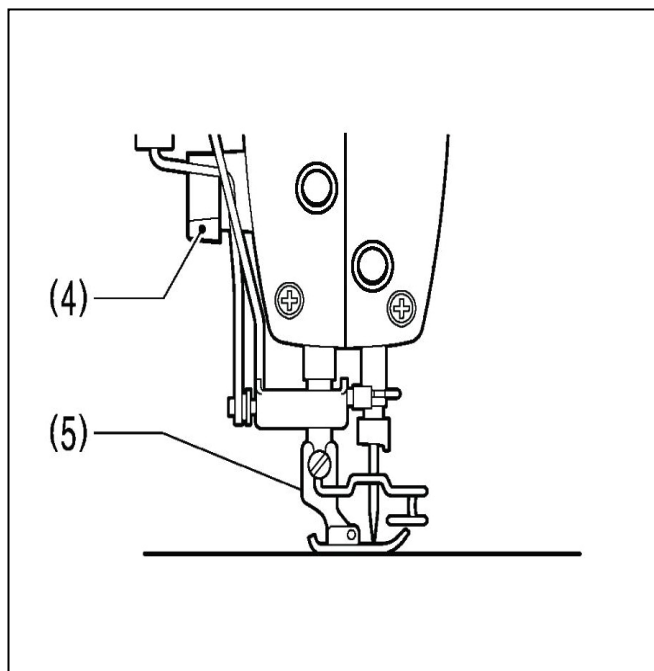
松开螺栓(3),将膝控碰块(1)移至易于使用的地方。

(1) Knee lifter plate

(2) Bolt

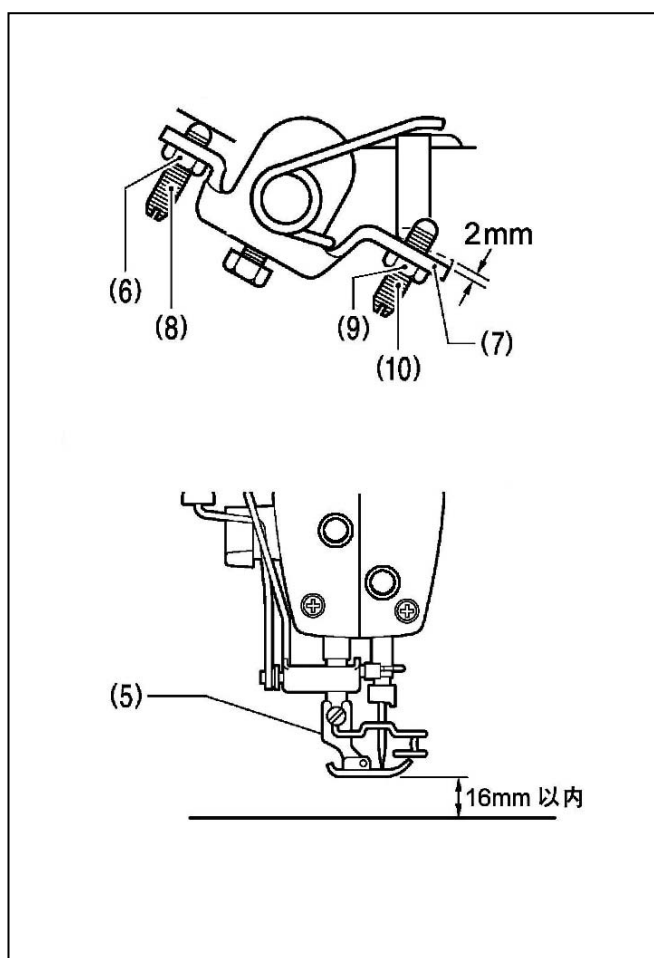
Loosen the bolt (3) and move the knee lifter plate (1) to a position where it is easy to use





9. 调整抬压杠杆/Knee lifter adjustment

- (1) 转动手轮以便送布牙处于针板下方。
- (2) 用压脚扳手(4)放下压脚(5)。
- (3) 松开螺母(6)
- (4) 转动螺钉(8)进行调节，以使用手在轻压膝控碰块(1)时，抬压杠杆(7)游隙量约为 2mm。
- (5) 完成调节后，将螺母(6)拧紧。
- (1) Turn the machine pulley so that the feed dog is below the top of the needle plate.
- (2) Lower the presser foot (5) by using lifting lever (4).
- (3) Loosen the nut (6)
- (4) Turn the screw (8) to adjust so that the amount of play in the knee lifter (7) is approximately 2 mm when the knee lifter plate (1) is gently pressed.
- (5) Securely tighten the nut (6).



10. 压脚高度的调整 /Adjusting the height of the presser foot

压脚高度最大可调整到 16mm 为止。

- (6) 松开螺母(9)
- (7) 转动调节螺钉(10)进行调节，以便在完全压下膝控碰块(1)时，压脚(5)处在针板上方 16mm 范围内的位置。
- (8) 完成调节后，将螺母(9)拧紧。

The height of the presser foot can be adjusted a maximum of 16mm.

- (6) Loosen the nut (9)
- (7) Turn the adjusting screw (10) to adjust so that the presser foot (5) is at the desired position within a distance of 16 mm of needle plate when the knee lifter plate (1) is fully pressed.
- (8) After adjustment is completed, securely tighten the nut (9)

3-3. 加油方法/Lubrication method

⊘ 在油未完成前，请勿插上电源。当误踩下踏板时，缝纫机动作会导致人员受伤。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.

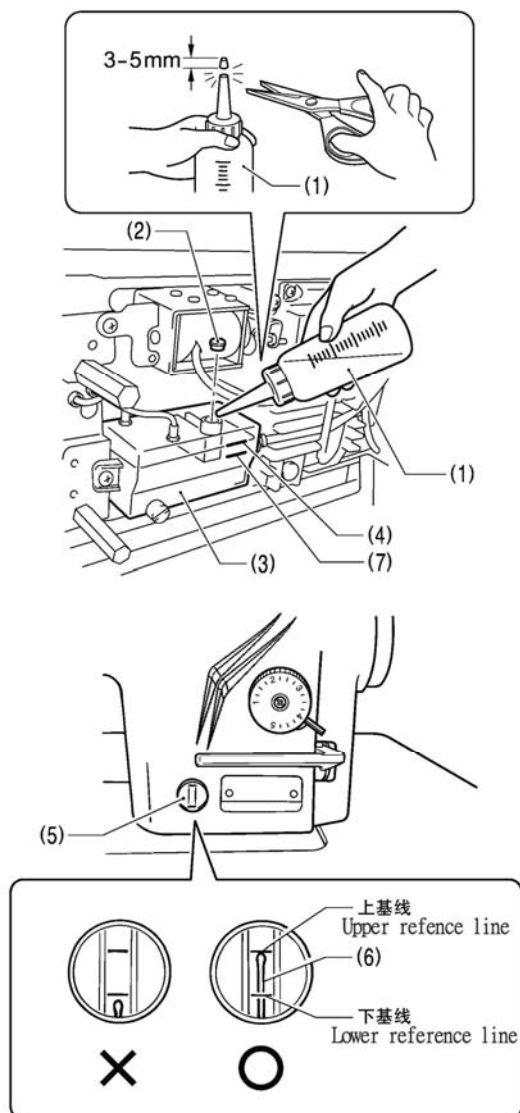
⊘ 使用润滑油和黄油时，务必戴好保护眼镜和保护手套等，以防润滑油落入眼中或沾在皮肤上，引起发炎。另外，润滑油或黄油不能饮用，否则会引起呕吐和腹泻。将油放在小孩拿不到的地方。Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhea. Keep the oil out of the reach of children.

⚠ 在剪去油罐的油嘴口时，请务必拿住油嘴的根部。如果拿住油嘴口，剪刀容易伤到手，导致受伤。

When cutting the nozzle of the oil tank, hold the bases of the nozzle securely. If you hold the end of the nozzle, injury from the scissors may result.

*第一次使用缝纫机或长时间未使用缝纫机时，必须要补充机油

*请使用富山公司指定的缝纫机润滑油。



1.将附件中的油罐(1)的油罐口，用剪刀剪去 3~5mm.

2.向后倾斜缝纫机头部。

3.拆下橡皮塞(2),向油箱(3)倒入 120ml 的润滑油。(上基线(4)作为加油时的参考线。)

4.将橡皮塞(2)装回原处。

5.将缝纫机头部返回至原位。

6.检查油量表(6)是否达到油量表视窗(5)中的上基线。

*The sewing machine should always be lubricated and the oil supply replenished before it is used for the first time, and also after long periods of nonuse.

*Use only the lubricating oil specified by HIKARI.

1. Hold the base of the nozzle on the accessory oil tank (1),and then use scissors to cut 3~5 mm off the end of the nozzle.

2. Tilt back the machine head.

3. Remove the rubber cap (2), and pour 120ml of lubricating oil into the oil tank (3).(Use the upper reference line (4) as a guide when pouring.)

4. Replace the rubber cap (1)

5. Return the machine head to its original position.

6.Check that the oil gauge (6) comes to the upper reference line in the oil gauge window (5).

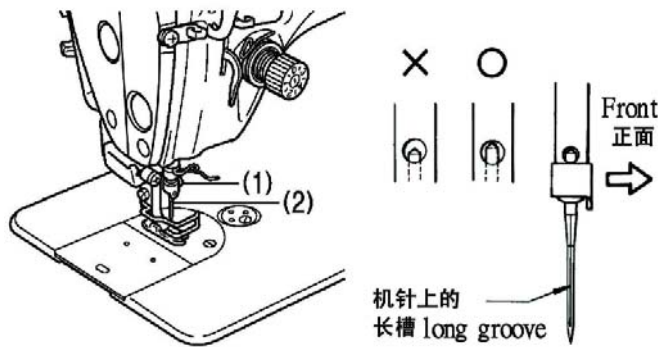
*补充润滑油的时期/Lubrication oil replenishment interval
如果油量表(6)中的油量低于下基线(及油箱(3)中的油量低于下基线(7)时),请务必添加润滑油。

If the oil gauge (6) drops below the lower reference line(or if the oil level drops below the lower reference line (7) on the oil tank (3)),be sure to replenish the oil.

4. 缝纫前的准备/Preparation before sewing

4-1. 机针的安装方法/Installing the needle method

⚠ 安装机针前，请切断电源，当误踩下踏脚板时，缝纫机动作会导致受伤。 Turn off the power switch before installing the needle. The machine may operate if the treadle is depressed by mistake, which could result in injury.



1. 转动缝纫机手轮,将针杆移至最高位置.

2. 松开螺钉(1).

3. 将机针(2)笔直插入到位,确认机针上的长槽处于左侧,然后拧紧(1).

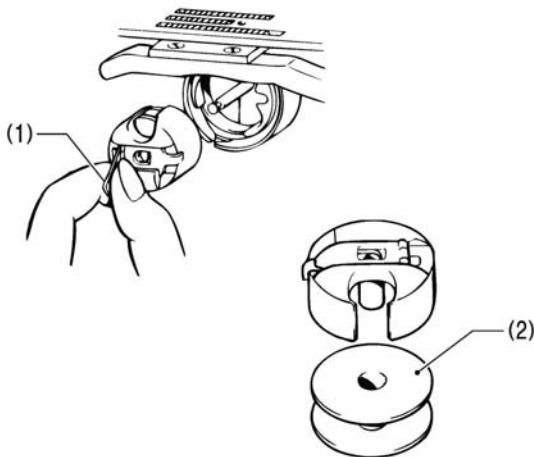
1. Turn the machine pulley to move the needle bar to its highest position.

2. Loosen the screw (1).

3. Insert the needle (2) in a straight line as far as it will go, making sure that the long groove on the needle is at the left, and then securely tighten the screw (1).

4-2. 梭芯套的装拆方法/Removing the bobbin case method

⚠ 取出梭芯套时，请切断电源，当误踩下踏脚板时，缝纫机动作会导致受伤。 Turn off the power switch before removing the bobbin case. The machine may operate if the treadle is depressed by mistake, which could result in injury.



1. 转动手轮将机针升起,直至其处于针板上方。

2. 向上将梭芯套的插销(1) 拉出, 然后拆下梭芯套。

3. 插销(1)释放后, 取出梭芯(2)。

* 梭芯套中有旋梭空转防止簧(3)。旋梭空转防止簧(3)可防止梭芯在剪线等情况下空转。

* 使用轻合金制成的梭芯(2)。

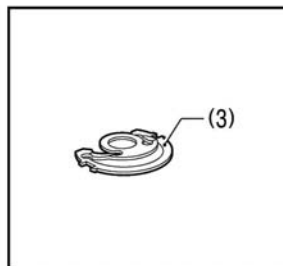
1. Turn the machine pulley to raise the needle until it is above the needle plate.

2. Pull the latch (1) of the bobbin case upward and then remove the bobbin case.

3. The bobbin (2) will come out when the latch (1) is released.

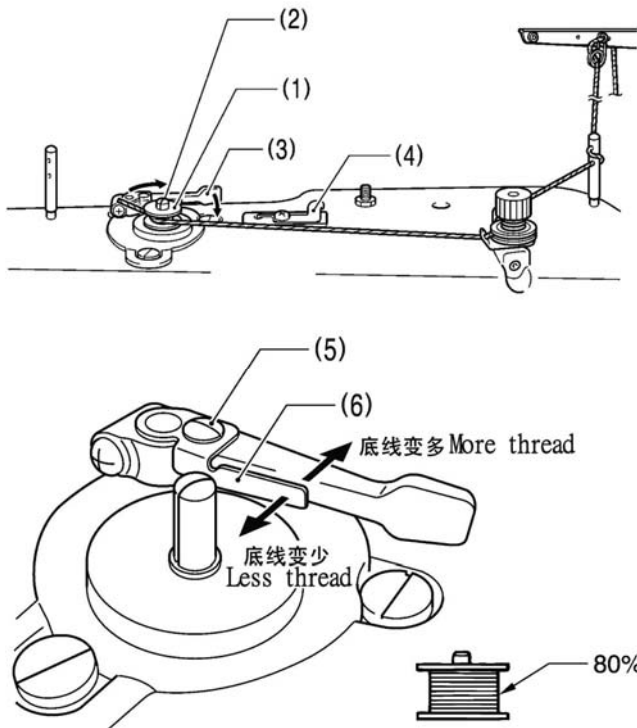
* There is an anti-spin spring (3) inside the bobbin case. The anti-spin spring (3) prevents the bobbin from racing at times such as during thread trimming.

* Use bobbin (2) made of light alloy as specified by HIKARI.



4-3 底线的绕线方法/Winding the lower thread method

 在卷线过程中,不要触摸任何运动部件或将物体靠在运动部件上,因为这会导致人身伤害及缝纫机损坏。
Do not touch any of the moving parts or press any objects against the machine while Winding the lower thread, as this may result in personal injury or damage to the machine.



1. 打开电源开关。
 2. 将梭芯(1)置于卷线轴(2)上。
 3. 按箭头所示的方向将线在梭芯(1)上卷绕几次。
 4. 将梭芯压臂柄(3)推向梭芯(1)。
 5. 用压脚扳手将压脚抬起。
 6. 踏下脚踏板, 随即开始卷绕底线。
 7. 底线卷绕一旦完成, 梭芯压臂柄(3)将自动返回。
 8. 底线卷绕完后, 将梭芯取下, 用切刀(4)将线剪断。
- *松开螺钉(5), 移动梭芯压杆(6)调节卷线在梭芯上的底线量。

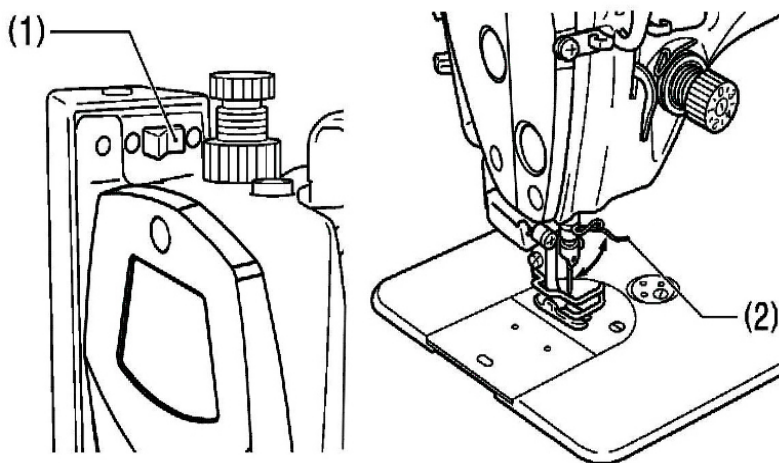
注意: 卷线在梭芯上的底线量最多应为梭芯容量的80%。

1. Turn on the power switch.
2. Place the bobbin (1) onto the bobbin winder shaft (2).
3. Wind the thread several times around the bobbin (1) in the direction indicated by the arrow.
4. Push the bobbin presser arm (3) toward the bobbin (1).
5. Raise the presser foot with the lifting lever.
6. Depress the treadle. Lower thread winding will then start.
7. Once winding of the lower thread is completed, the bobbin presser arm (3) will return automatically.
8. After the thread has been wound on, remove the bobbin and cut the thread with the knife (4).

* loosen the screw (5) and move the bobbin presser (6) to adjust the amount of thread wound onto the bobbin.

Note: The amount of the wound onto the bobbin should be a maximum of 80% of the bobbin capacity.

4-4 扫线装置的使用方法/Using the thread wiper method

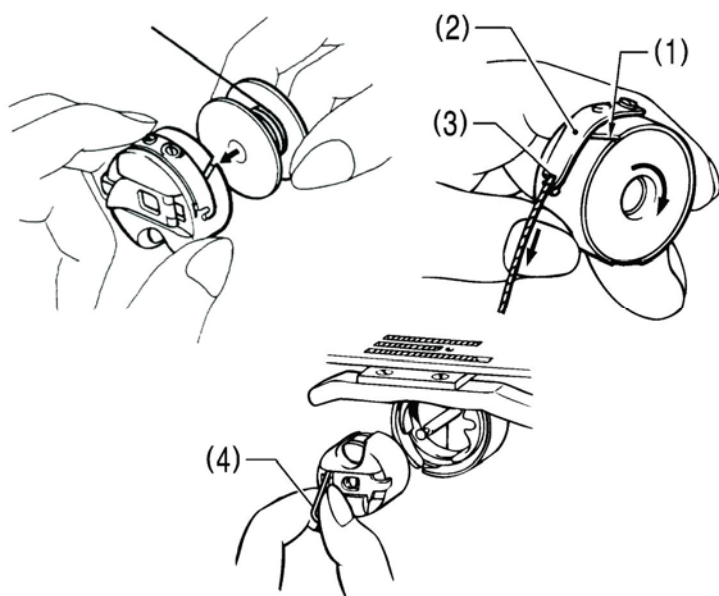


将扫线器开关(1)打开, 切线完成后, 扫线器(2)将进行扫线。

Turn on the thread wiper switch (1).if this is done, the thread wiper (2) will operate after the thread is trimmed.

4-5 梭芯套的装取方法/Installing the bobbin case method

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



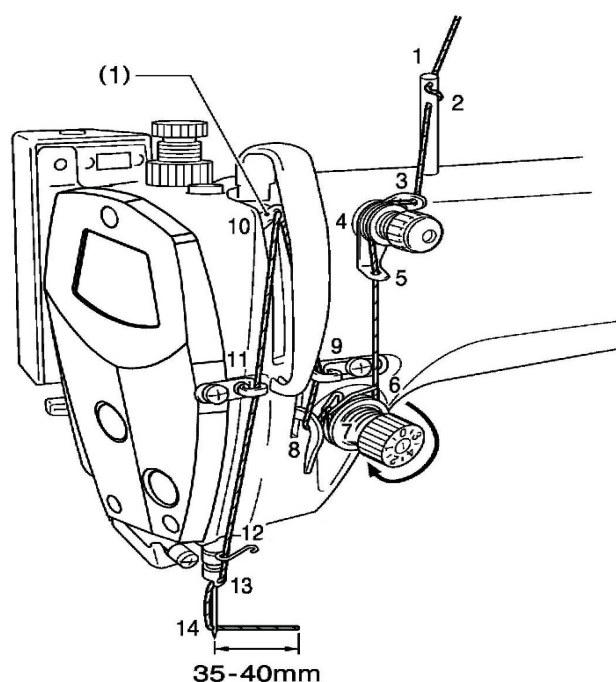
1. 转动手轮将机针升起,直至其处于针板上方。
2. 握住梭芯以便向右卷绕底线,将梭芯插入梭芯套。
3. 将底线穿过线槽(1)和夹线弹簧(2)下方,然后从导线器(3)中拉出。
4. 当拉出底线时,检查梭芯是否按顺时针方向转动。
5. 用手拿住插销(4),将梭芯套插入旋梭。

1. Turn the machine pulley to raise the needle until it is above the needle plate.
2. While holding the bobbin so that the thread winds to the right, insert the bobbin into the bobbin case.
3. Pass the thread through the slot (1) and under the tension spring (2), and then pull it out from the thread guide (3).

4. Check that the bobbin turns clockwise when the thread is pulled.
5. Hold the latch (4) on the bobbin case and insert the bobbin case into the rotary hook.

4-6 线的穿法/Threading the upper thread

⚠ 在穿线过程中,请切断电源,当误踩下踏板时,缝纫机动作会导致受伤。Turn off the power switch before threading the upper thread. The machine may operate if the treadle is depressed by mistake, which could result in injury.



在穿引面线之前先转动手轮,将挑线杆(1)置于最高位置。这样会使穿引更加容易,并防止棉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.

4-7 针距的调节方法/Adjusting the stitch length method

1. 向上推动旋钮锁杆(1)直至听到释放锁的“咔嗒”声。

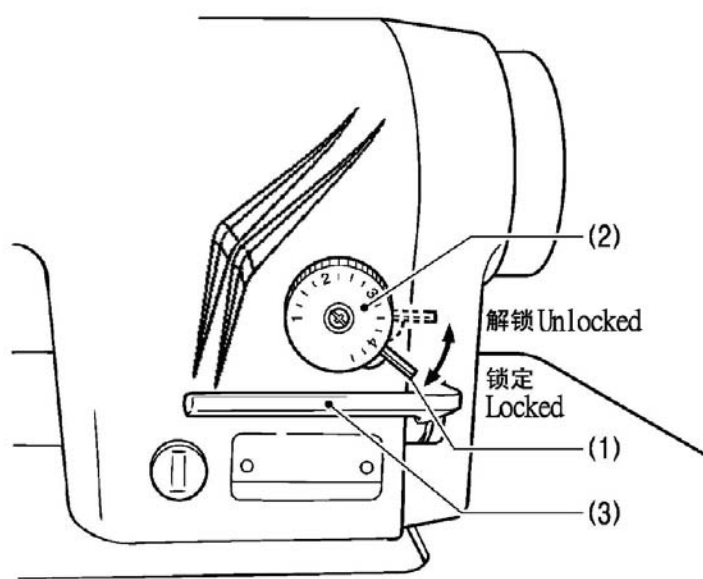
2. 顺时针或逆时针转动针距旋钮(2),使所需针距数字处于旋钮最上端的位置。

*数字越大, 针距越长。(旋钮上的数字作为参考值。实际的针距视缝纫面料和厚度而定。在观察缝纫好的针距的同时进行调节。)

*按设定值从大到小的方向转动针距旋钮(2)时, 如果一边将倒缝搬手(3)推至中央位置, 一边转动针距旋钮(2)时, 会使旋钮转动的更加容易。

3. 向下推动旋钮锁杆(1)将其完全锁定。

*确认针距旋钮(2)不能转动。



1. Push the dial lock lever (1) up until it click to release the lock.

2. Turn the stitch length dial (2) clockwise or counter clockwise so that the desired stitch length is at the upper most position on the dial.

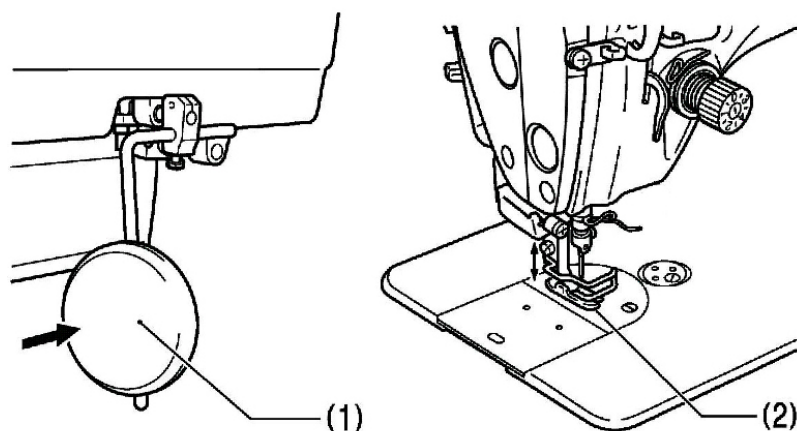
*The larger the number, the longer the stitch length will be. (The numbers on the dial are for use as a guide. The length of the finished stitches may vary depending on the type and thickness of material being sewn. Adjust while looking at the finished stitches.)

*When turning the stitch length dial (2) from a larger setting to a smaller setting, it will be easier to turn the dial if the reverse lever (3) is pushed to the halfway down position.

3. Push the dial lock lever (1) down firmly to lock it.

*Check that the stitch length dial (2) does not rotate.

4-8 膝控碰块的使用方法/Using the knee lifter method



在按下膝控碰块(1)时, 可抬高压脚(2)

The presser foot (2) can be raised by pressing the knee lifter plate (1).

5. 缝纫/Sewing

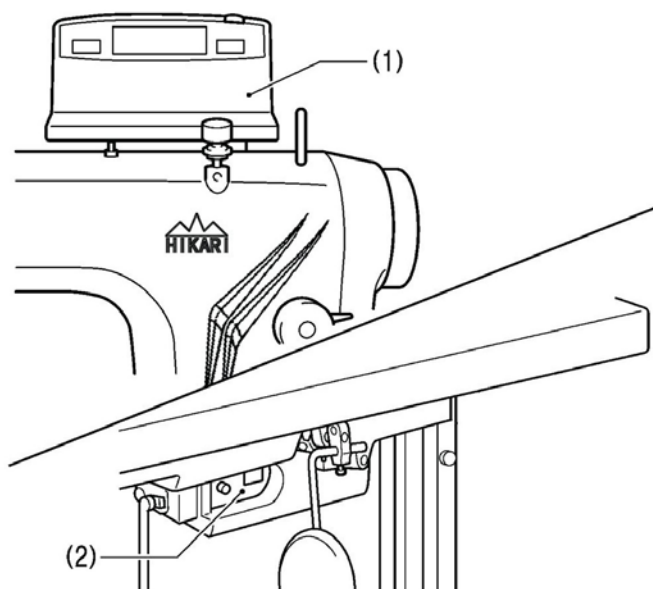
 发生下列情况时，请切断电源。否则误踩下踏板时，缝纫机动作会导致受伤。1.机针穿线时。2.更换机针或梭芯时。3.缝纫机不使用或人离开缝纫机时。Turn off the power switch at the following times. The machine may operate if the treadle is depressed by mistake, which could result in injury. 1. when threading the needle . 2. when replacing the bobble and needle. 3. when not using the machine and when leaving the machine unattended.

 为了安全起见，在使用缝纫机之前，请安装保护装置。如果未安装这些装置就使用缝纫机，会造成人身伤害及缝纫机损坏。Attach all safety devices before using the sewing machine. If the machine is used without these devices attached, injury may result.

 缝纫过程中，不要触摸任何运动部件或将物体靠在运动部件上，因为这会导致人身伤害及缝纫机损坏。Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.

 缝纫机头倒下或竖起时，请用双手进行操作。单手操作时因缝纫机的重量万一滑落易导致受伤。

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.



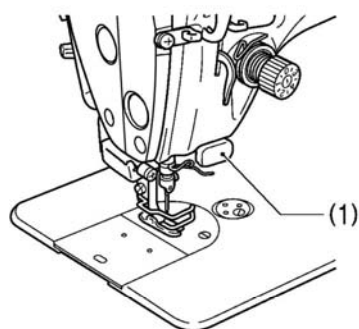
5-1 缝纫的方法/Sewing method

1.编制缝纫所需的程序。

2.踏下脚踏板开始缝纫。

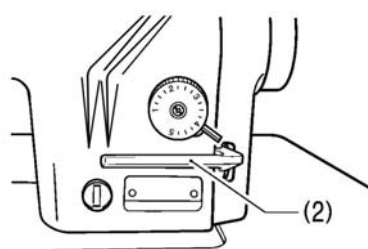
1.Carry out the programming which is necessary for sewing.

2. Depress the treadle to start sewing.



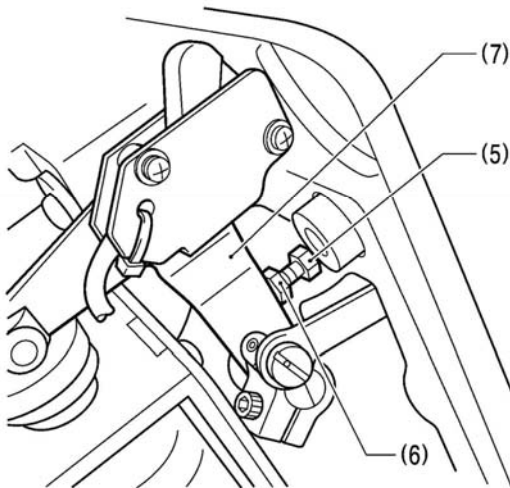
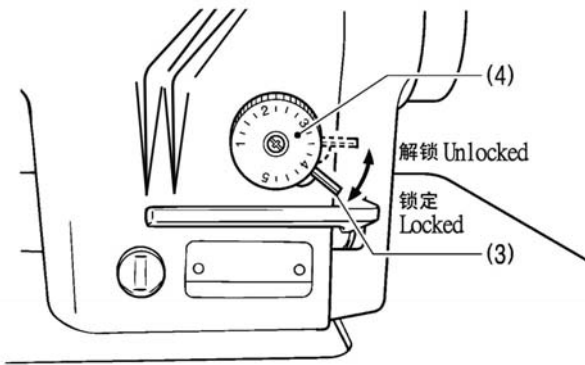
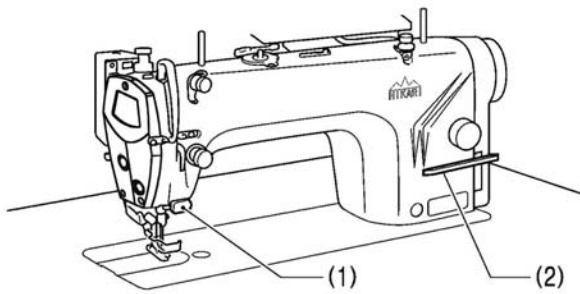
5-2 倒缝加固的方法/Back tacking method

按下倒缝装置按钮(1)或倒缝扳手(2)时，送料方向将会相反。释放时，送料方向恢复正常。



When the actuator (1) or the reverse lever (2) is pressed during sewing, the feed direction will be reversed. When it is released, the feed direction will return to normal.

5-3 缝纫密针的方法/Sewing condensed stitches method



*如果缝纫时按倒缝装置按钮(1)或倒缝扳手(2),可以用小的针迹长度进行缝纫(前向)。

*在缝纫前,如下所设定密针针迹长度。

*In you press the actuator (1) or the reverse lever (2) while sewing is in progress, you can sew stitches(forward direction) with small stitch lengths.

*Before carrying out sewing, set the stitch length for condensed stitches as follows.

<设定/Setting>

1. 抬起旋钮锁杆(3)释放锁。
 2. 把针距旋钮(4)转动到将用于密针的针迹长度。
 3. 后倾缝纫机机头。
 4. 松开螺母(5),然后转动螺栓(6)直到螺栓头接触到电磁铁杆(7)。
 5. 拧紧螺母(5)以便固定螺栓(6)。
 6. 将缝纫机机头部恢复原位。
1. Lift up the dial lock lever (3) to release the lock.
 2. Turn the stitch length dial (4) to the stitch length to be used for condensed stitches.
 3. Tilt back the machine head.
 4. Loosen the nut (5) and then turn the bolt (6) until its head is touching the solenoid lever (7).
 5. Tighten the nut (5) to secure the bolt (6).
 6. Return the machine head to its normal position.

<缝纫/Sewing>

1. 把针距旋钮(4)恢复到正常缝纫的针迹长度。
2. 推下旋钮锁杆(3)使其锁住。
3. 开始缝纫。
4. 在要开始密针缝纫的位置,按下倒缝装置按钮(1)或倒缝扳手(2)。(按下倒缝装置按钮(1)或倒缝扳手(2)时进行密针缝纫。)

*要停止密针缝纫,拧紧螺栓(6)使其头部不和电磁铁杆(7)接触。

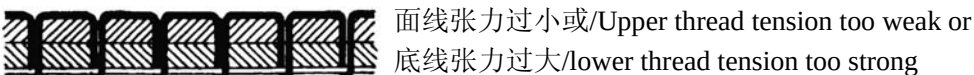
1. Return the stitch length dial (4) to the stitch length for normal sewing.
 2. Push down the dial lock lever (3) to engage the lock.
 3. Start sewing.
 4. At the position where you would like to start sewing condensed stitches, press the actuator (1) or the reverse lever (2). (condensed stitches are sewn while the actuator (1) or the reverse lever (2) is being pressed.)
- * To stop sewing condensed stitches, tighten the bolt (6) so that its head is not touching the solenoid lever (7).

6. 缝纫效果/Thread tension

6-1 线张力的调节/Adjusting the thread tension

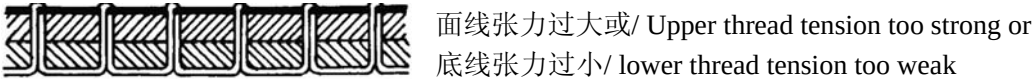
 取出梭芯套时，请切断电源，当误踩下踏板时，缝纫机动作会导致受伤。 Turn off the power switch before removing or inserting the bobbin case. The machine may operate if the treadle is depressed by mistake, which could result in injury.

正确的针迹/Good even stitches



→ 增大面线张力/Increase the upper thread tension.

减小底线张力/Decrease the lower thread tension



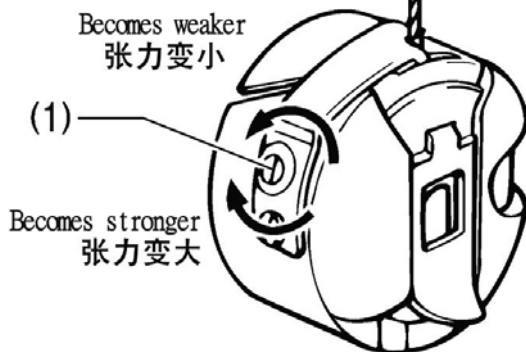
→ 减小面线张力/Decrease the upper thread tension

增大底线张力/Increase the lower thread tension.

<底线张力/ Lower thread tension >

拉住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。

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/ Upper thread tension >

在底线张力调节之后，调节面线张力以使针脚均匀平整。

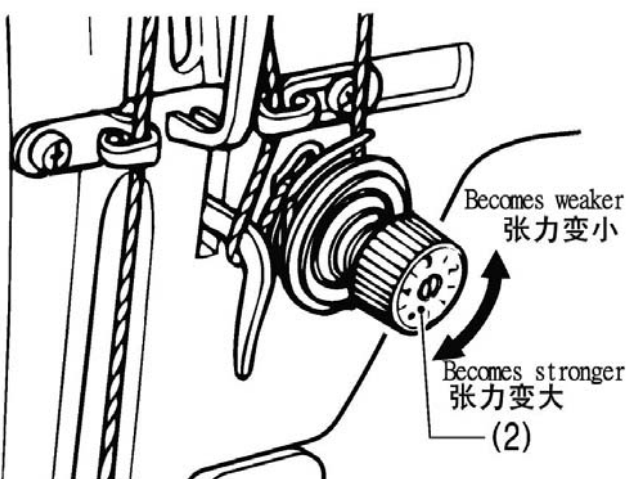
1. 降低压脚。

2. 转动夹线螺母(2)进行调节。

After the lower thread tension has 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).



6-2 压脚压力的调节/Adjusting the presser foot pressure

正确的针迹/Good even stitches

面线/Upper thread

出现跳针/skipped stitches occur

针距不均/Uneven stitch length

针脚起皱/Stitches are puckered

增加压力/Increase the pressure

减小压力/Decrease the pressure

应尽可能减小压脚压力，但须有足够压力使面料不致滑动。

1. 松开调节螺母(1)。
2. 转动压力调节螺栓(2)以调节压脚压力。
3. 拧紧调节螺母(1)。

The presser foot pressure should be as weak as possible, but strong enough so that the material does not slip.

1. Loosen the adjusting nut (1).
2. Turn the presser adjusting screw (2) to adjust the presser foot pressure.
3. Tighten the adjusting nut (1).

6-3 剪线后面线残留长度的调节/Adjusting the trailing length after thread trimming

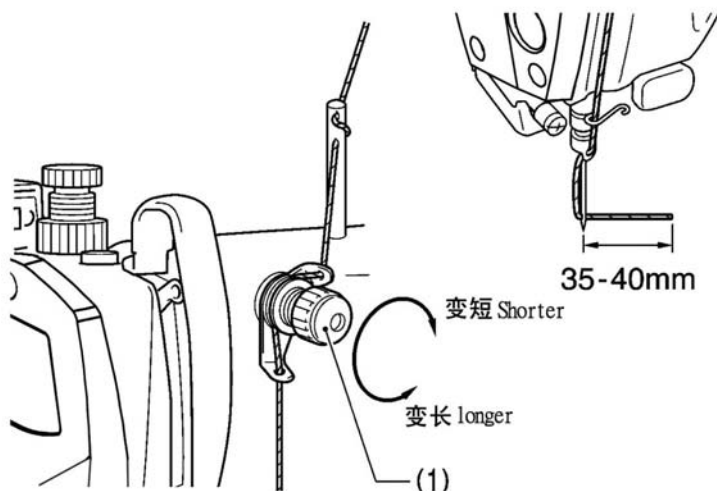
1. 剪线时，线张力松弛，仅用夹线器(1)施加张力。
2. 面线的标准残留长度为 35~40mm。

3. 如果增加夹线器(1)的张力，切线后面线残留长度将会减少；减小张力，长度将会增加。

转动夹线器(1)进行调节。

1. At the time of thread trimming, the thread tension is loosened and tension is applied by the pretension (1) only.
2. The standard trailing length for the upper thread is 35~40mm.
3. If the tension of the pretension (1) is increased, the lengths of the thread trailing from the needle tips will be reduced; if the tension is reduced, the lengths will be increased.

Adjust by turning the pretension (1).

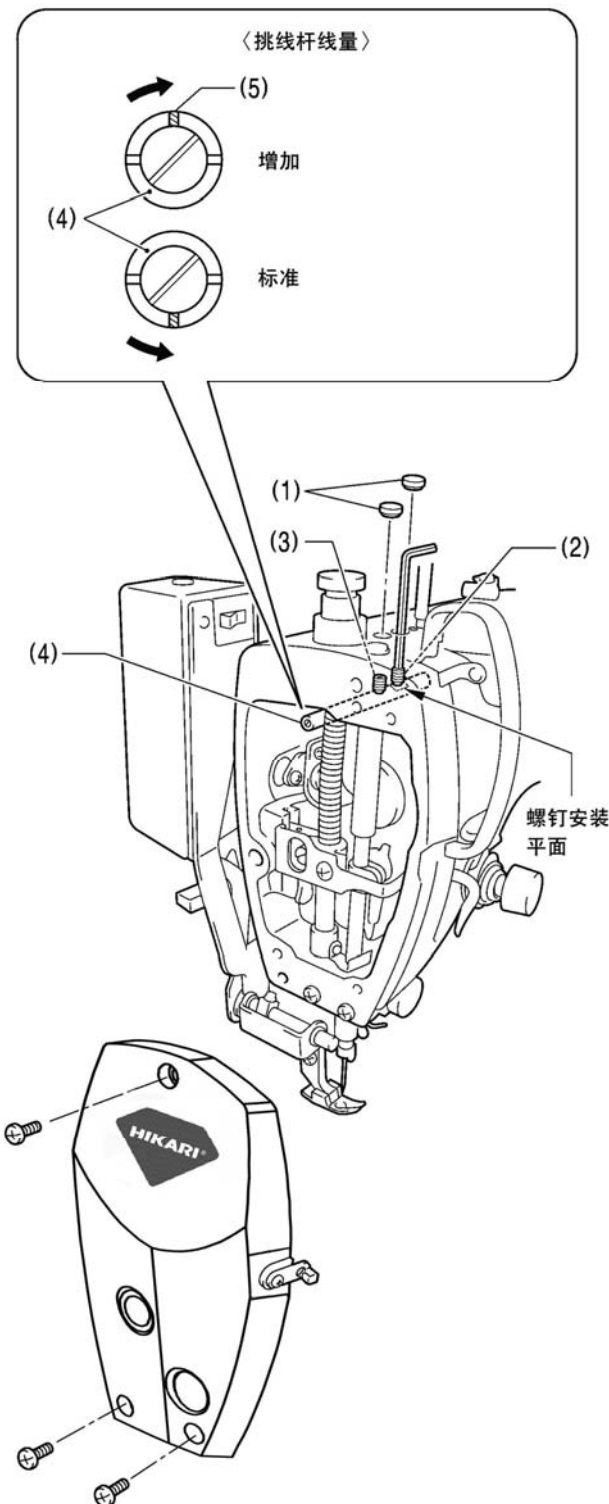


6-4 挑线杆线量的调节(M 规格)/Adjusting the thread take up amount (M specifications)

 在作业之前,请切断电源,当误踩下脚踏板时,缝纫机动作会导致受伤。Turn off the power switch before carrying out this operation. The machine may operate if the treadle is depressed by mistake, which could result in injury.

注意: 除 M 规格以外,不可使用该功能。

Note: Do not use this function with models that are not M specifications.



如果在缝纫厚布料时,发现剪线后挑线杆上线量太少,可以增加挑线杆上的线量。

1. 拆下面板。
2. 取出橡皮塞(1) [2 个]。
3. 使用内六角扳手将螺钉(2)和(3)松开 2 周。
4. 调节挑线杆线量。
1. Remove the face plate.
2. Remove the two rubber caps (1).
3. Use a hexagonal wrench to loosen the set screws (2) and (3) by approximately two turns.
4. Adjust the thread take up amount.

<当要增加挑线杆线量时/To increase the thread take up amount>

将挑线支架轴(4)按顺时针方向回转,使槽(5)正好朝上。
Turn the thread take up support shaft (4) clockwise so that the groove (5) is facing straight upward.

<当要挑线杆线量恢复到标准量时/To return the thread take up amount to the standard setting>

将挑线支架轴(4)按逆时针方向回转,使槽(5)正好朝下。
Turn the thread take up support shaft (4) counterclockwise so that the groove (5) is facing straight downward.

5. 在挑线支架轴(4)推到最里面的状态下,先将螺钉(2)拧到挑线支架轴(4)的螺钉安装平面上。
6. 然后再拧上螺钉(3)。
7. 装上橡皮塞(1) [2 个]。
8. 安装上面板。
5. With the thread take up support shaft (4) pushed in as far as it will go, first tighten the set screw (2) until it touches the screw stop on the thread take up support shaft (4).
6. After this, tighten the set screw (3).
7. Install the two rubber caps (1).
8. Install the face plate.

7. 保养/Cleaning

 在开始清洁作业前，请切断电源。如果误踩下踏板时，缝纫机动作会导致人员受伤。Turn off the power switch before carrying out cleaning. The machine may operate if the treadle is depressed by mistake, which could result in injury.

 缝纫机头倒下或竖起时，请用双手进行操作。单手操作时因缝纫机的重量万一滑落易导致受伤。

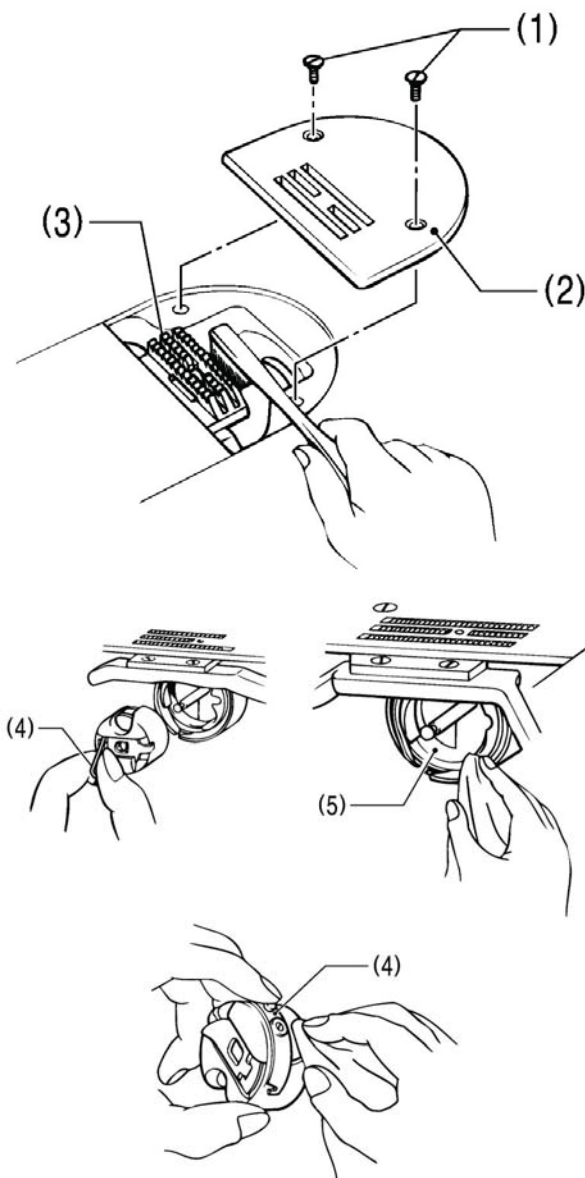
Use both hands to hold the machine head when tilting it back or returning it to its original position. If only one hand is used, the weight of the machine head may cause your hand to slip, and your hand may get caught.

 使用润滑油和黄油时，务必戴好保护眼镜和保护手套等，以防润滑油落入眼中或沾在皮肤上，引起发炎。另外，润滑油或黄油不能饮用，否则会引起呕吐和腹泻。将油放在小孩拿不到的地方。 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.

7-1 日常清理程序/Daily cleaning procedures

为了保持缝纫机的机能，而且能长久的使用，请每天保养。另外，缝纫机如果长时间未使用，请在进行了如下保养后再使用。

The following cleaning operations should be carried out in order to machine the performance of this machine and to ensure a long service life. Furthermore, if the machine has not been used for a long period of time, carry out the following clean procedures before using it again.

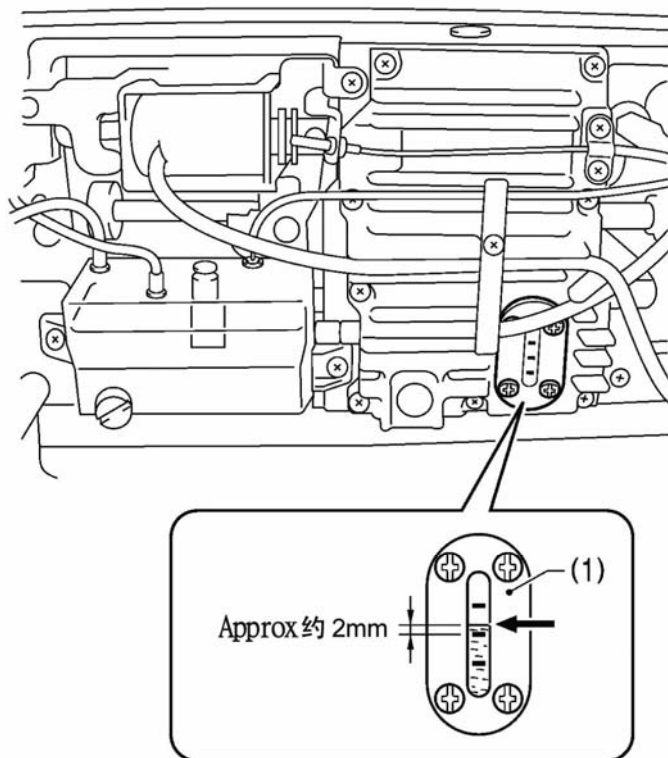


(1).保养/Cleaning

1. 抬起压脚。
 2. 将两只螺钉拆下，然后拆下针板(2)。
 3. 用软毛刷清除送布牙(3)上的灰尘。
 4. 用两只螺钉(1)将针板(2)装上。
 5. 向后倾斜缝纫机头部
 6. 拆下梭芯套(4)。
 7. 用软布擦去旋梭(5)上的灰尘，检查旋梭(5)是否受损。
 8. 将梭芯从梭芯套(4)上拆下，用布清洁梭芯套(4)。
 9. 将梭芯装入梭芯套(4)，再将梭芯套(4)重新装入缝纫机。
1. Raise the presser foot.
 2. Remove the two screws (1), and then remove the needle plate (2).
 3. Use a soft wire brush to clean any dust from the feed dog (3).
 4. Install the needle plate (2) with the two screws (1).
 5. Tilt back the machine head.
 6. Remove the bobbin case (4).
 7. Wipe off any dust from the rotary hook (5) with a soft cloth, and check that there is no damage to the rotary hook (5).
 8. Remove the bobbin from the bobbin case (4) and clean the bobbin case (4) with a cloth.
 9. Insert the bobbin into the bobbin case (4), and then place the bobbin case (4) back into the machine.

(2)加油/Lubrication

A.齿轮箱油量/Gearbox oil quantity



注意/Note:

*将缝纫机头部后倾之后，立即检查齿轮箱的油量。将缝纫机头部长时间置于后倾的位置，齿轮箱油毡中的油量将聚结到底部，从而使油量观察窗(1)中可以看到油位上升，不能精确地测量实际的油位。

*油量观察窗(1)中的油位因缝纫机头部倾斜的角度而有所不同。使用撑杆(2)正确的被安装后，将缝纫机头部后倾。

*Check the quantity of oil in the gearbox immediately after tilting back the machine head. When the machine head is left for long periods in the tilted back position, the amount of oil in the felt inside the gearbox drops and the oil level seen from the oil windows (1) rises, so that it becomes impossible to measure the actual oil level accurately.

*The position of the oil level in the oil windows (1) will vary depending on the angle of the machine head. Tilt back the machine head while the head rest (2) is installed in the correct position.

< 检查油量 /Checking the oil quantity>

油位通常处于油量观察窗(1)中心基线上方约 2mm 的位置。(出厂时已向齿轮箱中加入约 70ml 润滑油。)

The oil level should normally be approximately 2 mm above the center reference line in the oil

windows (1). (70ml of lubricating oil is added to the gearbox at the time of shipment from the factory.)

1.直接从正面查看油量观察窗(1)。

2.如果油位低于正常的位置，按以下步骤添加润滑油。

1. Look at the oil windows (1) from directly in front.

2. If the oil level is below the normal level, add more lubricating oil as described in the following procedure.

<加油方法/Lubrication method >

请使用富山公司指定的润滑油/Use only the lubricating oil specified by HIKARI.

1.拆下橡皮塞(3)。

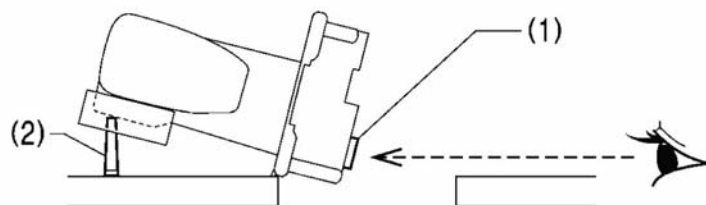
2.加入润滑油，直至油位处于油量观察窗(1)中心基线上方约 2mm 的位置。此时，不要立即将所有的润滑油全部注入。每次注入 10ml 润滑油，同时查看油量观察窗(1)。

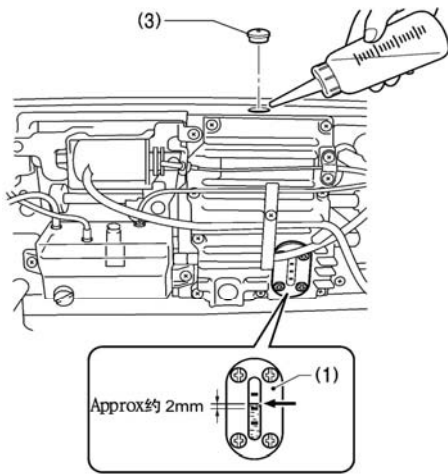
注意：不要在规定的位罝加入过多的润滑油。如果加入过多，将会导致润滑油渗漏。

3.将橡皮塞(3)插入到位。

4.将缝纫机头部返回原位。

注意：橡皮塞(3)上的小孔用于调节气压。更换橡皮塞时请使用指定的替换零件。



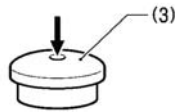


1. Remove the rubber cap (3).
2. Add lubricating oil until the oil level is approximately 2 mm above the center reference line in the oil windows (1). Do not pour all of the lubricating oil in at once at this time. Pour the lubricating oil 10ml at a time while checking the oil windows (1).

Note: Do not pour too much lubricating oil into the specified location. If too much oil is added, oil leaks may result.

3. Insert the rubber cap (3) securely.
4. Return the machine head to its original position.

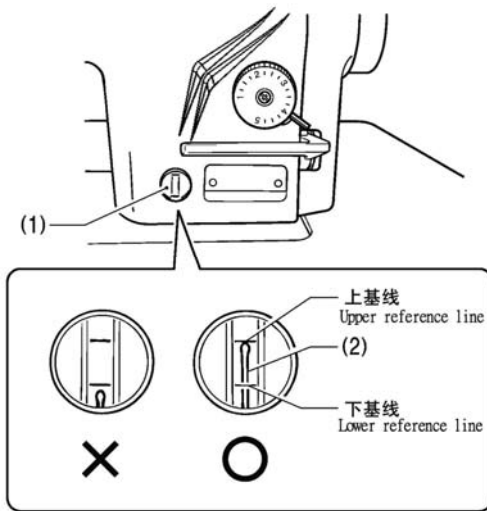
Note: The rubber cap (3) has a hole in it for adjusting the air pressure. when replacing the rubber cap (3) use only the replacement part specified by HIKARI



B 油箱油量/Oil tank oil quantity

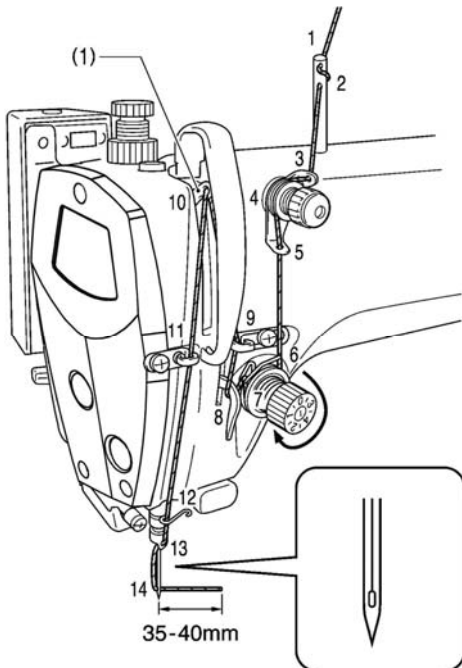
检查油量表视窗(1)，如果油量表(2) 位于基线以下，应该添加润滑油。

Check the oil gauge windows (1), and add more oil if the oil gauge (2) is below the lower reference line.



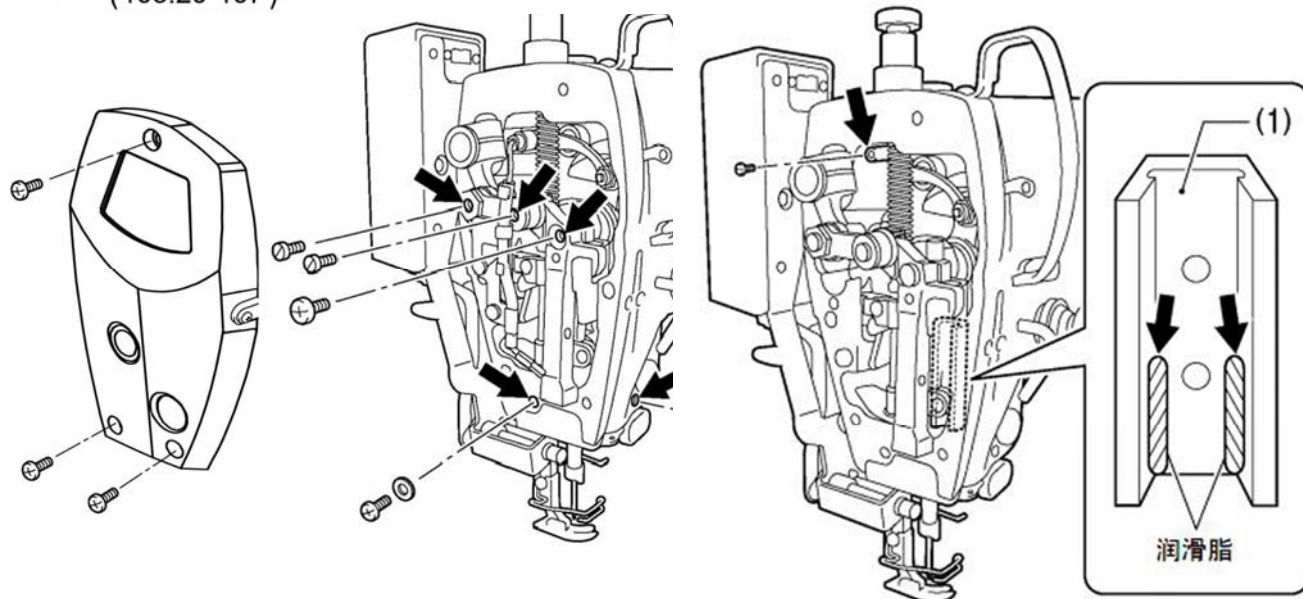
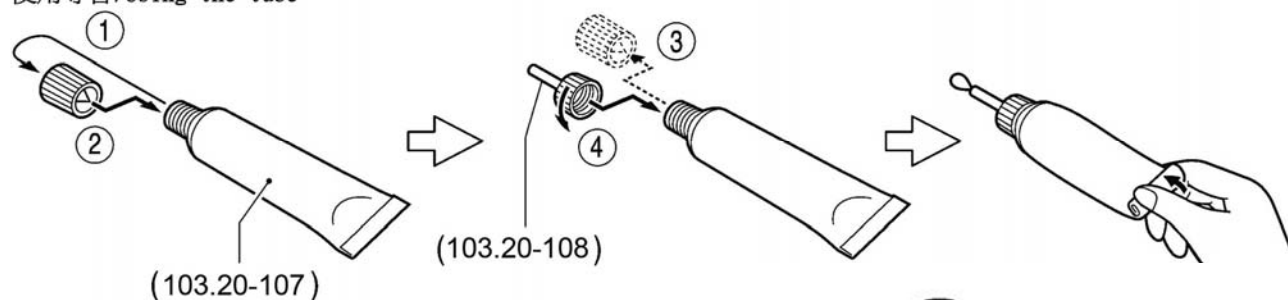
(3)检查/Checking

- 1.如果机针弯曲或针尖断裂。应予以更换。
 - 2.检查面线是否穿引正确。
 - 3.进行试缝。
1. Replace the needle if it is bent or if the tip is broken.
 2. Check that the upper threads have been threaded correctly.
 3. Carry out a test sewing.



7-2 添加润滑脂/Applying grease

使用导管/Using the tube

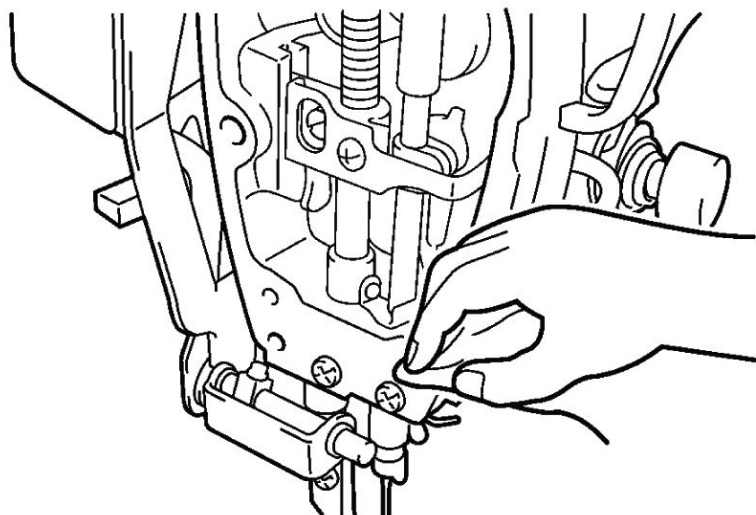


- 1.关闭电源开关。
- 2.拧下螺钉。
- 3.在每个孔里添加润滑脂直至其略微溢出。
- 4.由于随着螺钉的拧紧，润滑脂被推入。
- 5.用手转动手轮，上下移动针杆数次以便润滑脂散布开。
- 6.用布擦去螺钉周围多余的润滑脂。

- 1.回转手轮，上升针杆到看的见角块导向(1)位置为止
- 2.角块导向(1)在如图所示位置处，涂敷润滑油
- 1.Turn the pulley to raise the needle bar to a position where the slide block guide (1) can be seen.
2. Apply grease to the slide block guide (1) in the places shown in the illustration.

- 7.缝纫机每使用三个月，请定期检查润滑脂情况，并作适当添加，确保机器的合理使用。

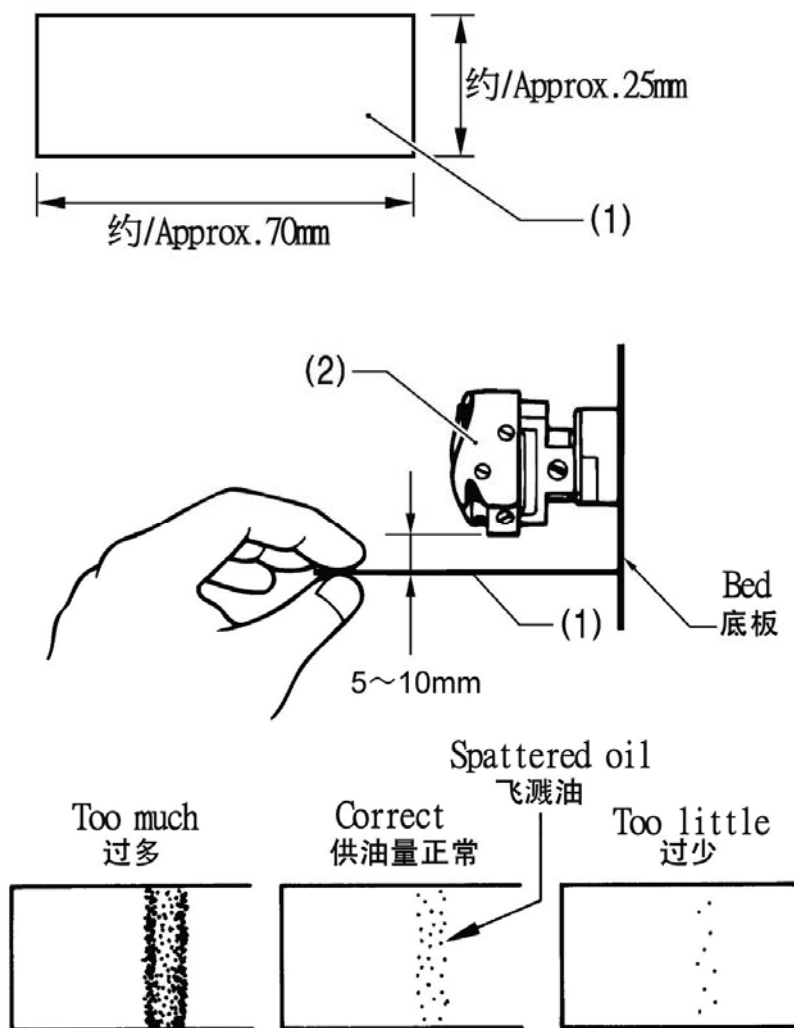
1. Turn off the power switch.
2. Remove the screws.
3. Apply grease to each of the holes until the grease overflows slightly.
4. The grease will be pushed in when the screws are tightened.
5. Turn the machine pulley by hand to move the needle bar up and down several times in order to disperse the grease.
6. Use a cloth to wipe away excess grease from around the screws.
7. please check out the lubrication grease every three months so that we can guarantee the correct usage of the sewing machines.



8. 旋梭供油量的调整/Adjusting the rotary hook lubrication amount

⚠ 在检查旋梭供油量时,手指和油量测试纸不能碰到旋梭和送布机构等运动零部件。否则将导致人员受伤。
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 the oil supplied to the rotary hook, otherwise injury may result.

如更换了旋梭或要变更缝纫速度时,请按下述步骤调整旋梭的供油量。 Using 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.



<供油量的确认/Checking the lubrication amount>

1. 拆去挑线杆至机针上的线。
2. 用抬压脚扳手抬起压脚。
3. 以缝纫机实际缝纫时的转速进行约一分钟的空运转(适度的断续运转)。
4. 将油量测试纸(1)插入旋梭(2)的下面并握住,以缝纫机实际进行缝纫时的转速使缝纫机运转 8 秒钟(对油量测试纸没有什么要求)。
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)所述进行调整。

1. Remove the thread from all points from the thread take up to the needle.
2. Use the lifting lever to lift the presser foot.

3. Run the machine at the normal sewing speed for approximately 1 minute without sewing any material (following the same start/stop pattern as when actually sewing).

4. Place the lubrication amount check sheet (1) underneath the rotary hook (2) and hold it there. Then run the sewing machine at the normal sewing speed for 8 seconds. (Any type of paper can be

used as the lubrication amount check sheet (1)).

5. Check the amount of oil which has spattered onto the sheet.

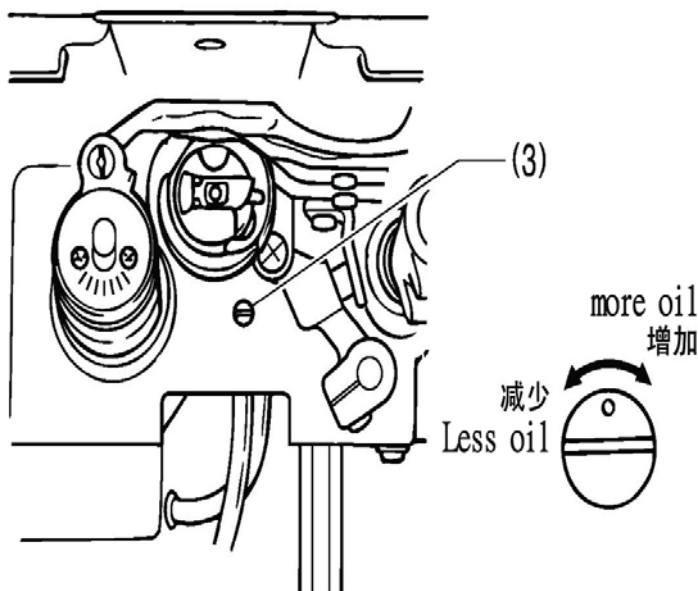
If adjustment is necessary, carry out the following operations in “Adjusting the lubrication amount”.

注意: 如果供油量的检查结果不符合左图所示的状态(飞溅到纸上的油迹呈完整的带状或一点也没有飞溅出来),则应该向右转动油量调节螺钉(3)将其完全拧入,然后再向左转动拧出两圈半,在松开的状态下进行下述的调整作业。

Note: if the lubrication amount of does not match the correct amount shown in the illustration at left (if the amount of spattered oil is too much or none at all) turn the adjusting screw (3) clockwise to fully tighten it, turn it back counterclockwise by 2 1/2 turns, and then carry out the following adjustment.

<供油量的调整/ Adjusting the lubrication amount >

1. 将缝纫机头部倒下。
2. 转动油量调节螺钉(3), 调整供油量。
- * 向右转动油量调节螺钉(3), 供油量增加。
- * 向左转动油量调节螺钉(3), 供油量减少。
3. 参照上述[供油量的确认]所述来检查供油量。
- * 请反复转动油量调节螺钉, 进行调整及供油量的确认, 直到获得适当的供油量为止。
4. 在进行了约 2 小时的缝纫后, 请再次检查供油量。



1. Tilt back the machine head.
2. Turn the adjusting screw (3) to adjust the lubrication amount.
- * If the rotary hook adjusting screw (3) is turned clockwise, the lubrication amount becomes greater.
- * If the rotary hook adjusting screw (3) is turned counterclockwise, the lubrication amount becomes smaller.
3. Check the lubrication amount again according to the procedure given in “Checking the lubrication amount” above.
- * Turn the adjusting screw (3) and check the lubrication amount repeatedly until the lubrication amount is correct.
4. Check the lubrication amount again after the

sewing machine has been used for approximately two hours.

9. 标准调整/Standard adjustments

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

⚠ 发生下列情况下, 请关闭电源并从电源插座上拔下插头。否则误踩下脚踏板时, 缝纫机动作会导致受伤。1. 检查、调整或维修。2. 更换旋梭等易损坏零部件。Turn off the power switch and disconnect the power cord from the wall outlet at following times, otherwise the machine may operate if the treadle is depressed 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.

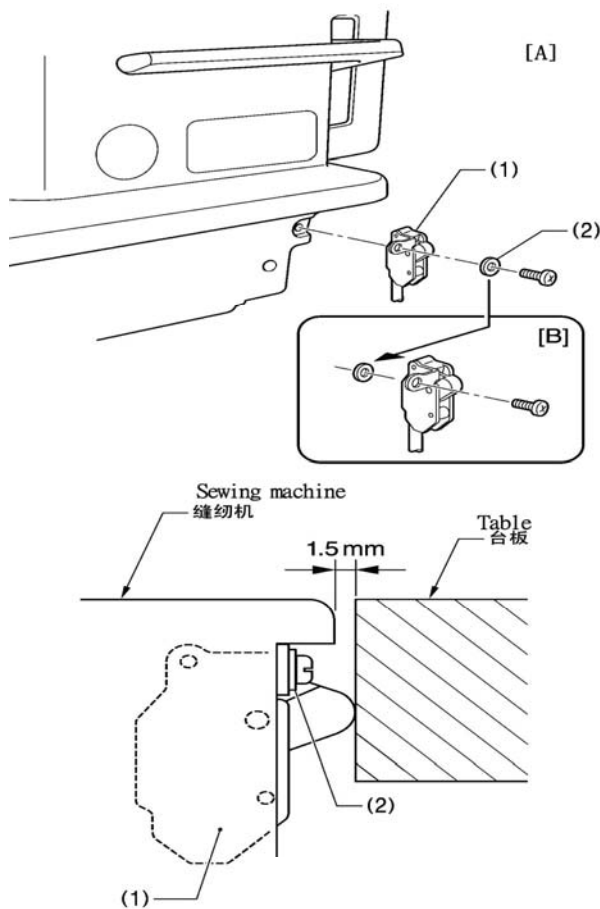
⚠ 在必须接上电源开关进行调整时, 务必十分小心遵守所有的安全注意事项。If the power switch needs to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.

⚠ 缝纫机头倒下或竖起时, 请用双手进行操作。单手操作时因缝纫机的重量万一滑落易导致受伤。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.

⚠ 与电气有关的维修、保养和检查请委托购买商店或电气工作人员进行。Ask your HIKARI dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.

⚠ 取下的安全保护装置, 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。If any safety devices have been removed, be absolutely sure to reinstall them to their original positions and check that they operate correctly before using the machine.

9-1 安全开关的位置/Adjusting the safety switch position



安全开关(1)的位置通常如图[A]所示。但是, 根据台板的加工尺寸, 缝纫机座与台板孔的间隙过大, 安全开关的动作将会不正常。

The safety switch (1) installed as shown in figure [A]. However, if the processing method used for the table leaves too much space between the machine head and the table hole, it may adversely affect the operation of the safety switch (1).

<调整方法/Adjustment method>

缝纫机座与台板孔的间距的标准尺寸为 1.5mm。间距在 3.5mm 以上时, 如图[B]所示将垫圈(2)靠近缝纫机座一侧来安装安全开关(1)。

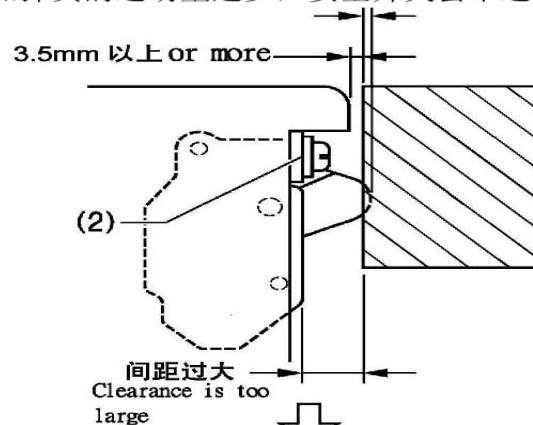
*如位置仍不能调整好时, 请在追加相同的垫圈。

The standard amount of clearance between the machine head and the table hole is 1.5mm. if the clearance is 3.5 mm or more, install the safety switch (1) so that the washer (2) is on the machine head side as shown in figure [B].

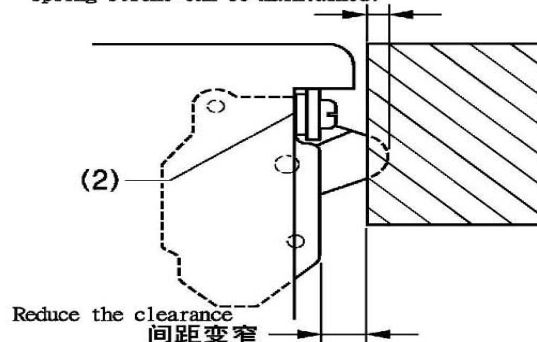
*If the position cannot be satisfactorily adjusted in this way, add more washers of the same thickness.

<安全开关的运转/Safety switch operation>

如弹簧的运动量过少, 安全开关会不运转



将安全开关的位置错开, 以确保必要的运动/By changing the position of the safety switch, the required spring stroke can be maintained.



9-2 挑线弹簧/Adjusting the thread take up spring

<挑线弹簧的位置/Thread take up spring position>

标准的挑线弹簧(1)的位置是在压脚(2)放下的状态下，以位于线导向(3)的上方 6~8mm，[SH 规格 4~6mm]处

1.放下压脚(2)。

2.松开螺钉(4)。

3.调整夹线器杆架(5)的旋转位置。

4.拧紧螺钉(4)。

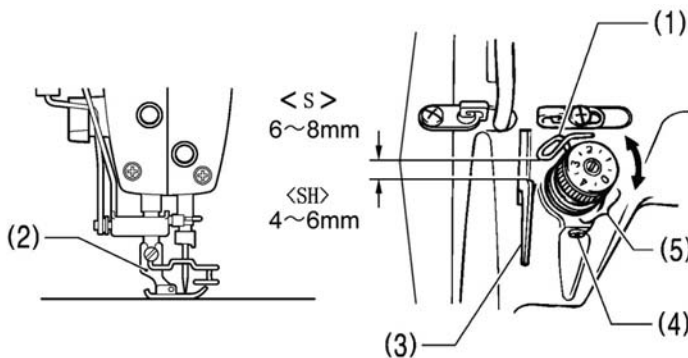
The standard position of the thread take up spring (1) is 6~8mm[4~6mm for the SH specifications] above the surface of the thread guide (3) when the presser foot (2) is lowered.

1. Lower the presser foot (2).

2. Loosen the set screws (4).

3. Turn the thread tension bracket (5) to adjust the spring position.

4. Securely tighten the set screws.



<挑线弹簧的强度/Thread take up spring tension>

根据规格，挑线弹簧(1)的标准强度为下列所示。The standard tension of the thread take up spring (1) varies in accordance with the machine specifications as shown in the table.

S 规格/specifications	0.25~0.25N
SH 规格/specifications	0.30~0.50N

1.在夹线器杆架(5)的稍微上方处，用手指拿住面线使其不要被拉出。

2.向下拉面线，直到挑线弹簧(1)与线导向(3)的底面高度一致时，然后测量挑线弹簧(1)的强度。

3.将起子插入夹线螺杆(6)的槽中，旋转起子可调整挑线弹簧(1)的强度。

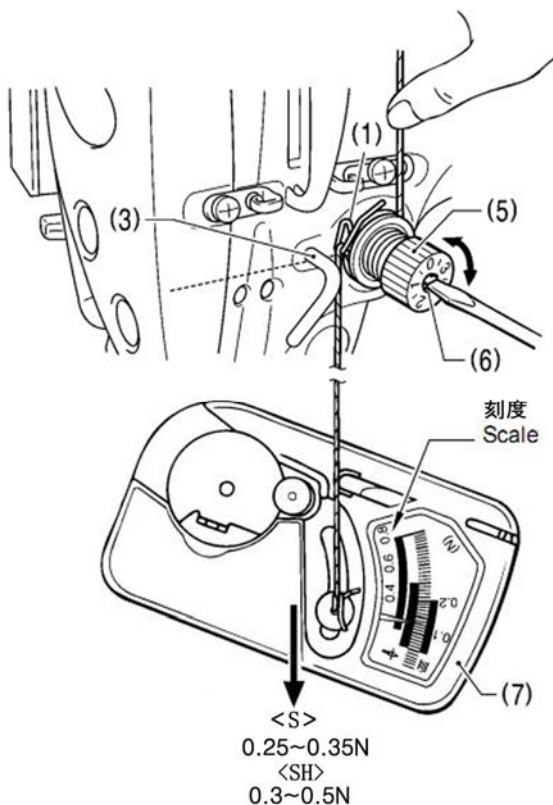
[参考] 若使用张力计(7)(另行购买)来测量张力时，应该从面线[红色线侧处]的刻度读起。

1. Push the needle thread with your finger until it is slightly higher than the thread tension bracket (5) and so that the upper thread is not pulled out.

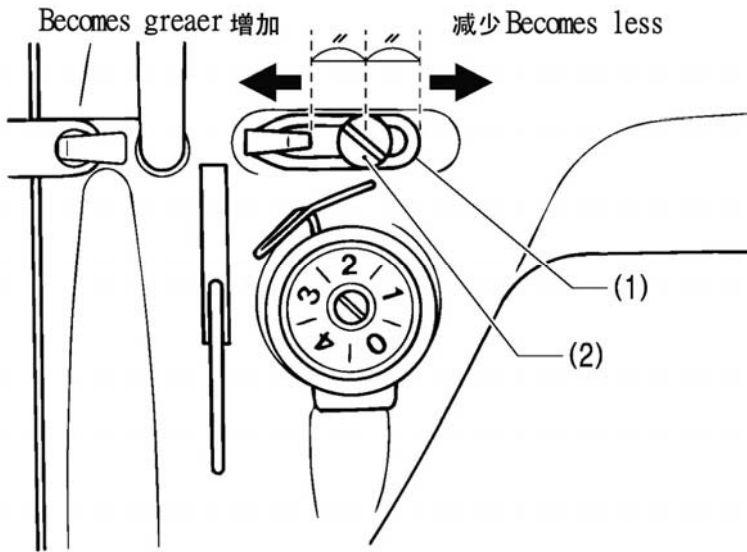
2. Pull the upper thread down until the thread take up spring (1) is at the same height as the base of the thread guide (3), and then measure the tension of the thread take up spring (1).

3. Insert a screwdriver into the slot of the tension stud (6), and turn the screwdriver to adjust the tension of the thread take up spring (1).

[Note:] If using the tension gauge (7) (sold separately) to measure the tension, take the reading from the scale on the side of the red line.



9-3 机壳的线导向 R /Adjusting arm thread guide R



机壳的线导向 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。

*松开螺钉(2),移动机壳的线导向 R(1)进行位置的调节。

1.当缝纫厚料时,向左移动机壳的线导向 R(1)。(挑线量增加)

2.当缝纫薄料时,向右移动机壳的线导向 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).

1. When sewing thick material, move arm thread guide R (1) to the left. (The thread take up amount will become greater)

2. When sewing thin material, move arm thread guide R (1) to the right. (The thread take up amount will become less)

9-4 压脚高度/Adjusting the presser foot height

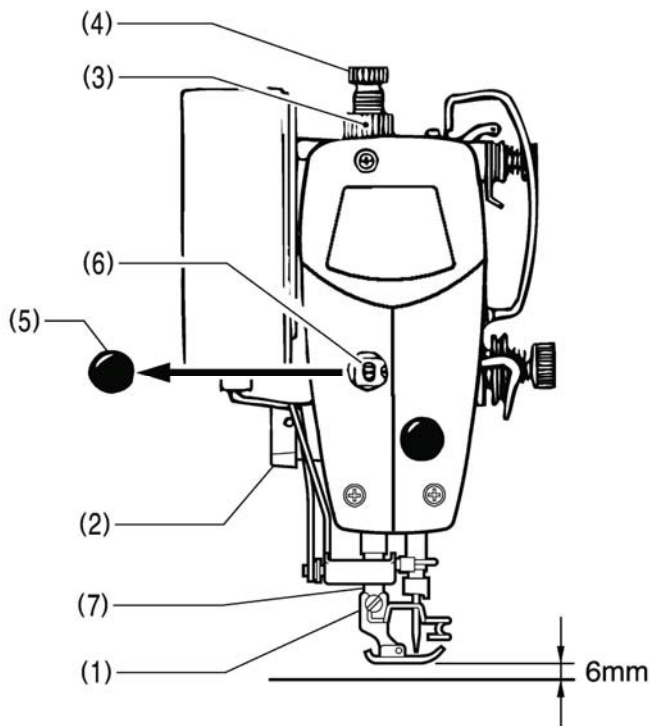
使用抬压脚扳手(2)抬高压脚(1)时,压脚的标准高度是 6mm。

1.旋松螺母(3)和压脚调节螺栓(4),对压脚不施加压力。

2.使用抬压脚扳手(2)来抬高压脚(1)。

3.拆下面板上的橡皮塞(5)。

4.旋松螺栓(6),上下移动压杆(7),调整压脚(1)的高度为 6mm。



5.拧紧螺栓(6)。

6.安装上橡皮塞(5)。

7.通过压脚调节螺栓(4)来调整压脚压力,拧紧螺母(3)。

The standard height of the presser foot (1) is 6mm when the presser foot (1) is raised by means of the lifting lever (2).

1. Loosen the nut (3) of the adjustment screw (4), and then turn the adjustment screw (4) so that there is no pressure applied to the presser foot.

2. Raise the lifting lever (2). The presser foot (1) will also rise.

3. Remove the oil cap (5).

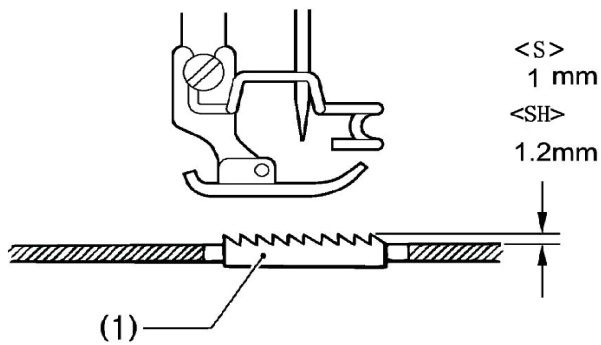
4. Loosen the bolt (6) and then move the presser bar (7) up or down until the presser foot (1) is at the standard height of 6 mm.

5. Tighten the bolt (6).

6. Replace the oil cap (5).

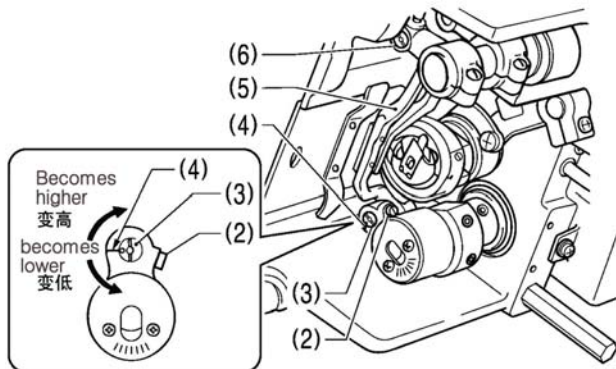
7. Adjust the presser foot pressure using the adjustment screw (4), and then tighten the nut (3).

9-5 送布牙的高度/Adjusting of the feed dog height

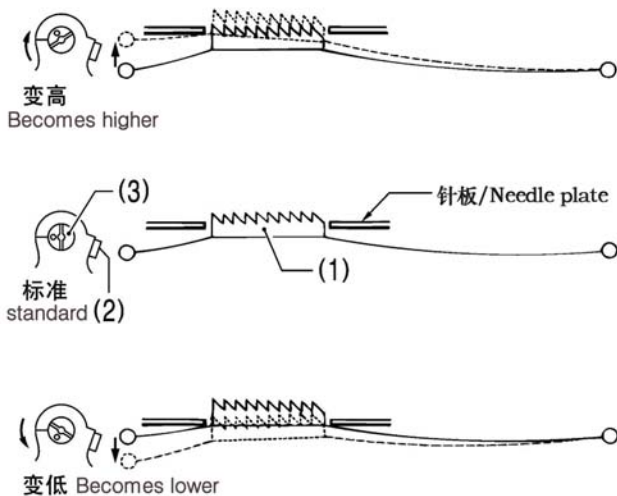


将送布牙(1)移动针板上方最高处时, 此时的标准高度对 S 规格为 1mm, 对 SH 规格为 1.2mm。

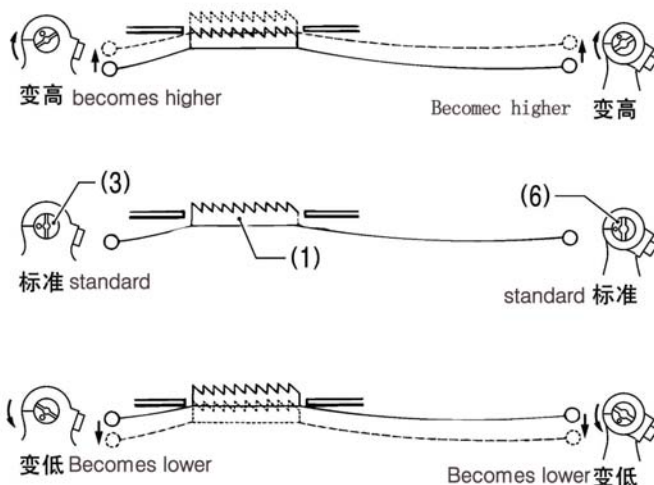
The standard height of the dog (1) when it is at its maximum height above the top of the needle plate is 1 mm for S specifications, and 1.2 mm for SH specifications.



[A]



[B]



1.转动缝纫机手轮, 将送布牙(1)移到针板上方最高处。

2.放倒缝纫机。

3.旋松螺钉(2)。

4.将上下送布轴(3)根据基线(4)在 90° 的范围内旋转, 来上下调整送布台(5)。 (图[A]所示)

5.拧紧螺钉(2)。

*如发现送布牙(1)有倾斜现象时, 按上述操作调整旋转送布台短轴(6)。 (图[B]所示)

(操作方法参考下一页)

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).

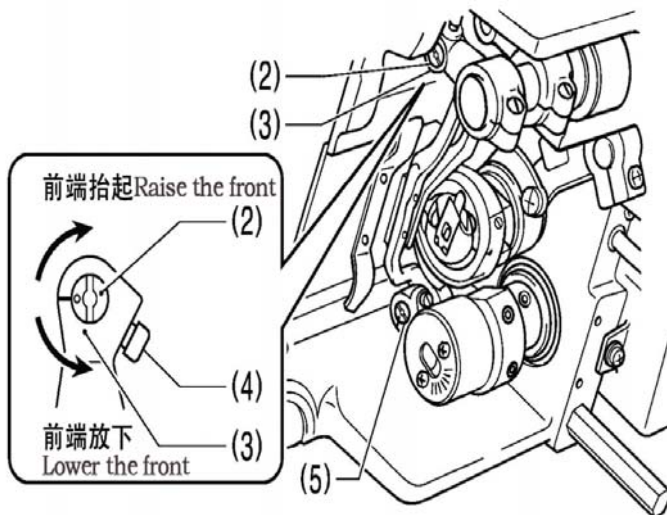
4. Turn the feed lifting rock bracket stud (3) within a range of 90° from the reference line (4) to adjust the vertical height of the feed bar (5). (Fig. [A])

5 Tighten the screw (2).

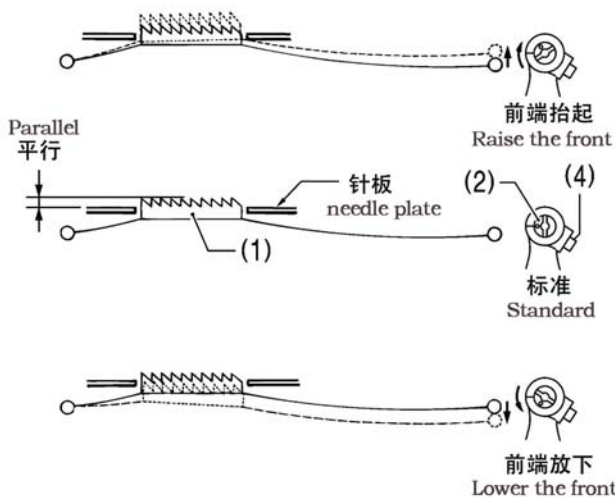
* If you are worried about the angle of the feed dog (1), turn the shaft (6) while carrying out the above adjustment. (Fig. [B])

(Refer to 9-6. "Adjusting the feed dog angle" on the next page the for details of this operation.)

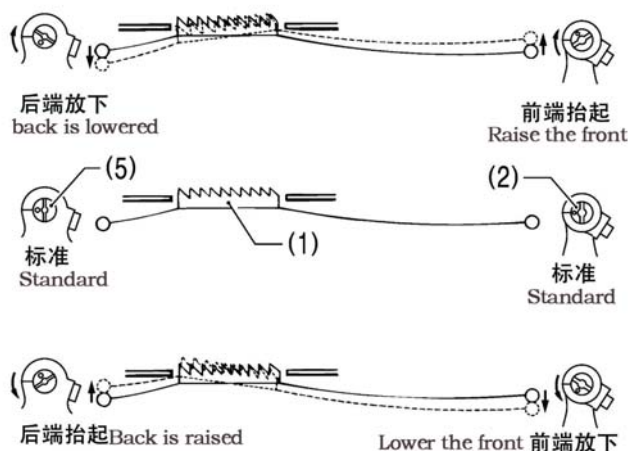
9-6 送布牙的倾斜/ Adjusting the feed dog angle



[C]



[D]



送布牙(1)位于针板最高处时的标准倾斜是送布台短轴(2)上的○印(或是V型印)与水平送布台托架(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)移到针板上方最高处。

2.放到缝纫机。

3.旋松螺钉(4)。[2个]

4.根据标准位置,90°的范围内按箭头方向调整送布台短轴(2)。(图[C]所示)

*为了防止起皱,降低送布牙(1)的前端。

*为了防止重叠缝纫时不料不一致[缝线不合],抬高送布牙(1)的前端。

5.拧紧螺钉(4)。[2个]

*如送布牙(1)仍然倾斜,按上述操作调整旋转上下送布台轴(5)。(图[D]所示)

(操作方法参考上一页)

*调整送布牙(1)的倾斜后,送布牙的高度也会改变,因此请再一次调整送布牙(1)的高度。

The standard angle for the feed dog (1) when it is at its highest position above the needle plate is when the “○” mark (or V groove) 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. Turn the machine pulley to move the feed dog (1) to its highest position above the needle plate.

2. Tilt back the machine head.

3. Loosen the set screws (4)[2 pcs].

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).

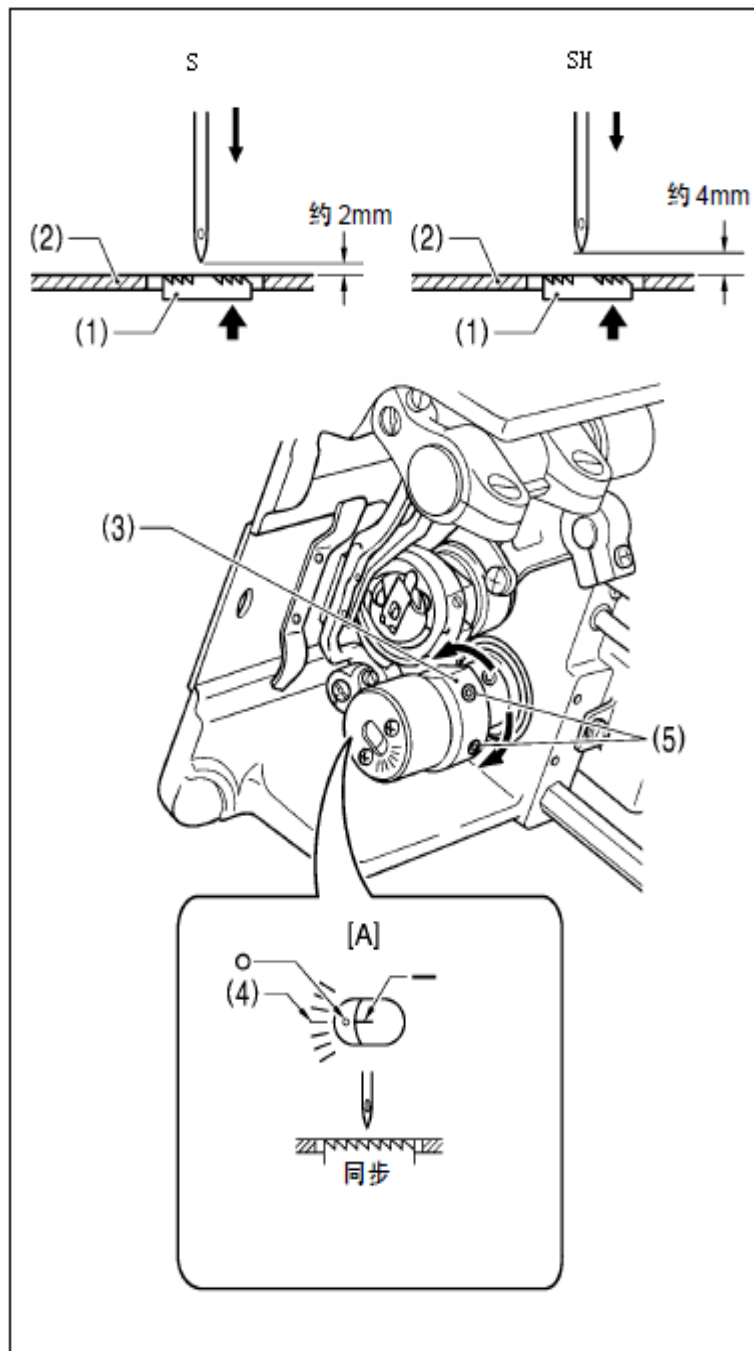
5. Securely tighten the set screws (4).

*If you would like to tilt the feed dog (1) further, turn the feed lifting rock bracket stud (5) while carrying out the above adjustment.(Fig.[D])

(Refer to 9-6. “Adjusting the feed dog height” on the previous page for details of this operation.)

*The height of the feed dog (1) will change after the angle has been adjusted, so it will be necessary to readjust the height of the feed dog (1).

9-7 机针和送布的同步/Adjusting the needle and feed mechanism timing



向逆时针方向回转手轮，将送布牙(1)从最低位置上升到与针板(2)表面一致时，机针的针尖呈下述状态为标准。(此时，上下偏心轮(3)上的刻度标记(4)的中央的(O记号)与下轴的(一)标记对齐。图[A]所示)

<S>送布牙(1)的上面和针板(2)的表面对齐时，机针的针尖和针板(2)表面的间隙约为2mm。

<SH>送布牙(1)的上面和针板(2)的表面对齐时，机针的针尖和针板(2)表面的间隙约为4mm。

1.送布刻度旋钮旋到最大处。

2.放倒缝纫机。

3.将两个螺钉(5)旋松，稍微旋转来调整上下偏心轮(3)。(旋转上下偏心轮(3)上的刻度标记与下轴的(一)标记对齐来作为基准)。

4.调整完后，拧紧螺钉(5)。

Turn the hand wheel in the anticlockwise direction, rise the feed dog(1) from the lowest position to the same level of the needle plate(2), when the point of the needle shows like below, take this as standard.(now, the middle scale(sign O) on the up-down eccentric wheel (3) aligns with mark of the lower shaft. Shows like graphics(A))

<S>when the top of the feed dog and the surface of the needle plate are at the same level. The interval between the point of the needle and the surface of the needle plate is about 2mm.

<SH> when the top of the feed dog and the surface of the needle plate are at the same level. The interval between the point of the needle and the surface of the needle plate is about 4mm.

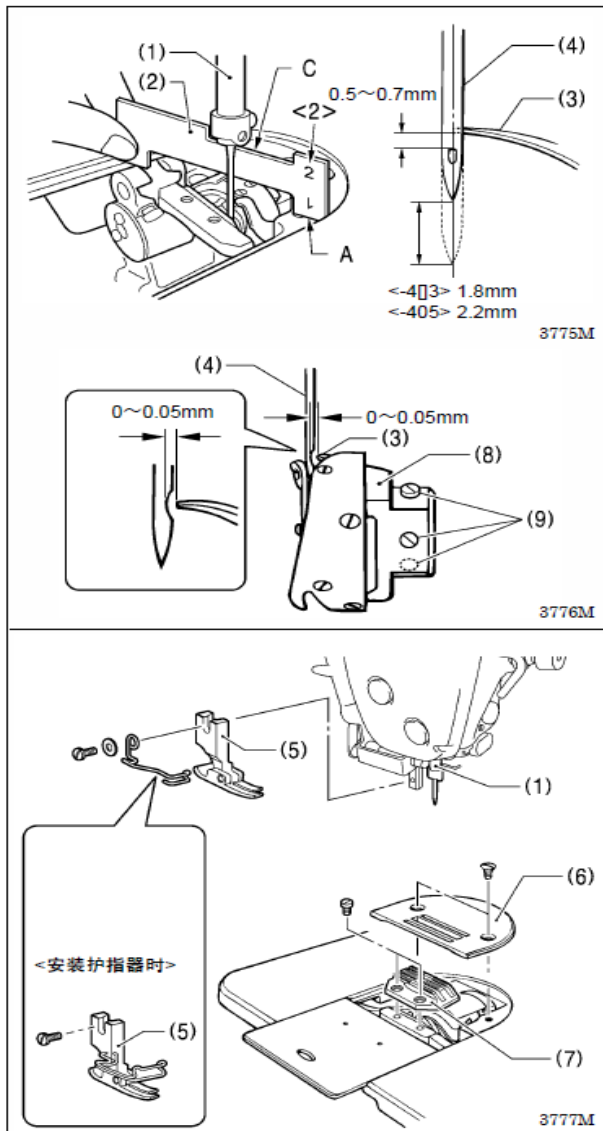
1. Turn the knob which refer to the sending cloth function to the biggest position

2. Upend the machine

3. Release the screw (5), rotate it slightly to adjust the eccentric wheel (3). (Adjust the scale of the eccentric wheel to align with mark of the lower shaft. take this as standard.)

4. After adjusting, tighten up the screw(5).

9-8 机针和旋梭的同步/Adjusting the needle and rotary hook timing



向逆时针方向回转缝纫机手轮，当针杆（1）从最低位置升到 1.8mm(SH 规格为 2.2mm)处时，如图所示，针板安装面 A 到针杆（1）的下端面为止的高度和使用附件中的相遇工具夹（2）的<2>侧的 C 面高度一样高时，旋梭尖(3)与机针(4)的中心应一致。(此时，针眼上缘与旋梭尖之间的间隙为 0.5~0.7mm)。

1. 拆下压脚（5）、针板（6）、送布牙（7）。

2. 送布刻度旋钮旋到如下所述的位置：

<S>…送布刻度旋钮旋到 0 的位置

<SH>…送布刻度旋钮旋到 3 的位置

3. 松开固定旋梭（8）用的螺钉（9）[3 个]中的 2 个螺钉。

4. 回转缝纫机手轮，针杆（1）从最下位置上升到针板安装面 A 到针杆（1）的下端面为止的高度和使用附件中的相遇工具夹（2）的<2>侧的 C 面高度一样高为止。

5. 松开螺钉(9)[3 个]中的剩下的 1 个螺钉，使旋梭尖(3)与机针（4）的中心一致。此时，旋梭尖(3)与机针(4)之间的间隙为 0~0.05mm。

6. 将螺钉(9)[3 个]用力拧紧。

7. 安装上送布牙（7）、针板（6）、压脚（5）。

Roll the handwheel in counter-clockwise, when the needle bar,(1)arise to 1.8mm(SH type is 2.2mm),be shown as the figure, while the height between the needle plate fitting surface A and the needle bar bottom surface ,and the height for the C side of the<2>side of the the encounter instrument clamp are the same, the centre of rotary shuttle point(3)and the needle(4) coincide. (now, the clearance between the eyed

coboundary and the rotary point is 0.5-0.7mm).

1. pull down presser foot(5)、needle plate(6)、feeddog(7).

2. feed scale knob turn to the position as follow:

<S> feed scale knob turn to "0"

<SH> feed scale knob turn to "3"

3. loosen the 2 pieces among the 3 pieces of bolts which fix the rotary(8).

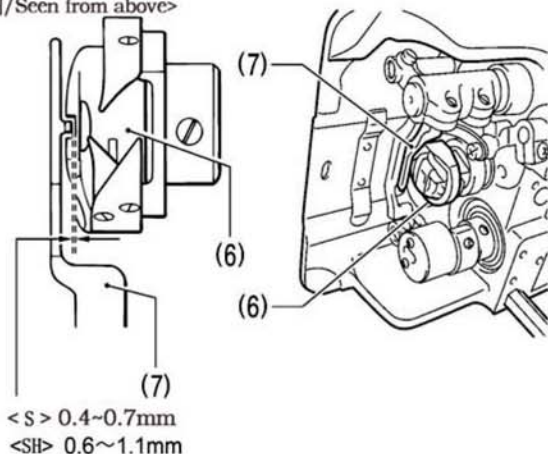
4. Roll the handwheel in counter-clockwise, until the height between the needle plate fitting surface A and the needle bar bottom surface ,and the height for the C side of the<2>side of the the encounter instrument clamp to be the same.

5. loosen the left one bolt of the bolt(9) [3pieces],make the cetre of the rotary point and needle be coincident.now, the clearance of the rotary point(3) and needle(4) is 0~0.05mm.

6. screw down the bolt(9)[3pieces]

7. install feeddog(7)、needle plate(6)、presser foot(5).

<俯视图/Seen from above>



<旋梭和旋梭定位钩之间的间隙确认 /Checking the clearance between the rotary hook and bobbin case holder position bracket>

旋梭和旋梭定位钩之间的间隙，应确保所使用的线能够顺利通过。

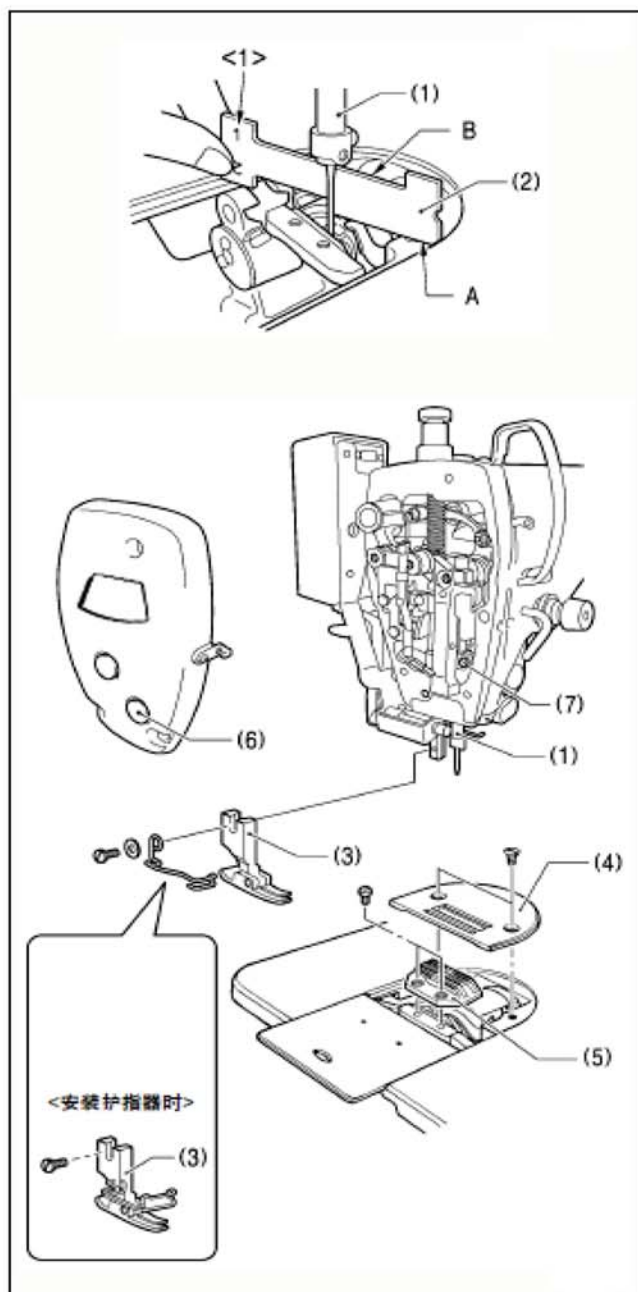
<S>规格为 0.4~0.7mm

<SH>规格为 0.6~1.1mm

Checking that the clearance between the rotary hook (6) and the bobbin case holder position bracket (7) is enough to allow the thread being used to pass through smoothly.

The clearance should be 0.4~0.7 mm for M models, and 0.6~1.1 mm for H models.

9-9 针杆的高度/Adjusting the needle bar height



当针杆到达最下位置时，如图所示，从针板安装面 A 到针杆 (1) 的下端面为止，其高度和使用附件中的相遇工具夹 (2) 的<1>侧的 B 面高度一样高。

1. 拆下压脚 (3)、针板 (4)、送布牙 (5)。

2. 回转缝纫机手轮，使针杆 (1) 降到最低位置。

3. 拆下面板上的橡皮塞 (6)。

4. 松开螺栓 (7)。

5. 从针板安装面 A 到针杆 (1) 的下端面为止，使用附件中的相遇工具夹 (2) 的<1>侧的 B 面，上下调整针杆 (1) 的高度，使其一样高。

6. 拧紧螺钉 (7)。

7. 装上橡皮塞 (6)。

8. 安装上送布牙 (5)、针板 (4)、压脚 (3)。

When the needle bar reach the lowest point, showed in the figure, from needle plate mounting surface A to the bottom of needle bar (1), which height is the same as B surface of (1) side of tool folder (2) used as accessory.

1. Take off the presser foot (3), needle plate (4), and feed dog (5).

2. Rotating sewing machine hand wheel to make the needle bar (1) reach the lowest position.

3. Remove the rubber plug on the front shell (6)

4. Loosen the screws (7).

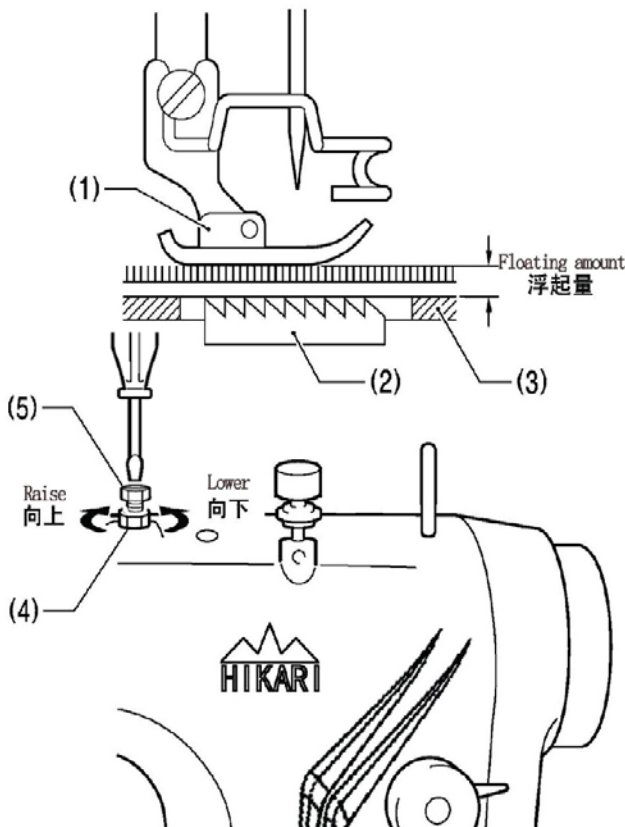
5. From the needle plate mounting surface A to the bottom of needle bar (1), use the B surface of (1) side of tool folder (2) as a standard to adjust the needle bar (1) height.

6. Tighten the screws.(7)

7. Fitted with rubber plug.(6)

8. Fitted with feed dog (5), needle plate (4), and presser foot (3).

9-10 压脚的浮起调整(微量抬压脚)/Adjusting the presser floating amount (minute lifting amount)



遇到伸缩布料和起毛布料等时,可根据材料将压脚(1)的浮起量进行调整。

1.用手转动缝纫机手轮,将送布牙(2)下降到针板(3)下面。

2.使用抬压脚扳手将压脚(1)放下。

3.松开螺母(4)。

4.使用起子回转调节螺钉(5),来调节浮起量。

*使压脚(1)上升时,将调节螺钉(5)向右旋转。

*使压脚(1)下降时,将调节螺钉(5)向左旋转。

5.拧紧螺母(4)。

*调整后,要根据实际的布料进行缝制,确认其浮起量。

When sewing stretch machine and materials and materials with long pile, you can make minute adjustments to the floating amount for the presser foot (1) in accordance with the material.

1. Turn the sewing machine pulley by hand to move the feed dog (2) below the needle plate (3).

2. Use the lifting lever to lower the presser foot (1).

3. Loosen the nut (4).

4. Use a hexagon wrench to turn the adjusting screw (5) to adjust the floating amount.

*To raise the presser foot (1), turn the adjusting screws (5) clockwise.

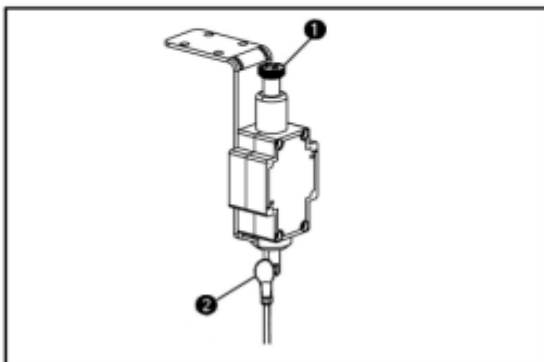
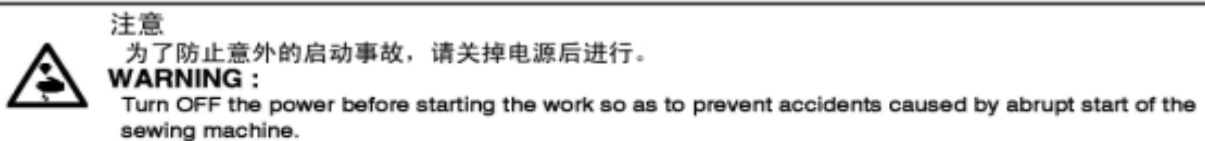
*To lower the presser foot (1), turn the adjusting screws (5) counterclockwise.

5. Tighten the nut (4).

*After making the adjustment, sew a piece of material to check the floating amount.

9-11 踏板操作/Adjusting the treadle

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



(1) 踏板回踩力的调整

1) 用踏板回踩压力调节弹簧①可以调整。

2) 拧紧调节螺丝则压力变大。

3) 拧松调节螺丝则压力变小。

(2) 踏板踩踏行程的调整

1) 把连杆②插到右侧的孔里之后行程变大。

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

1) This pressure can be adjusted using regulator screw ①.

2) The pressure increases as you turn the regulator screw in.

3) The pressure decreases as you turn the screw out.

(2) Adjusting the pedal stroke

1) The pedal stroke increases when you insert connecting rod ② into the right hole.

踏板的调整 / ADJUSTMENT OF THE PEDAL

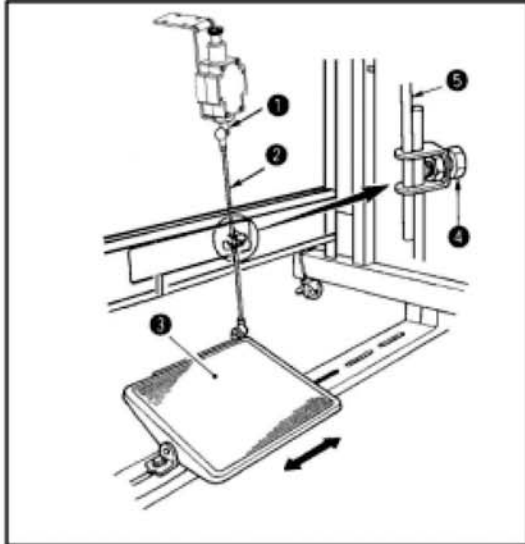


注意

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.

**(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角度。
- 2) 拧松调节螺丝④，拉出插入链接杆⑤进行调整。

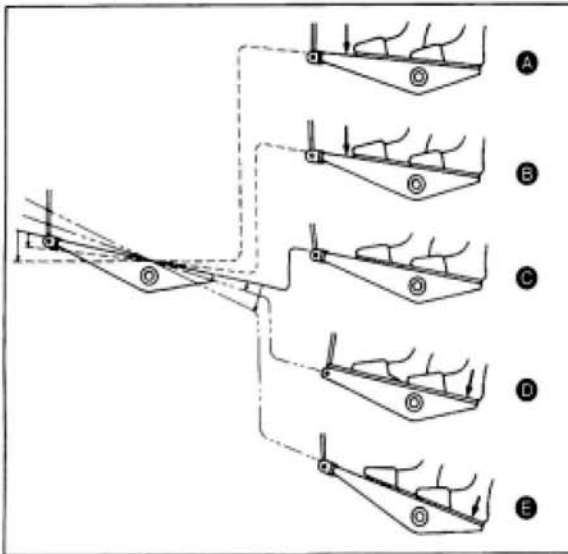
(1) Installing the connecting rod

- 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.

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③。
 - 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纫机停止⑤。(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⑥。
- * 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。向后轻轻地踩踏板为压脚提升动作⑦, 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. ③
 - 2) The machine runs at high sewing speed when you further depress the front part of the pedal. ④
(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. ⑤
 - 4) The machine trims threads when you fully depress the back part of the pedal. ⑥
- * 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 ⑦, and if you further depress the back part, the thread trimmer is actuated.

10. 故障检修/Trouble shooting

*请在要求维修或服务前，先检查以下各点。

*如果以下方法仍然不能解决问题，关闭电源开关，向受过训练的技术人员或经销商咨询。

*Please check the following points before calling for repairs or service.

*If the following remedies do not fix the problem, turn off the power switch and consult a qualified technician or the place of purchase.



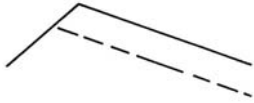
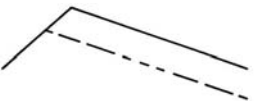
打开控制箱盖时，先关闭电源开关并将电源插头从插座上拔下，至少 5 分钟后，再打开控制箱盖，触摸带有高电压的区域将会造成人员受伤。Wait at least 5 minutes after turning off the power switch and disconnect the power cord from the wall outlet before opening the face plate of the control box. Touching areas where high voltages are present can result in severe injury.

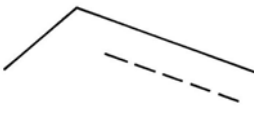
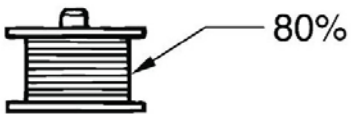


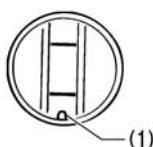
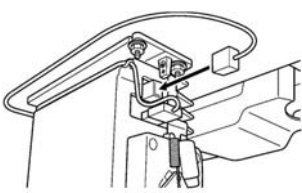
在进行故障查寻之前，请先关闭电源开关并断开电源线。否则如果误踩下脚踏板时，缝纫机动作会导致人员受伤。Turn off the power switch and disconnect the power cord before carrying out troubleshooting. The machine may operate if the treadle is depressed by mistake, which could result in injury.

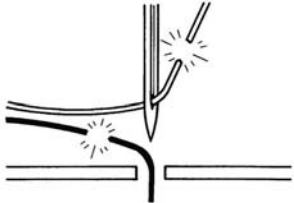
在参照页栏目中带有“*”记号的只能由合格技术人员进行检查/Items with a “*” in the “page” column should only be checked by a qualified technician.

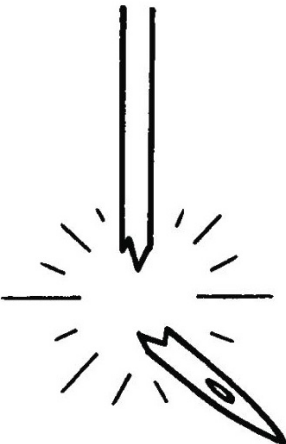
现象 problem	检查 Check	解决方法 Fix method	参照页 Page
1 面线不够紧密 Upper thread is not tight 	1.面线张力是否过小，或底线张力是否过大？ 1. Is the upper thread tension too weak, or is the lower thread tension too strong?	1.调整面线张力或底线张力 1. Adjust the upper thread tension or lower thread tension.	15
2 底线不够紧密 Lower thread is not tight 	1.底线张力是否过小，或面线张力是否过大？ 1. Is the lower thread tension too weak, or is the upper thread tension too strong?	1.调整面线张力或底线张力。 1. Adjust the upper thread tension or lower thread tension.	15
3 布料下出现环结等不良 Loops appear in seam 	1.线路是否不够光滑？ 2.梭芯是否旋转流畅？ 1. Is the thread path not smooth enough? 2. Is the bobbin not turning smoothly?	1.用细粒锉刀或砂纸将线路打磨光滑。 2.拉出底线检查机线张力是否松弛，或更换梭芯或梭芯套。 1. Use a file with a fine grain or sandpaper to polish smooth the thread strong? 2. pull out the lower thread to check that there is no slackness in the thread tension, or replace the bobbin or bobbin case.	

现象 problem		检查 Check	解决方法 Fix method	参照页 Page
4	缝纫时出现跳针 Skipped stitches occur while sewing	1.针尖是否弯曲? 针尖是否钝化? 2.机针是否安装正确? 3.缝纫机线是否穿引正确/ 4.压脚压力是否过小? 5.机针是否太细? 6.压脚是否太高? 7.挑线簧是否太弱? 8.机针和旋梭的同步是否正合适?	1.如果针尖弯曲或断裂, 应予以更换。 2.如果机针安装不正确, 应正确加以安装。 3.如果穿引不正确, 应正确穿引机线。 4.调整压脚压力。 5.更换大一号的机针。 6.调整压脚高度。 7.调整挑线簧的张力。 8.调整针杆的高度。 调整机针与旋梭之间的间隙。	9 11 16 27 26 31
		1. Is the needle tip bent? Is the needle tip blunt? 2. Is the needle properly installed? 3. Is the machine properly threaded? 4. Is the presser foot pressure too weak? 5. Is the needle too thin? 6. Is the presser foot too high? 7. Is the thread take up spring too weak? 8. Is the needle and rotary hook timing correct?	1. If the needle tip is bent or broken, replace the needle. 2. If it is incorrect, install the needle correctly. 3. If it is incorrect, thread the thread correctly. 4. Adjust the presser foot pressure. 5. Replace the needle with a needle that is one rank thicker. 6. Adjust the height of the presser foot. 7. Adjust the tension of the thread take up spring. 8. Adjust the height of the needle bar. Adjust the clearance between the needle and the tip of the rotary hook.	
	线缝不平整 Uneven seam	1.压脚压力是否过小? 2.送布牙高度是否太低? 3.梭芯是否有划痕?	1.调整压脚压力。 2.调整送布牙高度。 3.如果梭芯受损, 用油磨石打磨光滑, 或予以更换。	16 28
		1. Is the presser foot pressure too weak? 2. Is the feed dog too low? 3. Is the bobbin scratched?	1. Adjust the presser foot pressure. 2. Adjust the feed dog height. 3. If the bobbin is damaged, smooth it with an oiled grindstone or replace it.	
6	剪线不正确(面线和底线均未剪断)Incorrect thread trimming (Upper and threads are both not being trimmed)	1.定刀或动刀的刀部是否受损或磨损? 1. Is the fixed knife or moveable knife damaged or worn?	1.更换定刀或动刀。 1. Replace the fixed knife or the movable knife.	
7	剪线不正确(面线或底线未被剪断)Incorrect thread trimming (Upper threads or lower thread is not being trimmed)	1.机针是否安装正确? 2.定刀或动刀是否钝化? 1. Is the needle properly installed? 2. Is the fixed knife or moveable knife blunt?	1.如果机针安装不正确, 应正确加以安装。 2.更换定刀或动刀。 1. If it is incorrect, install the needle correctly. 2. Replace the fixed knife or the movable knife.	

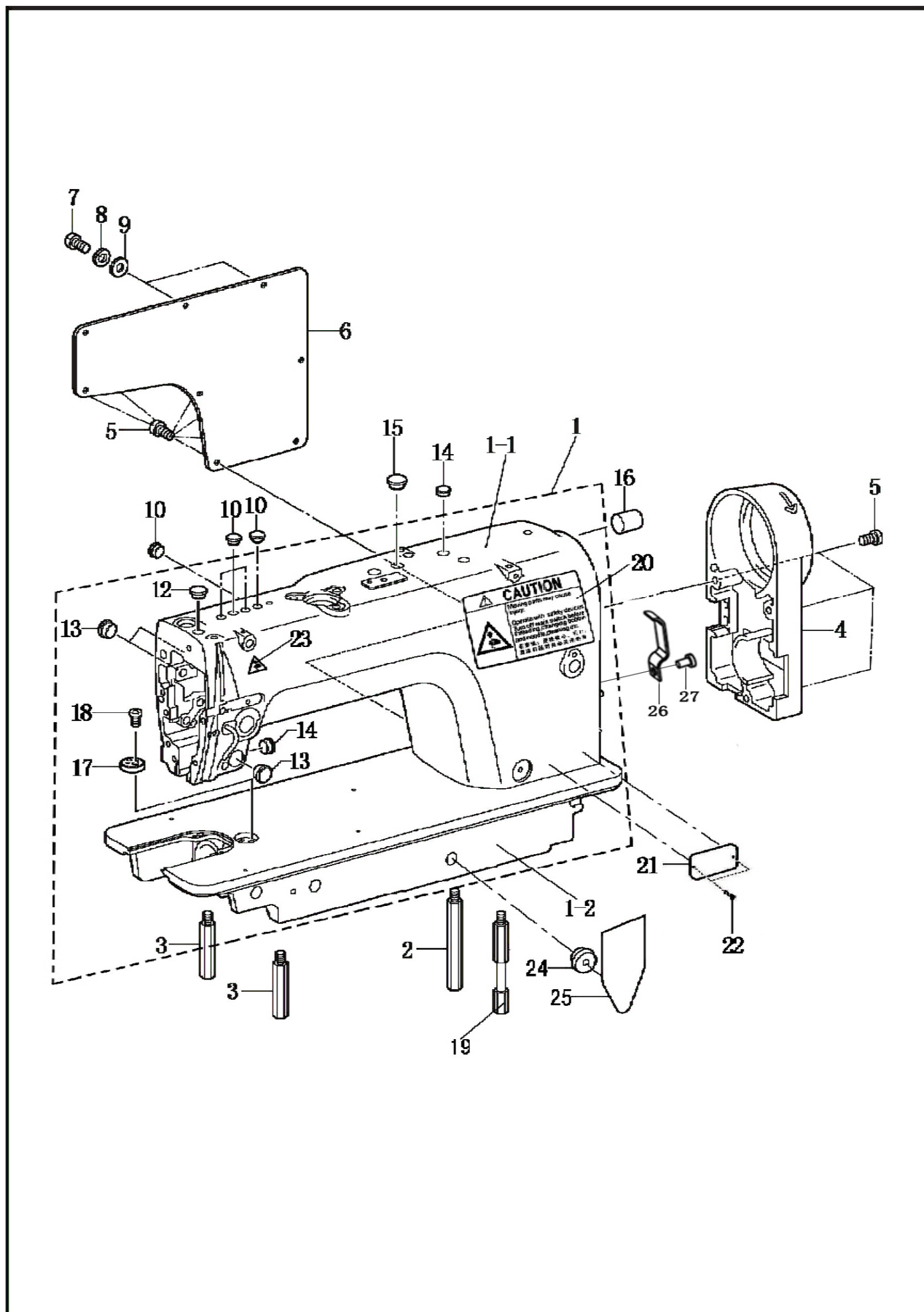
	现象 problem	检查 Check	解决方法 Fix method	参照页 Page
8	缝纫开始时出现跳针 缝纫开始时出现脱线 Skipped stitches at sewing start Thread unraveling at sewing start 	1.挑线簧压力是否过大? 2.挑线簧工作范围是否过大? 3.剪线后,面线残余留量是否过短? 4.机线是否剪切整齐? 5.机针是否过粗? 6.剪线后,梭芯套拖出的底线是否过短? 7.缝纫开始时,缝纫速度是否过快? 8.针上停止位置是否过高? 1. Is the thread take-up spring tension too strong? 2. Is the thread take-up spring operating range too large? 3. Are the trailing lengths of the upper threads too short after thread trimming? 4. Are the threads not being trimmed cleanly? 5. Is the needle too wide? 6. Is the length of thread trailing out from the bobbin case after thread trimming too short? 7. Is the sewing speed too fast at the sewing start? 8. Is the needle up stop position too high?	1.减小挑线簧张力。 2.降低挑线簧位置。 3.调整张力。 4.将定刀磨快,或视需要更换定刀或动刀。 5.使用比现有机针小一号的机针。 6.如果旋梭发生空转,更换梭芯套中的旋梭空转防止簧。 7.使用慢启动功能。 8.请调整针上停止位置。 1. Reduce the tension of the thread take up spring. 2. Lower the position of the thread take up spring. 3. Adjust the pretension. 4. Sharpen the fixed knives, or replace the fixed and movable knives if necessary. 5. Try using the a needle with a count that is one lower than the current needle. 6. If the bobbin is spinning loosely, replace the anti-spin spring in the bobbin case. 7. Use the slow start feature. 8. Adjust the needle up stop position.	26 26 16 9 32
9	在缝纫开始时底线纠缠缠绕。 剪线时梭芯空转 Lower thread is tangled at the sewing start. Spinning of bobbin during thread trimming 	1.拉出底线时,梭芯旋转方向是否正确? 2.梭芯上卷绕的线量是否过多? 3.是否已加装旋梭空转防止簧? 4.梭芯转动是否流畅? 5.是否使用了规定的轻合金梭芯以外的其他梭芯? 1. Is the bobbin spring direction correct when the lower thread is being pulled? 2. Is there too much thread wound onto the bobbin? 3. Is the anti-spin spring attached? 4. Is the bobbin turning smoothly? 5. Is a bobbin other than the light-alloy bobbins specified	1.安装梭芯,使其朝旋梭相反的方向旋转。 2.梭芯卷绕量不应超过 80%。 3.加装旋梭空转防止簧。 4.如果旋梭转动不流畅,应更换梭芯。 5.仅使用富山公司规定的梭芯 1. Set the bobbin so that it turns in the opposite direction to the rotary hook. 2. The bobbin winding amount should not be more than 80%. 3. Attach the anti-spin spring. 4. If the bobbin is not turning smoothly, replace the bobbin. 5. Use only bobbin which are specified by HIKARI. 	9 10 9 9

现象 problem		检查 Check	解决方法 Fix method	参照页 Page
10	大量的皱褶(张力过大) Large degree of puckering(excess tension)	1.面线张力是否过大? 2.底线张力是否过大? 3.针尖是否钝化? 4.机针是否过粗? 5.挑线簧张力是否过大? 6.挑线簧工作范围是否过大? 7.压脚压力是否过大? 8.缝纫速度是否过快? 9.送布牙的倾斜度是否恰当?	1.尽量减小面线张力。 2.尽量减小底线张力。 3.如果针尖钝化了, 请予以更换。 4.尽可能更换细一些的机针。 5.尽量减小挑线簧张力。 6.尽量降低挑线簧位置。 7.调整压脚压力。 8.使用缝纫速度控制键逐渐减低缝纫速度。 9.请稍稍降低送布牙的前端。	15 15 26 26 16 29
		1. Is the upper thread tension too strong? 2. Is the lower thread tension too strong? 3. Is the needle tip blunt? 4. Is the needle too thick? 5. Are the thread take-up spring tensions too strong? 6. Is the thread take-up spring operating range too large? 7. Is the presser foot pressure too strong? 8. Is the sewing speed too fast? 9. Is the angle of the feed dog correct?	1. Make the upper thread tension as weak as possible. 2. Make the lower thread tension as weak as possible. 3. Replace the needle if it is blunt. 4. Replace with as thin a needle as possible. 5. Make the thread take up spring tension as weak as possible. 6. Lower the position of the thread take-up spring to as low a position as possible. 7. Adjust the presser foot pressure. 8. Use the sewing speed control keys to gradually reduce the sewing speed. 9. Tilt the front of the feed dog down slightly.	
11	看不见油量表视窗(1)中的油量位置 Oil gauge (1) is not visible in oil gauge window. 	油箱里的油量是否太少? Is the oil tank empty?	补充润滑油 Fill the oil tank with oil.	
12	打开电源并踩下脚踏板时, 缝纫机不工作。 Machine does not operate when power is turned on and treadle is pressed.	电源插头是否从控制箱上断开? Is the power supply connector disconnected from the control box?	将插头插牢。 Insert the connector securely. 	

	现象 problem	检查 Check	解决方法 Fix method	参照页 Page
13	面线和底线断线 Upper and lower threads are breaking 	1. 针尖是否弯曲? 针尖是否钝化? 2. 机针是否安装正确? 3. 缝纫机线是否穿引正确/ 4. 旋梭部是否足够润滑? 5. 面线或底线张力是否过大或过小? 6. 面线是否因挑线簧工作范围太小而松动? 7. 旋梭、送布牙或其他部件是否受损? 8. 线路是否受损? 1. Is the needle tip bent? Is the needle tip blunt? 2. Is the needle properly installed? 3. Is the machine properly threaded? 4. Is the rotary hook sufficiently lubricated? 5. Is the upper or lower thread tension too weak or too strong? 6. Is the upper thread may be loose because the thread take-up spring operating range is too small? 7. Is the rotary hook ,feed dog or other part damaged? 8. Is the thread path damaged?	1. 如果针尖弯曲或断裂, 应予以更换。 2. 如果机针安装不正确, 应正确加以安装。 3. 如果穿引不正确, 应正确穿引机线。 4. 如果油量下降到油量表视窗的下基线, 应添加润滑油。 5. 调整面线或底线张力。 6. 调整挑线簧的位置。 7. 如果这些部件受损, 用油磨石打磨光滑或更换受损部件。 8. 如果线路受损, 用砂纸打磨光滑或更换受损部件。 1. If the needle tip is bent or broken, replace the needle. 2. If it is incorrect, install the needle correctly. 3. If it is incorrect, thread the thread correctly. 4. if the oil gauge is down to the lower reference line in the oil gauge window, add more oil. 5. Adjust the upper thread or lower thread tension. 6. Adjust the position of the thread take-up spring. 7. If they are damaged, smooth them with an oiled grindstone or replace the damaged parts. 8. If the thread path is damaged, smooth it with sandpaper or replace the damaged part.	9 11 8 15 15
14	在缝纫过程中缝纫机停止运转。 Machine stops during sewing	1. 定针键是否开着? 2. 电源电压是否太低? 1. Is the fixed stitch key turned on? 2. Is the power supply voltage too low?	1. 按定针键关闭指示灯。 2. 检查电源。(如果电线太长, 或单一插座接入过多的电器, 则可能造成电压下降, 从而激活复位功能, 使缝纫机停止运转, 即使电源电压本身状况正常。) 1. Press the fixed stitch key so that the indicator turns off. 2. Check the power supply. (if the power cord is too long or too many appliances are being run from a single outlet, this may cause voltage drops which will in turn cause the reset function to activate and stop the machine, even if the power supply itself is normal.)	

	现象 problem	检查 Check	解决方法 Fix method	参照页 Page
15	断针 Broken needle 	1. 缝纫过程中是否在送入或拉出面料时用力过度？ 2. 机针是否安装正确？ 3. 针尖是否弯曲？针尖是否断裂或针孔是否被堵住？ 4. 机针和旋梭的同步是否合适？ 5. 机针和送料的同步是否合适？ 1. Is the material being pushed or pulled with excessive force during sewing? 2. Is the needle properly installed? 3. Is the needle bent, is the needle tip of the rotary hook. 4. Is the needle and rotary hook timing correct? 5. Is the needle timing too advanced with respect to the feed dog?	2. 如果机针安装不正确，应正确加以安装。 3. 更换机针。 4. 调整针杆的高度。 调整机针和旋梭尖之间的间隙。 5. 请将其调整到标准的同步。 注意：a. 如果断针不慎掉入缝纫衣物中，会有很大危险。请必须找出机针的残骸，直至找齐整枚机针。 b. 另外，请保留机针记录，我们推荐以制造者责任法进行机针管理。 2. If it is incorrect, install the needle correctly. 3. Replace the needle. 4. Adjust the height of the needle bar. Adjust the clearance between the needle and the tip of the rotary hook. 5. Retard the needle timing. Note: (1). it is extremely dangerous to leave any pieces of broken needle sticking in the material, if the needle breaks, search for all pieces until the whole of the needle is found again. (2). Furthermore, we recommend that that through steps to taken to account for such needles to comply with product liability regulations.	9 32 31 30
16	缝纫机不能以高速工作 Machine does not operate at high speed	缝纫速度设定和倒缝加固速度设定是否正确？ Is the sewing speed setting or back-tack speed setting incorrect?	使用缝纫速度控制键设定高速缝纫速度。 Use the sewing speed control keys to set the high speed..	

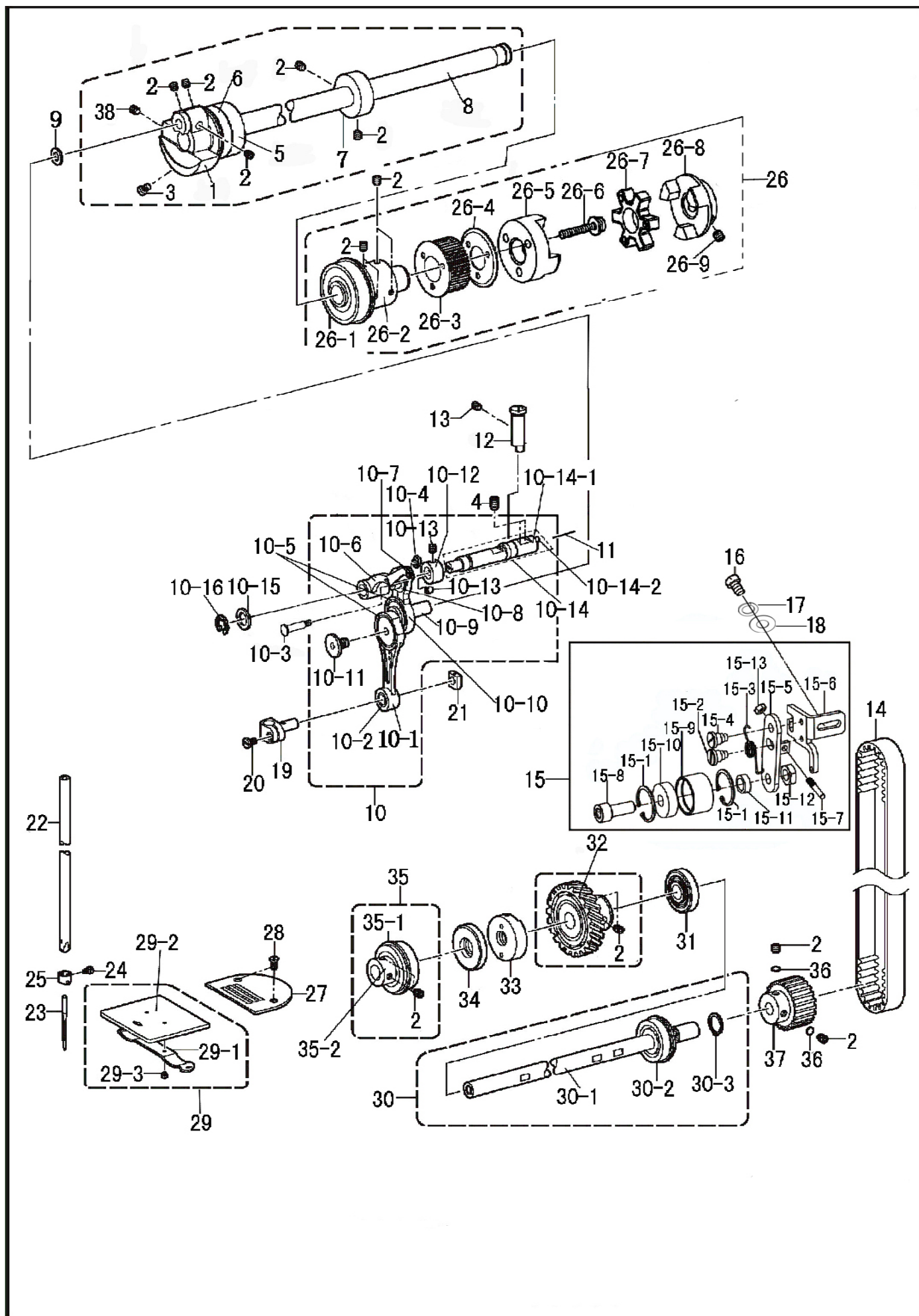
1. 机体部分/Machine body



1. 机体部分/Machine body

序号 PEF. NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	108.01-01	机壳组件	MACHINE COVER	(1套)	(1套)	
1-1	108.01-01-01	机头	MACHINE HEAD	1	1	
1-2	108.01-01-02	底板	SOLEPLATE	1	1	
2	103.01-02	脚柱R	STAND R	1	1	
3	103.01-03	脚柱L	STAND L	2	2	
4	103.01-04	电机防护罩(马达盖)	MOTER COVER	1	1	
5	01-405001223-1	螺钉 M5×12	SCREW PAN M5×12	9	9	
6	108.01-06	后侧盖	SIDE PLATE	1	1	
7	01-405001823-1	螺钉 M5×18	SCREW PAN M5×18	2	2	
8	07-0521313-1	弹簧垫圈 Φ5	WASHER SPRING Φ5	2	2	
9	05-053101000-1	平垫圈 Φ5	WASHER PLAIN Φ5	2	2	
10	22-08003010	橡皮塞 Φ8	RUBBER CAP Φ8	5	5	103.01-08
12	22-11505013	橡皮塞 Φ11.5	RUBBER CAP Φ11.5	1	1	108.01-12
13	22-15505017	橡皮塞 Φ15.5	RUBBER CAP Φ15.5	3	3	103.01-09
14	22-09403012	橡皮塞 Φ9.4	RUBBER CAP Φ9.4	2	2	103.01-10
15	22-20809024	橡皮塞 Φ20.8	RUBBER CAP Φ20.8	1	1	101.01-65G
16	22-20012000	橡皮塞 Φ20	RUBBER CAP Φ20	1	1	108.01-16
17	103.01-11	定位座	RULER PLATE	1	1	
18	01-404000623-1	螺钉 M4×6	SCREW PAN M4×6	1	1	
19	103.01-13	脚柱RF	STAND RF	1	1	
20	101.01-13	安全指示牌	SAFETY DESIGNATION CARD	1	1	
	108.01-21	9120S型号牌	7920S MODEL PLATE	1		
21	109.01-21	9120SH型号牌	7920SH MODEL PLATE		1	
22	17-3020004-5	型号牌铆钉	POLE	2	2	
23	201.02-10	安全标识	SAFE MARKING	1	1	
24	22-13505016	橡皮塞 Φ13.5	RUBBER CAP Φ13.5	1	1	103.04-64
25	103.04-63	带胶贴片	RUBBER CAP LABEL	1	1	
26	103.11-64	线夹 U3	CORD HOLDER, U3	1	1	
27	01-405000823-1	螺钉 M5×8	SCREW, PAN M5×8	1	1	
28	01-512003024-1	连接螺钉		2	2	机壳连接
29	01-512003524-1	连接螺钉		1	1	机壳连接
30	16-3060301-5	锥端销(6x30)		2	2	机壳连接

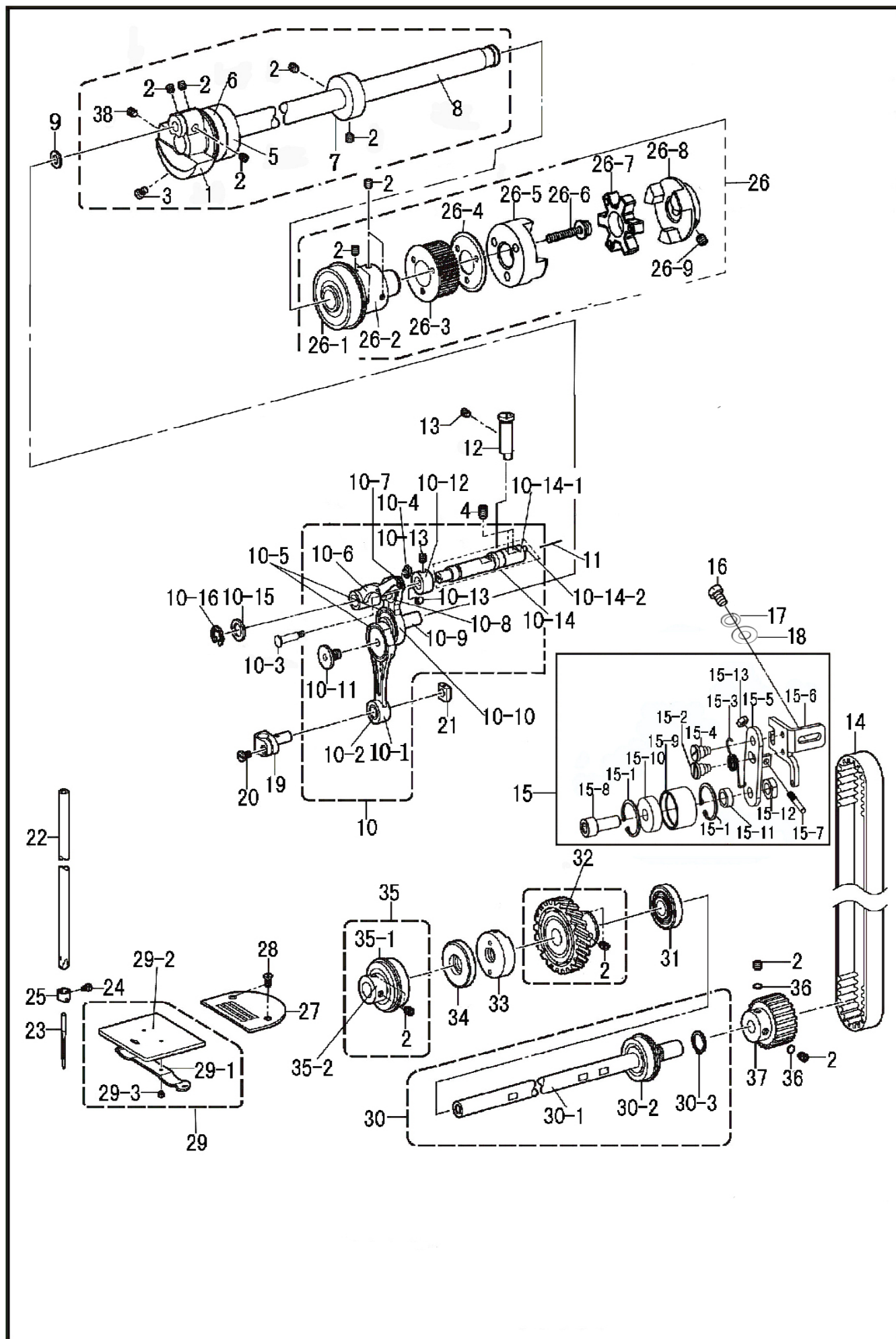
2. 针杆. 挑线杆装置/Needlebar and thread take-up mechanism



2. 针杆. 挑线杆装置/Needlebar and thread take-up mechanism

序号 PEF. NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	108.02-01-03	针杆曲柄	NEEDLE BAR CRANK	1	1	
2	01-806750614-1	固定螺钉 M6X0.75×6	SET SCREW SOCKET(FT)M6X0.75	16	16	
3	103.02-01-04	螺钉 M8	SCREW M8	1	1	
4	01-805000514-1	螺钉 M5×5	SCREW M5×5	2	2	
5	14-6004-2Z	轴承 (6004-2Z)	BEARING (6004-2Z)	1	1	
6	14-6004-2ZN	带挡圈轴承 (6004-2ZN)	TAKE RING BEARING (6004-2ZN)	1	1	
7	103.02-01-02	卷线驱动轮	BOBBIN WINDER DRIVING WHEEL	1	1	
8	103.02-01-09	上轴	UPPER SHAFT	1	1	
9	05-081081553-5	垫圈 Φ8	WASHER PLAIN Φ8	1	1	
10	108.02-10	挑线杆组件	NEEDLE BAR CONNECTING ROD	1套		
	109.02-10	挑线杆组件	NEEDLE BAR CONNECTING ROD SET		1套	
10-1	108.02-10-01	针杆连杆	NEEDLE BAR CONNECTING ROD	(1)	(1)	
10-2	108.02-10-13	针杆连杆铜套	NEEDLE BAR CONNECTING ROD BUSH	(1)	(1)	
10-3	103.02-04-19	轴位螺钉	SHOULDER SCREW	(1)	(1)	
10-4	04-609400280-4	螺母	NUT	(1)	(1)	
10-5	14-608-2Z	轴承 (608-2Z)	BEARING (608-2Z)	(2)	(2)	
10-6	103.02-04-06	挑线连杆	THREAD TAKE-UP LEVER	(1)		
	104.02-04-06	挑线连杆	THREAD TAKE-UP LEVER		(1)	
10-7	103.02-04-18	过线套	THREAD SET	(1)	(1)	
10-8	14-624-2Z	轴承 (624-2Z)	BEARING (624-2Z)	(1)	(1)	
10-9	108.02-11	挑线曲柄	THREAD TAKE-UP CRANK	(1)		
	109.02-11	挑线曲柄	THREAD TAKE-UP CRANK		(1)	
10-10	103.02-04-08	挑线杆	THREAD TAKE-UP LEVER	(1)		
	104.02-04-08-01	挑线杆	THREAD TAKE-UP LEVER		(1)	
10-11	103.02-04-13	螺钉SM9/64×40 L=6	SCREW SM9/64×40 L=6	(1)	(1)	
10-12	103.02-04-15	紧圈	TIGHT RING	(1)	(1)	
10-13	01-804000414-1	螺钉M4×4	SCREW M4×4	(2)	(2)	
10-14	108.02-10-07	挑线连杆销组件	THREAD TAKE UP LEVER PIN	(1)	(1)	
10-14-1	108.02-10-07-01	挑线连杆销	THREAD TAKE UP LEVER PIN	(1)	(1)	
10-14-2	108.02-10-07-02	限位销	POSITIONING PIN	(1)	(1)	
10-15	05-081161253-5	垫圈	WASHER	(1)	(1)	
10-16	06-0601012-1	挡圈	RETAINING RING	(1)	(1)	
11	108.02-10-09	油线	WICK	1	1	
12	104.02-50	定位销	STOPPER PIN	1	1	
13	01-805000514-1	螺钉M5×5	SCREW M5×5	1	1	
14	103.02-33	同步带	TIMING BELT	1	1	
15	103.02-51-00	张紧轮组件	IMPACTION WHEEL ASM.	1套	1套	
15-1	103.02-51-01	滚轮轴承内卡簧	RETAINING RING	(2)	(2)	
15-2	103.02-51-02	扭簧轴位螺钉	SHOULDER SCREW	(1)	(1)	
15-3	103.02-51-03	滚轮复位扭簧	SPRING	(1)	(1)	
15-4	103.02-51-04	轴位螺钉	SHOULDER SCREW	(1)	(1)	
15-5	103.02-51-05	滚轮轴承固定板	BEARING FIXING PLANK	(1)	(1)	
15-6	103.02-51-06	滚轮安装支架	IDLER WHEEL FIXING PLANK	(1)	(1)	
15-7	103.02-51-07	限位螺钉	SCREW	(1)	(1)	
15-8	01-510002524-1	螺钉 M10×25	SCREW, M10×25	(1)	(1)	
15-9	103.02-51-09	滚轮	IDLER WHEEL	(1)	(1)	
15-10	103.02-51-10	滚轮轴承	IDLER WHEEL BEARING	(1)	(1)	
15-11	103.02-51-11	滚轮轴承止动套	IDLER WHEEL BEARING BUSH	(1)	(1)	

2. 针杆. 挑线杆装置/Needlebar and threerl take-up mechanism



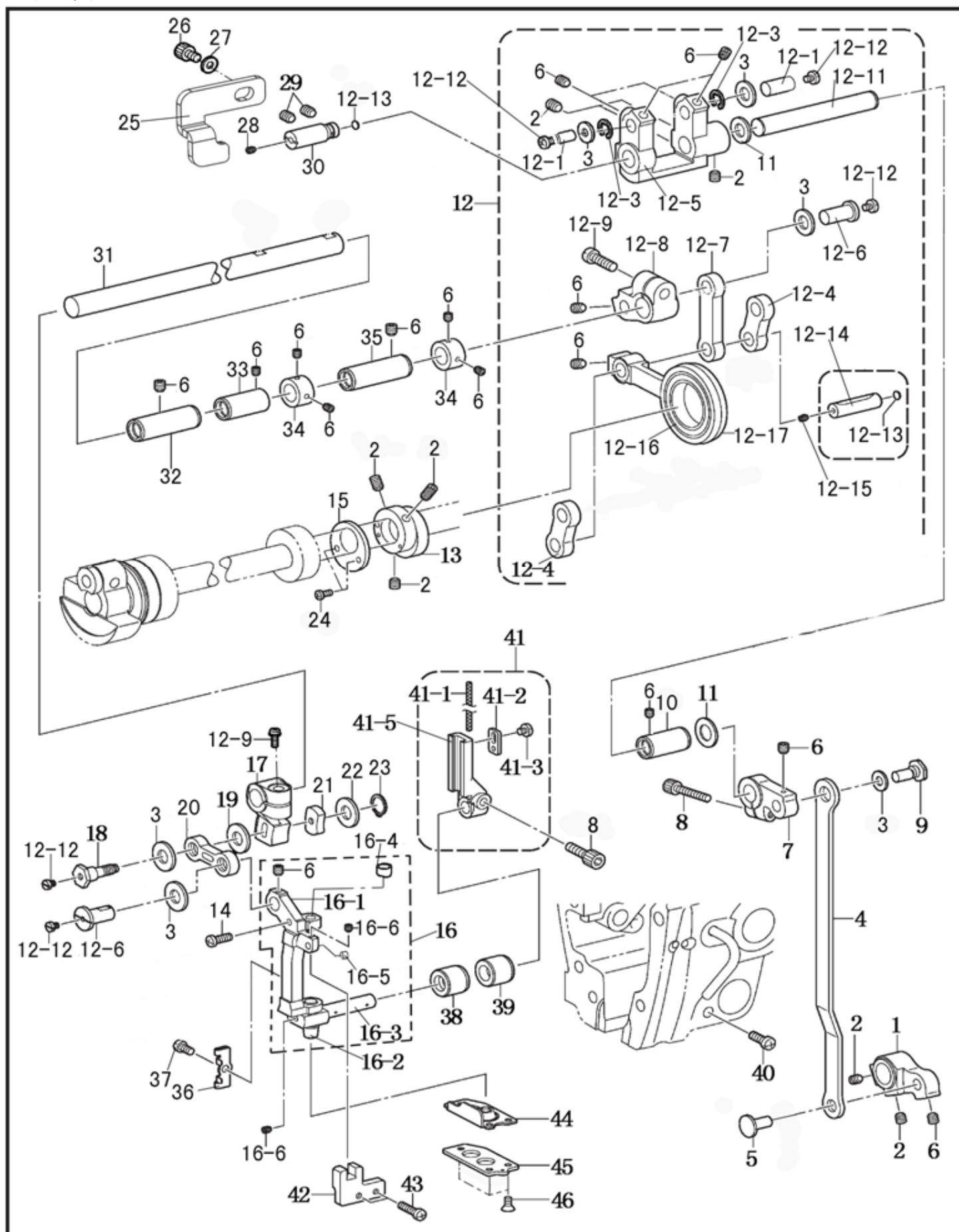
2. 针杆.挑线杆装置/Needlebar and threerd take-up mechanism

序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
15-13	03-606000350-1	螺母 M6	NUT, M6	(1)	(1)	
16	01-506001624-1	螺钉 M6X16	SCREW M6X16	2	2	
17	07-0631616-1	弹簧垫圈 Φ6	WASHER SPRING Φ6	2	2	
18	05-064161200-1	平垫圈 Φ6	WASHER PLAIN Φ6	2	2	
19	103.02-04-14	针杆连接柱	NEEDLE ROD HOLDER	1	1	
20	02-509400721-1	螺钉SM9/64×40 L=7	SCREW SM9/64×40 L=7	1	1	
21	103.02-11	针杆连接滑块	NEEDLE BAR GUIDE SLIDE BLOCK	1	1	
22	103.02-12	针杆	NEEDLE BAK	1		
	109.02-12	针杆	NEEDLE BAK		1	
23	101.03-11	机针(DB×1#14)	NEEDLE (DB×1#14)	1		
	101.12-11-24	机针(DP×5#22)	NEEDLE (DB×1#22)		1	
24	02-508440511-1	固定螺钉SM1/8×44	SCREW SM1/8×44	1	1	
25	101.03-10	针杆线钩	NEEDL BAR THREEAD GUIDE	1		
	104.02-21	针杆过线环	NEEDL BAR THREEAD GUIDE		1	
26		连轴器组件	JOINT UNIT	(1套)	(1套)	
26-1	14-6204-2ZN	轴承(6204-2ZN)	BALL BEARING (6204-2ZN)	1	1	
26-2	103.02-20-06	连接套	CONNECT SET	1	1	
26-3	103.02-20-02	同步带轮 U	TIMING PULLEY U	1	1	
26-4	103.02-20-03	法兰	FLANGE	1	1	
26-5	103.02-44	连轴器 (1)	COUPLING (1)	1	1	
26-6	18-405004023-1	螺钉三件套M5×40	SCREW PAN M5×40	3	3	
26-7	103.02-45	连轴器橡胶圈	COUPLING RUBBER RING	1	1	
26-8	103.02-48	连轴器 (2)	COUPLING (2)	1	1	
26-9	01-806000614-1	连轴器 (2) 固定螺钉	COUPLING (2) SET SCREW	3	3	
27	108.02-40	针板	NEEDLEPLATE	1		
	109.02-40	针板	NEEDLEPLATE		1	
28	02-211400823-1	螺钉SM11/64×40	SCREW SM11/64×40	2	2	
29	101.01-46	推板组件	SLIDE PLATE ASSY	1套	1套	
29-1		推板簧	SPRING PLATE	(1)	(1)	
29-2		推板	SLIDE PLATE	(1)	(1)	
29-3		螺钉SM3/32×56	SCREW SM3/32×56	(2)	(2)	
30		下轴组件	LOWER SHAFT ASSY	(1套)	(1套)	
30-1	103.02-25-01	下轴	LOWER SHAFT	1	1	
30-2	14-6301-2ZN	轴承(6301-2ZN)	BALL BEARING (6301-2ZN)	1	1	
30-3	10-1101015-1	轴用挡圈 C12	RETAINING RING EXTERNAL C12	1	1	
31	13-11470370	油封	OIL SEAL	1	1	
32	103.02-28	下轴齿轮	LOWER SHAFT GEAR	1	1	
33	103.02-36	下轴轴套	LOWER SHAFT BUSH	1	1	
34	13-11470400	油封	OIL SEAL	1	1	
35	103.02-01-00	轴承套组件	BEARING BUSH ASSY	(1套)	(1套)	
35-1	14-6004-2ZN	带挡圈轴承(6004-2ZN)	TAKE RING BEARING(6004-2ZN)	1	1	
35-2	103.02-32-02	轴承套	BEARING BUSH	1	1	
36	103.02-31	垫片 Φ4.8	SPACER Φ4.8	2	2	
37	103.02-29	同步带轮 D	TIMING PULLEY D	1	1	
38	01-806751014-1	螺钉 M6X0.75X10	SCREW M6X0.75X10	1	1	

3. 针送布装置/Needle feed mechanism

序号 PEF. NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	108.03-01	针送布切换臂 D	NF REGULATOR ARMD	1	1	
2	01-806750614-1	固定螺钉 M6×0.75x6	SCREW M6×0.75x6	8	8	
3	05-081081553-5	垫圈 Φ8	WASHER PLAIN SPECIAL Φ8	6	6	
4	108.03-04	针送布切换连杆	NF REGULATOR CONNECTING ROD	1	1	
5	103.04-08-03	连接栓	STUD	1	1	
6	01-805000514-1	固定螺钉 M5×5	SCREW M5×5	17	17	
7	108.03-07	针送布切换臂 U	NF REGULATOR ARMU	1	1	
8	01-505001524-1	螺栓 M5×15	BOLT SOCKET M5×15	2	2	
9	108.03-09	切换臂偏心销	REGULATOR ARMELECTRIC PIN	1	1	
10	108.03-27	针送布切换轴套	NF REGULATOR SHAFT BUSH	1	1	
11	05-102101803-5	平垫圈 Φ10	WASHER PLAIN Φ10	2	2	
12	108.03-12	针送布切换器总组件	NEEDLE FEED REGULATOR UNIT	(1套)	(1套)	
12-1	108.03-12-01	切换器连接轴 S	FEED REGULATOR LINK STUD S	2	2	
12-3	10-0740812-1	轴用挡圈 E8	RETAINING RING EXTERNAL E8	2	2	
12-4	108.03-12-04	短连接杆	LINK S ASSY	2	2	
12-5	108.03-12-14	切换器支架	FEED REGULATOR SUPPORT	1	1	
12-6	108.03-12-13	连接销	LINK PIN	2	2	
12-7	108.03-12-07	长连接杆	LINK L ASSY	1	1	
12-8	108.03-12-08	针送布臂 R	NEEDLE FEED ARM R	1	1	
12-9	01-506001624-1	固定螺钉 M6×16	SCREW M6×16	2	2	
12-11	108.03-12-12	切换器连接轴 L	FEED REGULATOR LINK STUD L	1	1	
12-12	01-504000521-1	螺钉 M4×5	SCREW M4×5	5	5	
12-13	108.03-12-11-02	油线盖	PUSHER	2	2	
12-14	108.03-12-11-03	连杆轴	LINK STUD	1	1	
12-15	01-803000414-1	螺钉 M3×4	SCREW M3×4	1	1	
12-16	14-61805-2LS	轴承(61805V 2LS)	BEARING(61805V 2LS)	1	1	
12-17	108.03-12-10	针送布连杆	NF CONNECTING ROD	1	1	
13	108.03-13	针送料偏心轮	N FECCENTRIC WHEEL	1		
	109.03-13	针送料偏心轮	N FECCENTRIC WHEEL		1	
14	01-405000623-1	螺钉 M5×6	SCREW M5×6	1	1	
15	108.03-25	压板	HOLDER	1	1	
16	108.03-16	针杆架组件	N-BAK BASE ASSY	1套	1套	
16-1	108.03-16-01	针杆架	N-BAK BASE	(1)	(1)	
16-2	108.03-16-02	摆动针杆下套	NEEDLE BAR BUSH	(1)	(1)	
16-3	108.03-16-03	摆动针杆连接柱	NEEDLE BOD HOLDER	(1)	(1)	
16-4	108.03-16-12	摆动针杆上套	NEEDLE BAR BUSH	(1)	(1)	
16-5	108.03-16-11	短销	STOPPER	(1)	(1)	
16-6	01-804000414-1	螺钉 M4×4	SET SCREW SOCKET M4×4	(2)	(2)	
17	108.03-17	针送布轴臂 L	NEEDLE FEED SHAFT ARM L	1	1	
18	108.03-18	针送布臂轴	NF ARM SHAFT	1	1	
19	05-061151603-5	垫圈	WASHER	1	1	
20	108.03-16-04	针送布连接杆	LINK	1	1	
21	108.03-20	针送布臂轴定位块	NF ARM SHAFT STOPPER	1	1	
22	05-043080900-1	平垫圈 Φ4	WASHER PLAIN Φ4	1	1	
23	10-0370410-1	轴用挡圈	RETAINING RING EXTERNAL	1	1	
24	01-435000623-1	螺钉 M3.5×6	SCREW M3.5×6	2	2	
25	108.03-60	限位板	LIMIT PLACE BOARD	1	1	

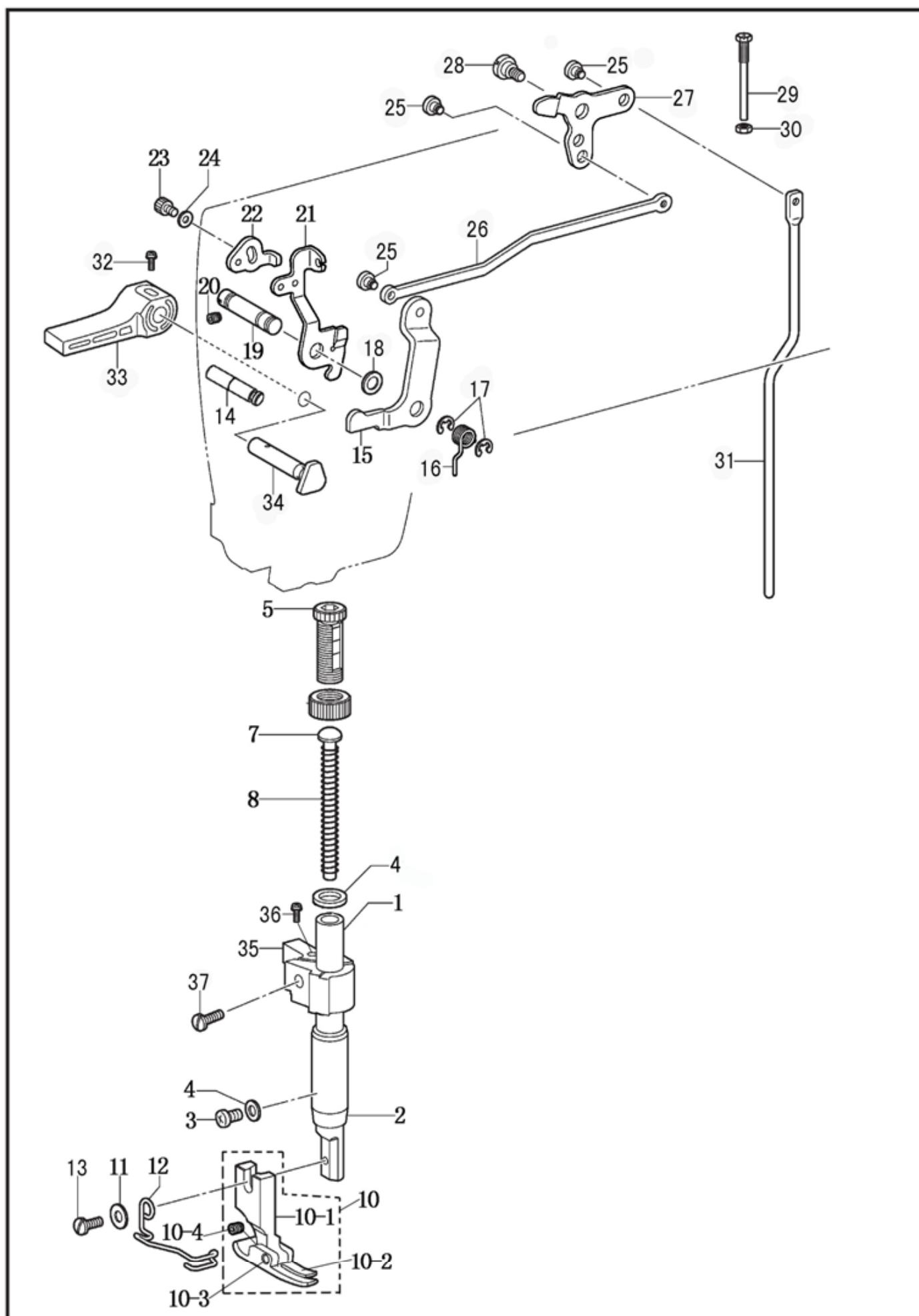
3. 针送布装置/Needle feed mechanism



3. 针送布装置/Needle feed mechanism

序号 PEF. NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
26	01-505001021-1	螺钉M5X10	SCREW M5×10	1	1	
27	05-053101000-1	垫圈 Φ5.3	WASHER PLAIN SPECIAL Φ5.3	1	1	
28	01-804000414-1	螺钉 M4×4	SET SCREW SOCKET M4×4	1	1	
29	01-806000514-1	螺钉 M6×5	SET SCREW SOCKET M6×5	2	2	
30	108.03-31	切换器支架轴	FEED REGULATOR SUPPORT	1	1	
31	108.03-32-01	针送布轴	NEEDLE FEED SHAFT	1	1	
32	108.03-33	针送布轴套 L	NF FEED SHAFT METAL L	1	1	
33	108.03-34	针送布轴套 M	NF FEED SHAFT METAL M	1	1	
34	108.03-35	紧圈	SET COLLAR	2	2	
35	108.03-37	针送布轴套 R	NF FEED SHAFT METAL R	1	1	
36	108.03-23	油线夹	WICK HOLDER	1	1	
37	01-404000623-1	螺钉 M4×6	SET SCREW SOCKET M4×6	1	1	
38	108.03-38	针杆架轴套 L	BUSH L	1	1	
39	108.03-39	针杆架轴套 R	BUSH R	1	1	
40	01-405000823-1	螺钉 M5×8	SET SCREW SOCKET M5×8	1	1	
41		滑块导向组件	SLIDE BLOCK GUIDE ASSY	(套)	(套)	
41-1	108.03-41-01	油线	WICK	1	1	
41-2	108.03-41-02	油线压板	WICK SETTING PLATE	1	1	
41-3	01-404000423-1	螺钉 M4×4	SCREW M4×4	1	1	
41-5	108.03-41-05	滑块导向	SLIDE BLOCK GUIDE	1	1	
42	108.03-42	针杆架导向	NEEDLE BAR BRACKET GUIDE	1	1	
43	01-404001223-1	螺钉 M4×12	SCREW M4×12	2	2	
44	108.03-44	橡皮垫片	RUBBER PACKING	1	1	
45	108.03-45	橡皮垫片盖	RUBBER PACKING PLATE	1	1	
46	01-104001021-1	螺钉 M4×10	SCREW M4×10	3	3	

4. 压脚装置/Presser foot mechanism



4. 压脚装置/Presser foot mechanism

序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	103. 03-01	压杆 (用于中厚料)	PRESSER BAR	1		
	104. 03-01	压杆 (用于厚料)	PRESSER BAR		1	
2	103. 03-02	压杆轴套	PRESSER BAK BUSH	1	1	
3	01-405000623-1	螺钉 M5×6	SCREW M5×6	1	1	
4	05-053101000-1	平垫圈 Φ5	WASHER PLAIN Φ5	2	2	
5	113. 03-30	调压螺钉组件	PRESSER ADJUSTING SCREW ASSY	1套	1套	
7	103. 03-04	弹簧导杆	SPRING GUIDE	1	1	
8	103. 03-05	压紧弹簧 (用于中厚料)	PRESSER BAR SPRING	1		
	104. 03-05	压紧弹簧 (用于厚料)	PRESSER BAR SPRING		1	
10	108. 04-10	压脚组件	PRESSER FOOT ASSY	1套		
10-1	108. 04-10-01	活络压板	PRESSER FOOT HANDLE	(1)		
10-2	108. 04-10-02	活压脚柄	PRESSER BOARD	(1)		
10-3	104. 03-07-03	活压脚销	PRESSER FOOT PIN	(1)		
10-4	104. 03-07-04	活压脚簧	PRESSER FOOT SPRING	(1)		
10	109. 04-10	压脚组件	PRESSER FOOT ASSY		1套	
10-1	109. 04-10-01	活压脚柄	PRESSER FOOT HANDLE		(1)	
10-2	109. 04-10-02	活络压板	PRESSER BOARD		(1)	
10-3	109. 04-10-03	活压脚销	PRESSER FOOT PIN		(1)	
10-4	109. 04-10-04	活压脚簧	PRESSER FOOT SPRING		(1)	
11	05-043080900-1	平垫圈 Φ4	WASHER PLAIN Φ4	1	1	
12	104. 03-29	护指器	FINGER GUARD	1	1	
13	02-509401221-1	螺钉 SM9/64×40 L=12	SCREW SM9/64×40 L=12	1	1	
14	103. 03-16	弹簧销	SPRING PIN	1	1	
15	108. 04-15	抬压连杆	PRESSER BAR LIFTER LEVER	1	1	
16	103. 03-15	抬压连杆簧	P-BAR LIFTER LEVER SPRING	1	1	
17	06-0500611-1	螺纹销开口挡圈 E5	RETAINING RING E5	2	2	
18	05-073051300-1	垫圈	WASHER PLAIN	1	1	
19	103. 03-12	抬压连杆轴	PRESSER BAR LIFTER LEVER SHAFT	1	1	
20	01-805000514-1	螺钉 M5×5	SCREW M5×5	1	1	
21	103. 03-14-1	松线板	TENSION RELEASE PLATE	1	1	
22	103. 03-14-2	松线切换板	T-RELEASE SELECTION PLATE	1	1	
23	01-504000524-1	螺钉 M4×5	SCREW M4×5	1	1	
24	05-043080900-1	平垫圈 Φ4	WASHER PLAIN Φ4	1	1	
25	103. 03-24	段螺钉 M5	SHOULDER SCREW M5	3	3	
26	108. 04-16	膝控提升连杆	KNEE LIFTER CONNECTING ROD	1	1	
27	108. 04-18	膝控杠杆	KNEE LIFTER LEVER	1	1	
28	103. 03-19	短轴螺钉 M6	SHOULDER SCREW M6	1	1	
29	108. 04-31	螺钉 M6	SCREW M6	1	1	
30	03-606000350-1	六角螺母 M6	NUT M6	1	1	
31	108. 04-33	膝控提升杆	KNEE LIFTER BAK	1	1	
32	19-435001123-1	螺钉 (带垫圈) M3.5×12	SCREW PAN M3.5×12	1	1	
33	103. 03-25	抬压脚扳手	LIFTING LEVER	1	1	
34	103. 03-28	压紧杆提升凸轮	PRESSER BAR LIFTER CRANK	1	1	
35	108. 04-37-01	压紧托架	PRESSER BAR GUIDE BRACKET	1	1	
36	01-703000725-1	螺栓 M3X7	BOLT M3X7	1	1	
37	01-404001223-1	螺钉 M4×12	SCREW M4×12	1	1	

This diagram is an exploded view of a mechanical assembly, likely a vehicle's suspension or steering component. It features numerous numbered parts and dashed boxes indicating sub-assemblies. The parts are numbered as follows:

- 1: A circular component with a central hub and multiple spokes.
- 2: A small cylindrical component.
- 3: A small cylindrical component.
- 4: A small cylindrical component.
- 5: A small cylindrical component.
- 6: A large cylindrical component with a central hub.
- 7: A small cylindrical component.
- 8: A small cylindrical component.
- 9: A small cylindrical component.
- 10: A long cylindrical component.
- 11: A small cylindrical component.
- 12: A small cylindrical component.
- 13: A small cylindrical component.
- 14: A small cylindrical component.
- 15: A small cylindrical component.
- 16: A small cylindrical component.
- 17: A small cylindrical component.
- 18: A small cylindrical component.
- 19: A small cylindrical component.
- 20: A small cylindrical component.
- 21: A small cylindrical component.
- 22: A small cylindrical component.
- 23: A small cylindrical component.
- 24: A long cylindrical component.
- 25: A small cylindrical component.
- 26: A small cylindrical component.
- 27: A small cylindrical component.
- 28: A small cylindrical component.
- 29: A small cylindrical component.
- 30: A small cylindrical component.
- 31: A small cylindrical component.
- 32: A small cylindrical component.
- 33: A small cylindrical component.
- 34: A small cylindrical component.
- 35: A small cylindrical component.
- 36: A small cylindrical component.
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- 63: A small cylindrical component.
- 64: A small cylindrical component.
- 65: A small cylindrical component.
- 66: A small cylindrical component.
- 67: A small cylindrical component.
- 68: A small cylindrical component.
- 69: A small cylindrical component.
- 70: A small cylindrical component.
- 71: A small cylindrical component.
- 72: A small cylindrical component.
- 73: A small cylindrical component.
- 74: A small cylindrical component.
- 75: A small cylindrical component.
- 76: A small cylindrical component.

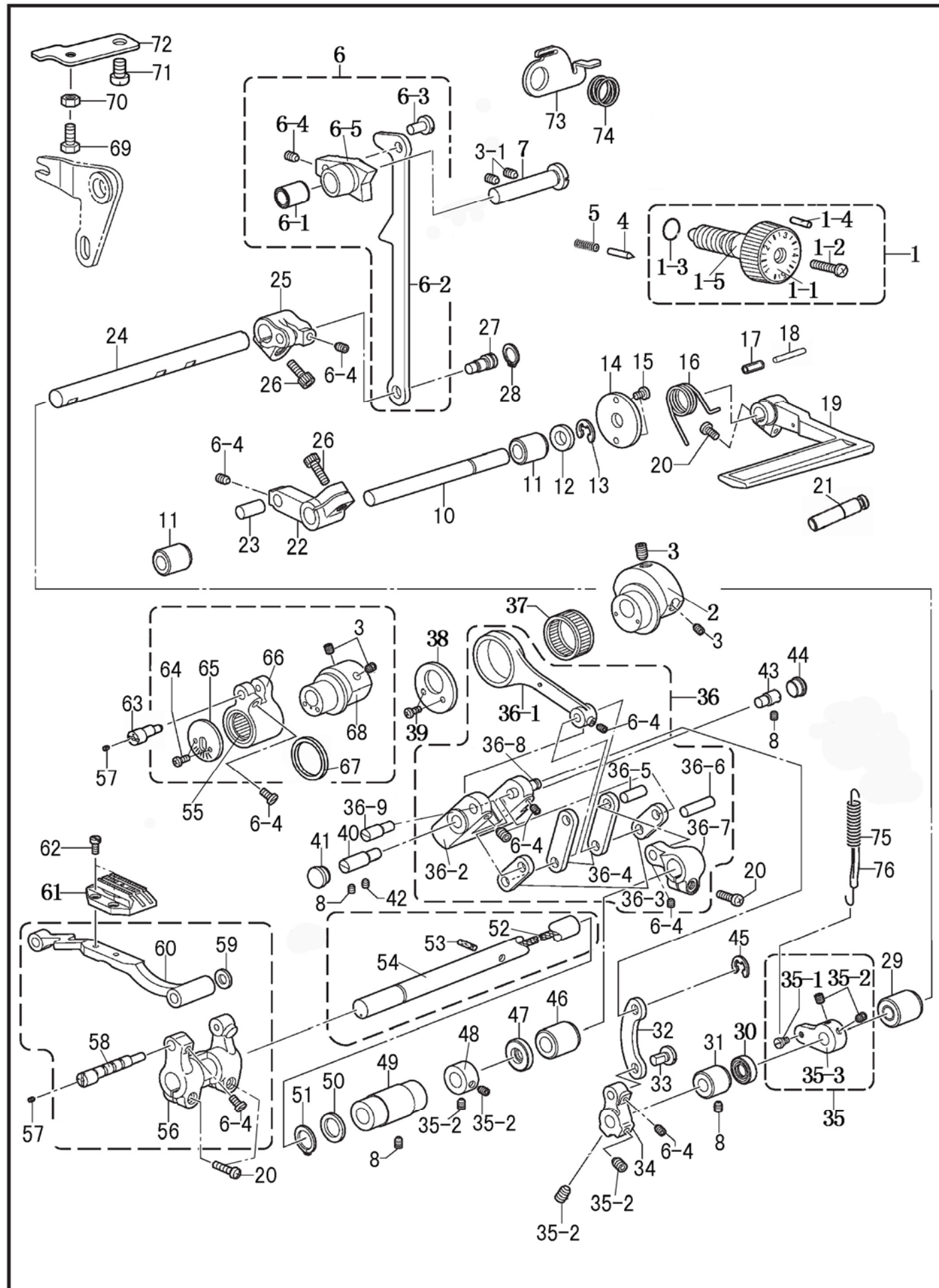
The diagram includes several dashed boxes indicating sub-assemblies:

- A box around parts 6, 6-1, 6-2, 6-3, 6-4, and 6-5.
- A box around parts 1, 1-1, 1-2, 1-3, 1-4, 1-5, and 1-6.
- A box around parts 3, 3-1, and 3-2.
- A box around parts 17, 18, and 19.
- A box around parts 25, 26, and 27.
- A box around parts 36, 36-1, 36-2, 36-3, 36-4, 36-5, 36-6, 36-7, 36-8, 36-9, and 36-10.
- A box around parts 55, 56, 57, 58, 59, and 60.
- A box around parts 35, 35-1, 35-2, 35-3, and 35-4.

5. 送料装置 / Feed mechanism

序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	108.05-01	针距表盘组件	STITCH LENGTH DIAL ASSY	(1套)		
	109.05-01	针距表盘组件	STITCH LENGTH DIAL ASSY		(1套)	
1-1	108.05-01-01	针距旋钮 M	STITCH LENGTH DIAL M	1		
	109.05-01-01	针距旋钮 H	STITCH LENGTH DIAL H		1	
1-2	02-512281821-1	螺钉 SM3/16×28	SCREW SM3/16×28	1	1	
1-3	12-095265	O型圈	O RING	1	1	
1-4	103.04-01-03	定位杆	POSITIONING ROD	1	1	
1-5	103.04-01-04	螺杆	SCREW	1	1	
2	108.05-02	水平偏心轮	ECCENTRIC WHEEL W/SCREW	1		
	103.04-45	水平偏心轮	ECCENTRIC WHEEL W/SCREW		1	
3	01-806751014-1	螺钉 M6×0.75X10	SET SCREW SOCKETM6×0.75X10	4	4	
3-1	01-805000514-1	螺钉 M5×5	SET SCREW SOCKETM5×5	2	2	
4	103.04-02	定位销	POSITIONING PIN	1	1	
5	103.04-03	止动销弹簧	SPRING	1	1	
6		送料调节器组件	FEED REGULATOR ASSY	(1套)	(1套)	
6-1	103.04-15	轴套 L=20	BUSH DRY L=20	1	1	
6-2	103.04-08-02	切换连杆	F-REGULATOR CONNECTING ROD	1	1	
6-3	103.04-08-03	连接栓	CONNECTING STUD	1	1	
6-4	01-805000514-1	螺钉 M5×5	SET SCREW SOCKET M5×5	10	10	
6-5	103.04-08-01	送布调节器	FEED REGULATOR	1		
	104.04-08-01	送布调节器	FEED REGULATOR		1	
7	108.05-07	送布调节器轴	FEED REGULATOR SHAFT	1	1	
8	01-806000514-1	螺钉 M6×5	SET SCREW SOCKET M6×5	4	4	
10	103.04-16	倒缝手柄轴	REVERSE SEWING SHAFT	1	1	
11	103.04-17	轴套 L=12	BUSH DRY L=12	2	2	
12	05-105091800-1	平垫圈 Φ10.5	WASHER PLAIN Φ10	1	1	
13	06-0801016-1	挡圈 E8	RETAINING RING E8	1	1	
14	103.04-22	衬片	SPACER	1	1	
15	01-405000823-1	螺钉 M5×8	SET SCREW SOCKET M5×8	2	2	
16	103.04-27	倒缝手柄弹簧	REVERSE LEVER SPRING	1	1	
17	103.04-29	尼龙管 L=13.5	NYLON TUBE L=13.5	1	1	
18	103.04-28	限位销	POSITIONG PIN	1	1	
19	103.04-25	倒缝手柄	REVERSE LEVER	1	1	
20	01-505001624-1	螺钉M5X16	SCREW M5×16	4	4	
21	103.03-16	弹簧销	SPRING PIN	1	1	
22	103.04-30-01	操纵杆托架	HANDLE SHAFT ARM	1	1	
23	103.04-30-02	送料曲柄销	FEED ROCK ARM SHAFT	1	1	
24	108.05-21	切换器轴	FEED REGULATOR SHAFT	1	1	
25	103.04-31-01	切换器轴托架	FEED REGULATOR SHAFT ARM	1	1	
26	01-505001524-1	螺栓 M5×15	BOLT M5×15	2	2	
27	103.04-34	偏心销	ECCENTRIC PIN	1	1	
28	10-0931015-1	轴用挡圈	RETAINING RING, EXTERNAL	1	1	
29	103.04-37	切换器轴套R	FEED REGULATOR SHAFT R	1	1	
30	13-11470220	油封	OIL SEAL	1	1	
31	103.04-39	切换器轴套L	FEED REGULATOR SHAFT L	1	1	
32	108.05-31	切换器连杆	F-REGULATOR CONNECTING ROD	1	1	

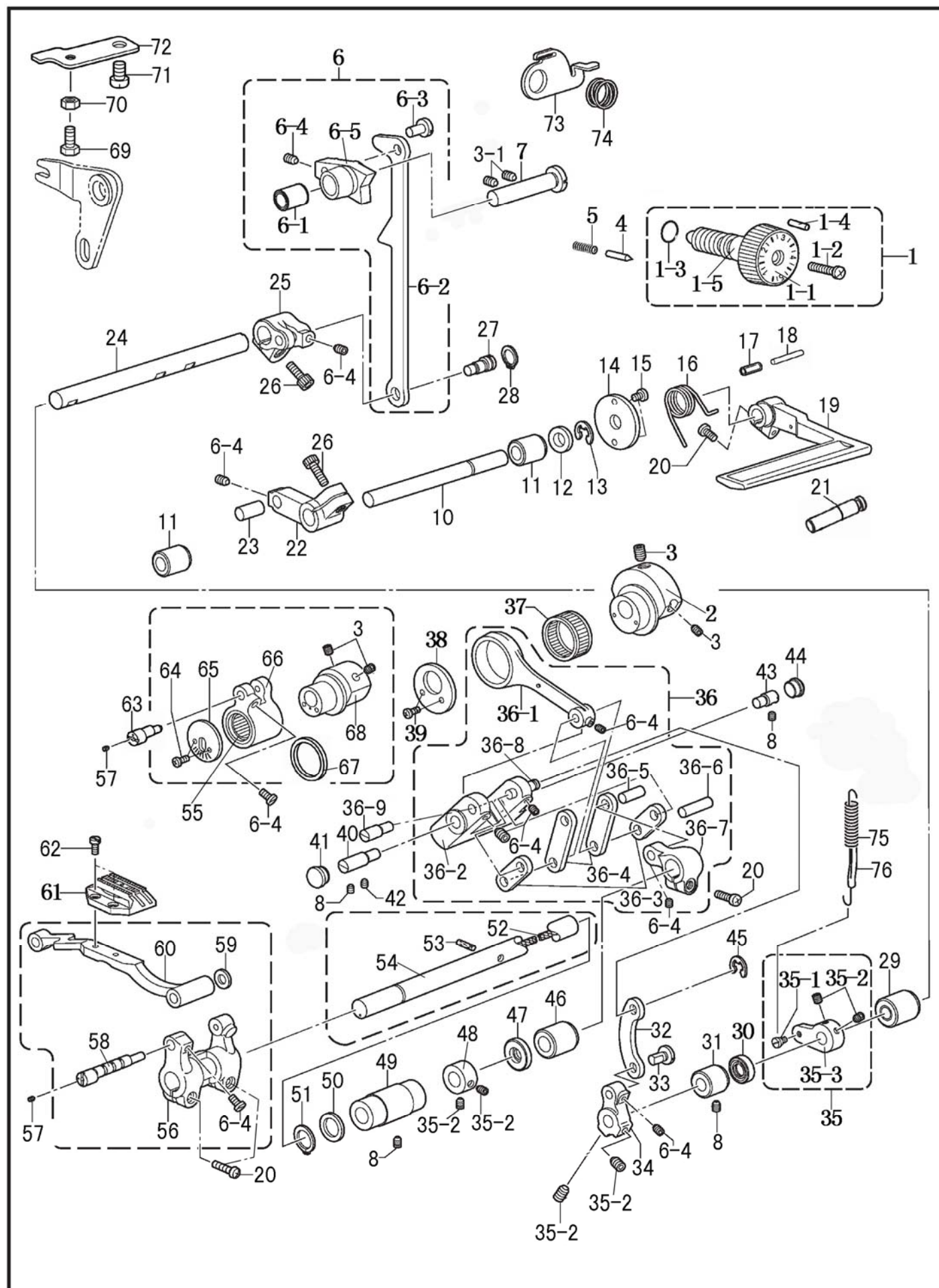
5. 送料装置 / Feed mechanism



5. 送料装置 / Feed mechanism

序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
33	103.04-08-03	连接栓	LINK BOLT	1	1	
34	103.04-42-02	切换轴接头	FEED REGULATOR SHAFT JOINT	1	1	
35		弹簧挂钩组件	SPRING HOOK ARM ASSY	(1套)	(1套)	
35-1	103.04-95-02	段螺钉 M4	SHOULDER SCREW M4	1	1	
35-2	01-806750614-1	固定螺钉	SET SCREW SOCKET	6	6	
35-3	108.05-35-03	弹簧挂钩	SPRING HOOK ARM	1	1	
36		切换器总组件	FEED REGULATOR UNIT	(1套)	(1套)	
36-1	103.04-43-02	水平送布连杆	LEVEL FEED CONNECTING ROD	1	1	
36-2	108.05-36-04	切换器摆座	FEED REGULATOR	1	1	
36-3	103.04-43-05	水平送布联环组件	LEVEL FEED LINK ASM.	2	2	
36-4	103.04-43-06	送布托架联环组件	FEED ROCKER ARM LINK ASM.	2	2	
36-5	103.04-43-07	送布曲柄销	F-ROCKER ARM STUD	1	1	
36-6	103.04-43-03	连杆轴	LINK SHAFT	1	1	
36-7	103.04-43-08	水平送布托架	FEED ROCK ARM	1	1	
36-8	103.04-43-11	长销	LONG PIN	1	1	
36-9	103.04-43-10	短销	SHORT PIN	1	1	
37	14-K252910	滚针轴承 (K25×29×10)	ROLLER BEARING (K25×29×10)	1	1	
38	103.04-47	连杆夹板	HOLDER	1	1	
39	01-435000623-1	螺钉 M3.5×6	SCREW M3.5×6	2	2	
40	103.04-50	切换器轴 L	FEED REGULATOR SHAFT L	1	1	
41	22-14505016	橡皮塞 Φ14.5	RUBBER CAP Φ14.5	1	1	
42	01-806000744-1	螺钉M6×7	SCREW M6×7	1	1	
43	103.04-53	切换器轴R	FEED REGULATOR SHAFT, R	1	1	
44	103.01-09	橡皮塞 Φ15.5	RUBBER CAP Φ15.5	1	1	
45	06-0400809-1	挡圈 E4	RETAINING RING E4	1	1	
46	103.04-66	送布轴轴套 R	FEED SHAFT SCREW, R	1	1	
47	13-14160240	油封	OIL SEAL	1	1	
48	103.04-72	紧圈	TIGHT RING	1	1	
49	103.04-68	送布轴轴套L	FEED SHAFT BUSH, L	1	1	
50	05-151202303-5	送布轴轴套垫圈	THRUST RING	1	1	
51	10-1381017-1	送料轴轴用挡圈	RETAINING RING	1	1	
52	103.04-65-02	油线	FELT LINE	1	1	
53	103.04-65-03	油线 L=160(对折穿)	FELT LINE	1	1	
54	103.04-65-01	水平送布轴	FEED ROCK SHAFT	1	1	
55	14-K202413	滚针轴承 (K20×24×13)	ROLLER BEARING (K20×24×13)	1	1	
56	103.04-76-02	牙架曲柄	FEED BAR CRANK	1	1	
57	01-803000414-1	螺钉 M3×4	SCREW M3×4	2	2	
58	103.04-76-03	送布台短轴	FEED BAR SHORT SHAFT	1	1	
59	05-043101203-5	垫圈 Φ4.6	WASHER Φ4.6	1	1	
60	108.05-60-05	送布台	FEED BAR	1	1	
61	108.05-61	送布牙	FEED DOG	1		
	109.05-61	送布牙1H	FEED DOG 1H		1	
62	02-608440621-1	送料牙螺钉SM1/8×44	SCREW SM1/8×44 L=6.5	2	2	
63	103.04-82	上下送布短轴	LIFTING FEED SHAFT	1	1	
64	01-403000623-1	螺钉 M3×6	SCREW M3×6	2	2	
65	103.04-81-02	偏心轮盖板	FEED BRACKET ARM PRESSER	1	1	

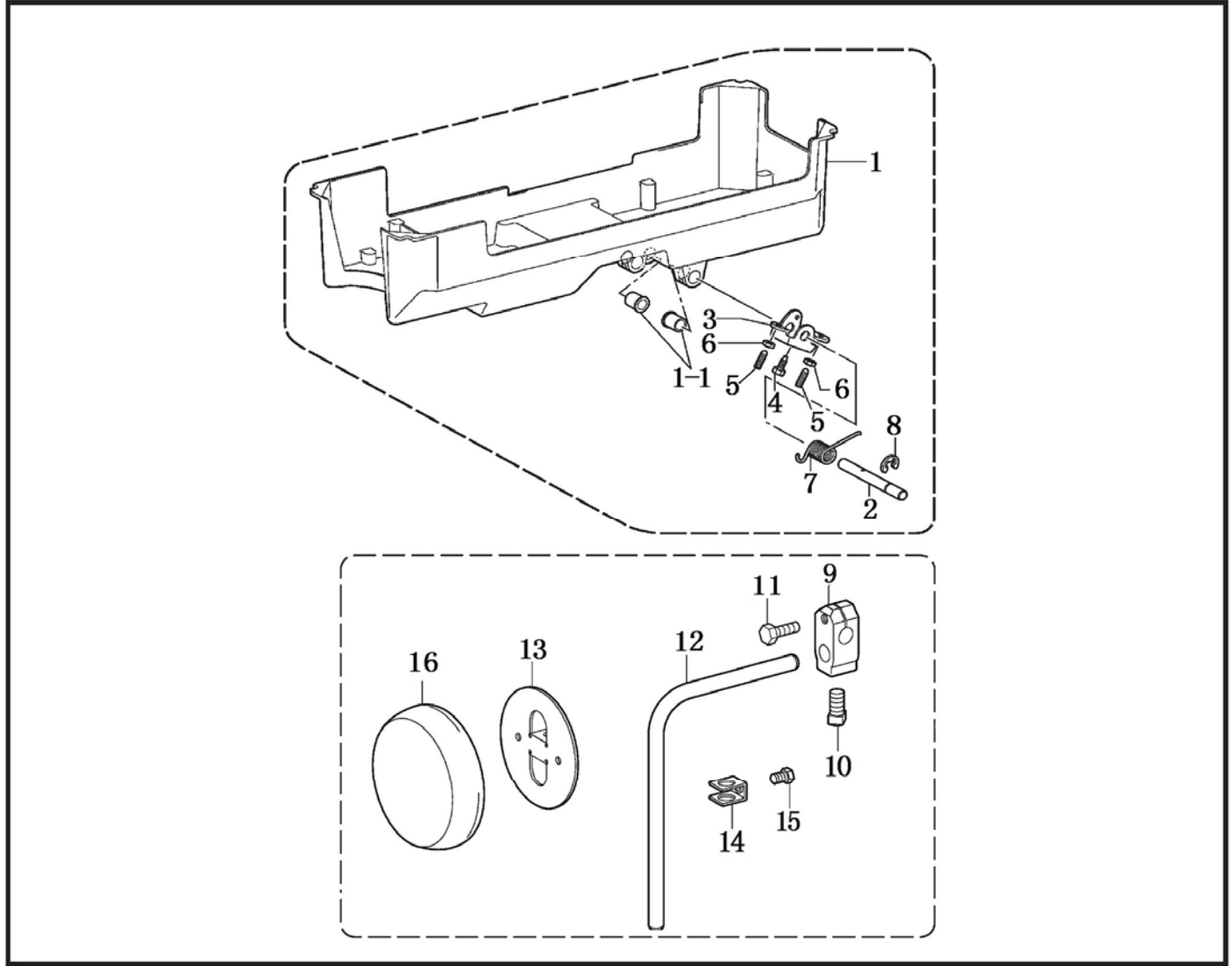
5. 送料装置 / Feed mechanism



5. 送料装置 / Feed mechanism

序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
66	103.04-81-06	偏心轮盖	ECCENTRIC WHEEL COVER	1	1	
67	103.04-81-05	限位环	POSITIONG RING	2	2	
68	103.04-81-01	偏心轮	ECCENTRIC WHEEL	1	1	
69	01-705001625-1	螺栓 M5×16	BOLT M5×16	1	1	
70	03-605000400-1	六角螺母 M5	NUT M5	1	1	
71	01-406001023-1	螺钉M6×10	SCREW M6×10	1	1	
72	103.04-92	安装板	STOPPER SETTING PLATE	1	1	
73	103.04-88	旋钮锁紧杆	LOCK LEVER	1	1	
74	103.04-89	弹簧	SPRING	1	1	
75	108.05-72	拉簧	SPRING	1	1	
76	103.04-100	油管 φ3	OIL TUBE φ3	1	1	

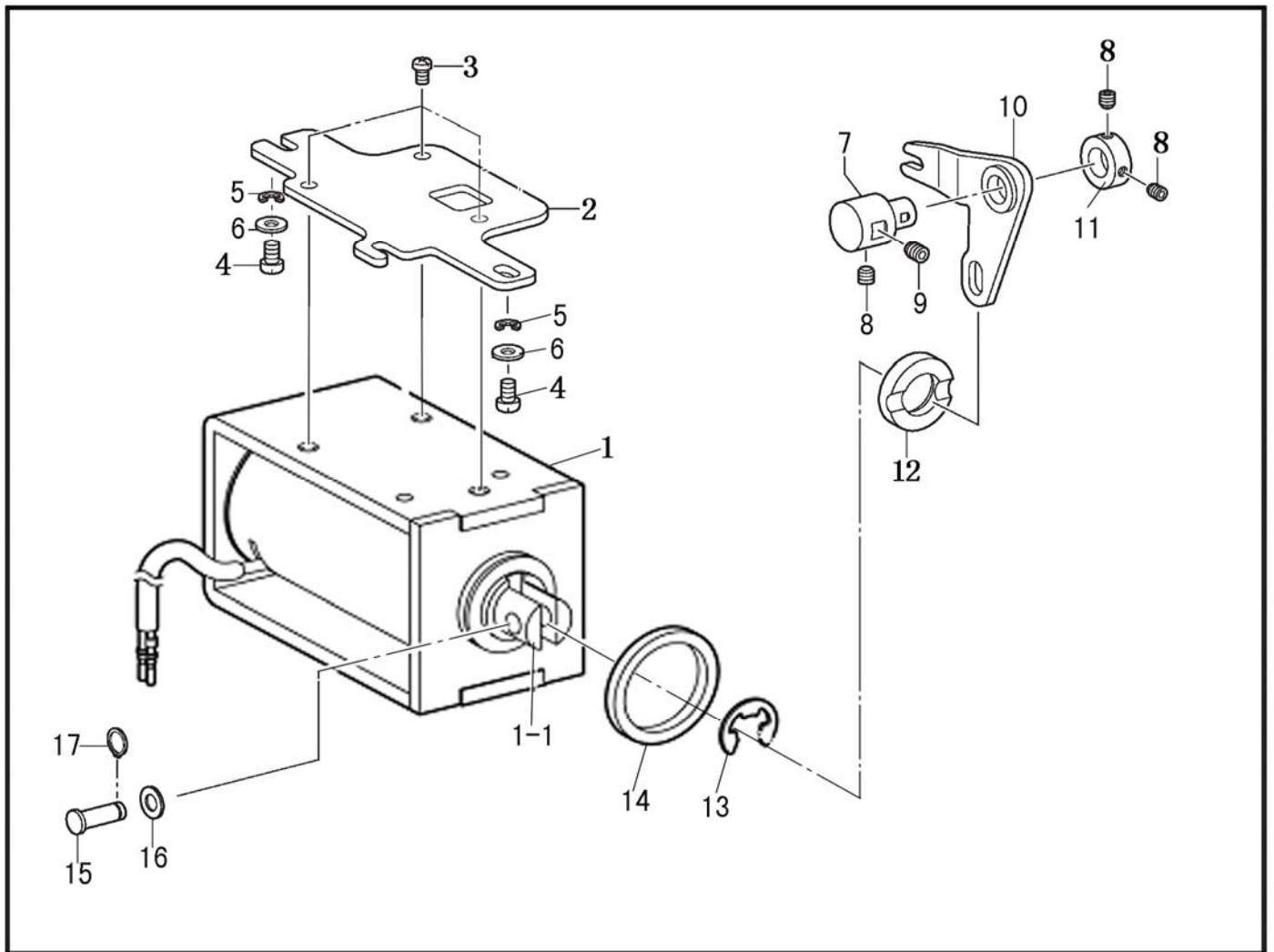
6. 膝控提升装置/Knee lifter mechanism



6. 膝控提升装置/Knee lifter mechanism

序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	103. 08-74-01	油盘	OIL PAN	1	1	组件 组件 组件 组件 组件
1-1	103. 08-74-01-01	轴套	BUSH	2	2	
2	103. 08-74-03	膝控轴R	KNEE LIFTER SHAFT, R	1	1	
3	103. 08-74-05	膝控R	KNEE LIFTER R	1	1	
4	103. 08-74-06	螺钉M6	SCREW M6	1	1	
5	01-806001961-3	螺钉M6×19	SCREW	2	2	
6	03-606000350-4	六角螺母 M6	NUT	2	2	
7	103. 08-74-09	复位弹簧	TWIST SPRING	1	1	
8	06-0901018-1	挡圈E9	RETAINING RING, E9	1	1	
9	101. 10-05-04	抬压脚操纵杆节头	KNEE LIFTER BRACKET	1	1	
10	02-020181425-3	四角型螺栓SM7. 94×1	SQUARE BOLT SM7. 94×14	1	1	
11	02-715282025-3	螺栓 SM5. 95×20	BOLT SM5. 95×20	1	1	
12	101. 10-06-02	操纵杆	KNEE LIFTER BAR	1	1	
13	101. 10-06-04	操纵板	KNEE PAN PLATE	1	1	
14	101. 10-06-05	操纵杆节头	KNEE PAN PLATE SUPPORT	1	1	
15	101. 10-06-06	节头螺钉 SM5. 95×8	SCREW SM5. 95×8	1	1	
16	101. 10-06-01	操纵板软垫	KNEE PAN PLATE COVER	1	1	

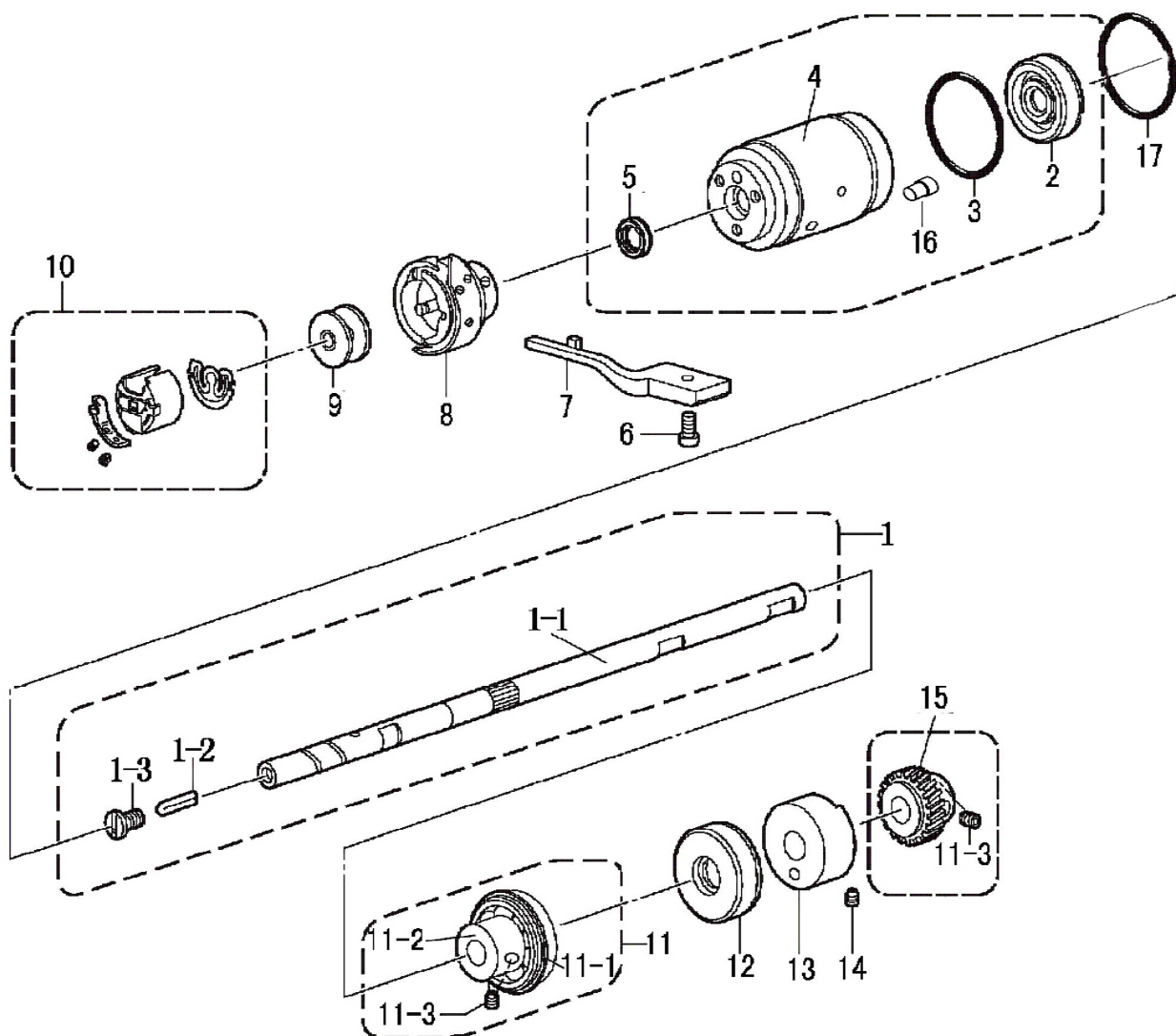
7. 倒缝装置/Quick reverse mechanism



7. 倒缝装置/Quick reverse mechanism

序号 PEF.NO	图 号 PART NO	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	108. 07-01	倒缝电磁铁组件	QUICK REVERSE SOLENOID ASM.	1	1	
1-1	103. 05-01-03	柱塞	PLUNGER	(1)	(1)	
13	103. 05-01-01	挡圈E15	RETAINING RING, E15	(1)	(1)	
14	103. 05-01-02	橡胶垫	RUBBER STOPPER	(1)	(1)	
2	103. 05-02	电磁铁安装板	SOLENOID BASE	1	1	
3	01-405000823-1	螺钉M5×8	SCREW M5X8	3	3	
4	01-406001223-1	螺钉M6×12	SCREW M6X12	2	2	
5	07-0631616-1	螺钉弹性垫圈	WASHER SPING	2	2	
6	05-064161200-1	螺钉平垫圈	PLAIN WASHER	2	2	
7	103. 05-06	曲柄轴	SOLENOID LEVER SHAFT	1	1	
8	01-805000514-1	螺钉	SCREW	3	3	
9	01-806000514-1	螺钉M6×5	SCREW M6X5	1	1	
10	103. 05-05	电磁铁曲柄	SOLENOID LEVER	1	1	
11	103. 05-08	紧圈	SET COLLAR	1	1	
12	103. 05-12	防震垫	RUBBER CUSHION	1	1	
15	103. 05-09	连接销	PIN	1	1	
16	05-064161200-1	垫圈6	WASHER 6	1	1	
17	10-0560612-1	轴用挡圈C6	RETAINING RING, EXTERNAL C6	1	1	

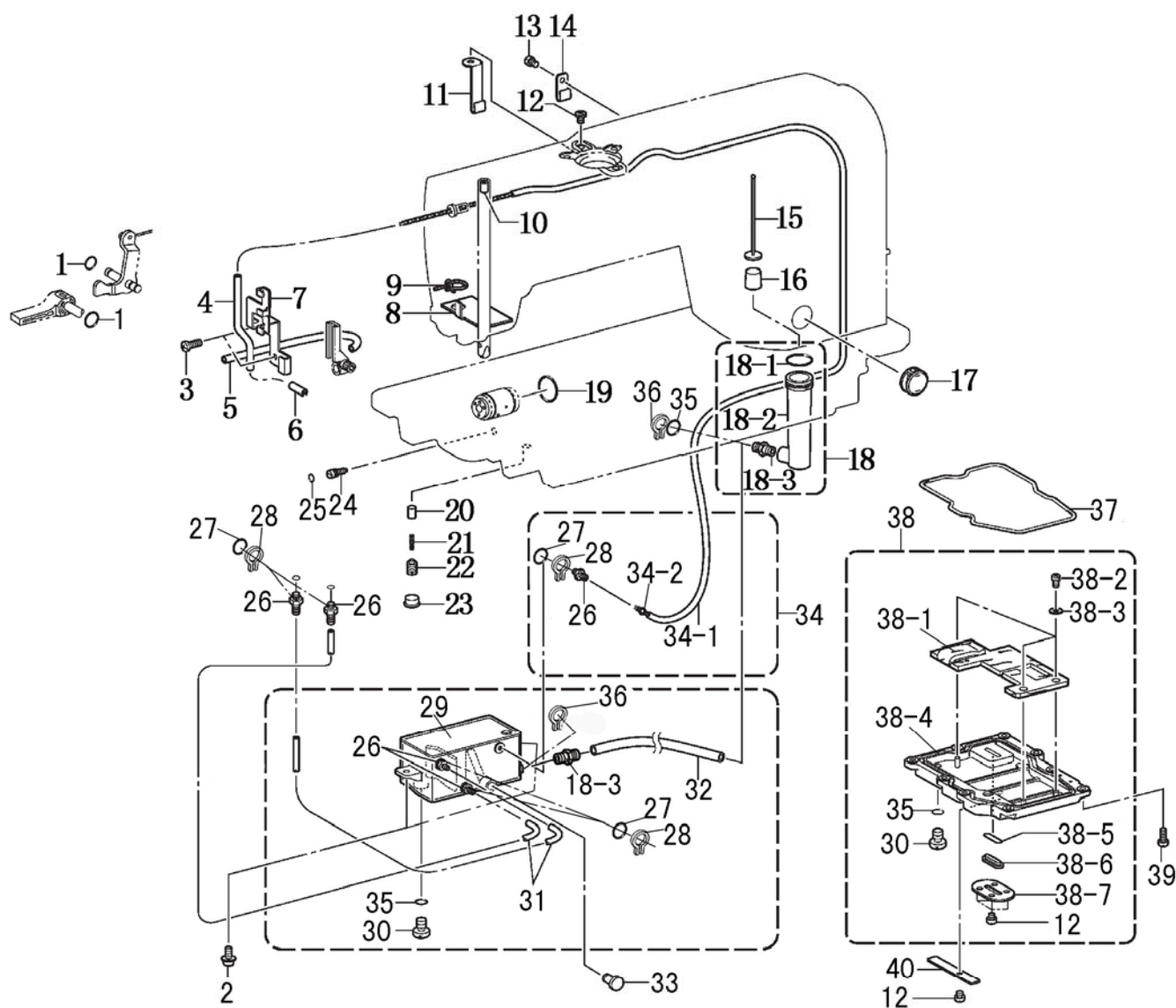
8. 旋梭装置/Rtary hook mechanism



8. 旋梭装置/Rtary hook mechanism

序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1		旋梭轴组件	ROTARY HOOK SHAFT ASSY	(1套)	(1套)	
1-1	103.07-01-03	旋梭轴	ROTARY HOOK SHAFT	1	1	
1-2	101.03-35	下轴限油芯	OIL WICK	1	1	
1-3	103.07-01-01	油盖螺钉 M5×6	SCREW M5×6	1	1	
2	13-07270220	油封	OIL SEAL	1	1	
3	12-248180	O型圈	O RING	1	1	
4	103.07-02-01	油泵轴套	ROTARY HOOK SHAFT	1	1	
5	13-07230120	油封	OIL SEAL	1	1	
6	01-404001223-1	旋梭定位钩螺钉M4X12	HOOK STOPPER SCREW M4×12	1	1	
7	103.07-14	旋梭定位钩	HOOK STOPPER	1	1	
8	103.07-16	旋梭 M	ROTARY HOOK M	1		
	109.08-08	旋梭 H	ROTARY HOOK H		1	
9	103.07-18	梭芯	BOBBIN	1		
	104.07-18	梭芯H	BOBBIN H		1	
10	103.07-17	梭壳组件	ROTARY HOOK ASSY	1	1	
11		轴承轴套组件	BEARING BUSH ASSY	(1套)	(1套)	
11-1	14-61901-2ZN	轴承	BEARING	1	1	
11-2	103.07-03-02	轴承套	BEARING BUSH	1	1	
11-3	01-806750614-1	固定螺钉 M6×6	SET SCREW M6×6	4	4	
12	13-07260240	油封	OIL SEAL	1	1	
13	103.07-05	旋梭轴齿轮轴套	ROTARY HOOK SHAFT GEAR BUSH	1	1	
14	01-806000514-1	螺钉M6×5	SCREW M6×5	1	1	
15	103.07-07	旋梭轴齿轮	ROTARY HOOK SHAFT GEAR	1	1	
16	22-04105005	孔塞	HOLE PLUG	1	1	
17	12-280180	O型圈	O RING	1	1	

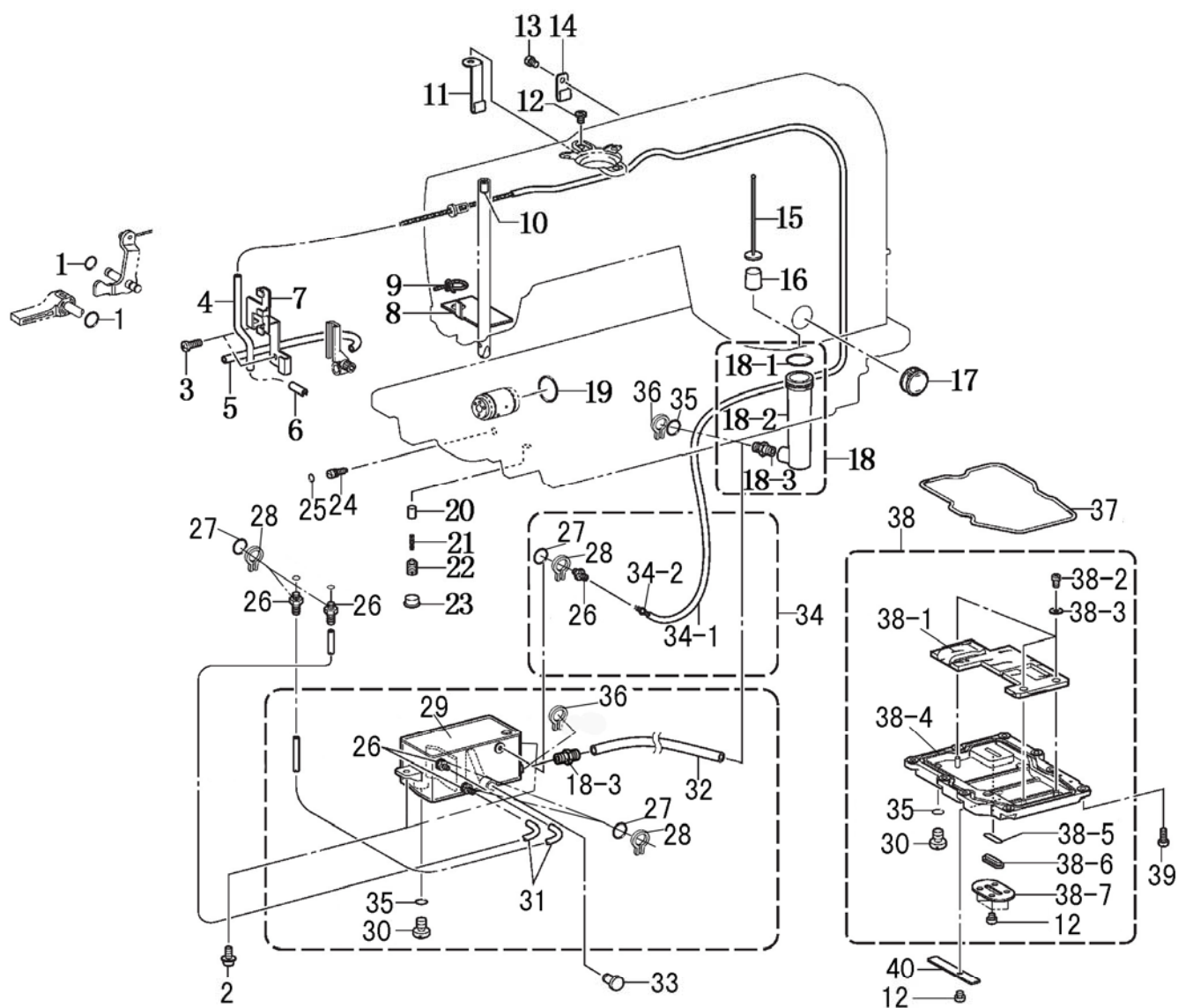
9. 供油润滑装置/Lubrication



9. 供油润滑装置/Lubrication

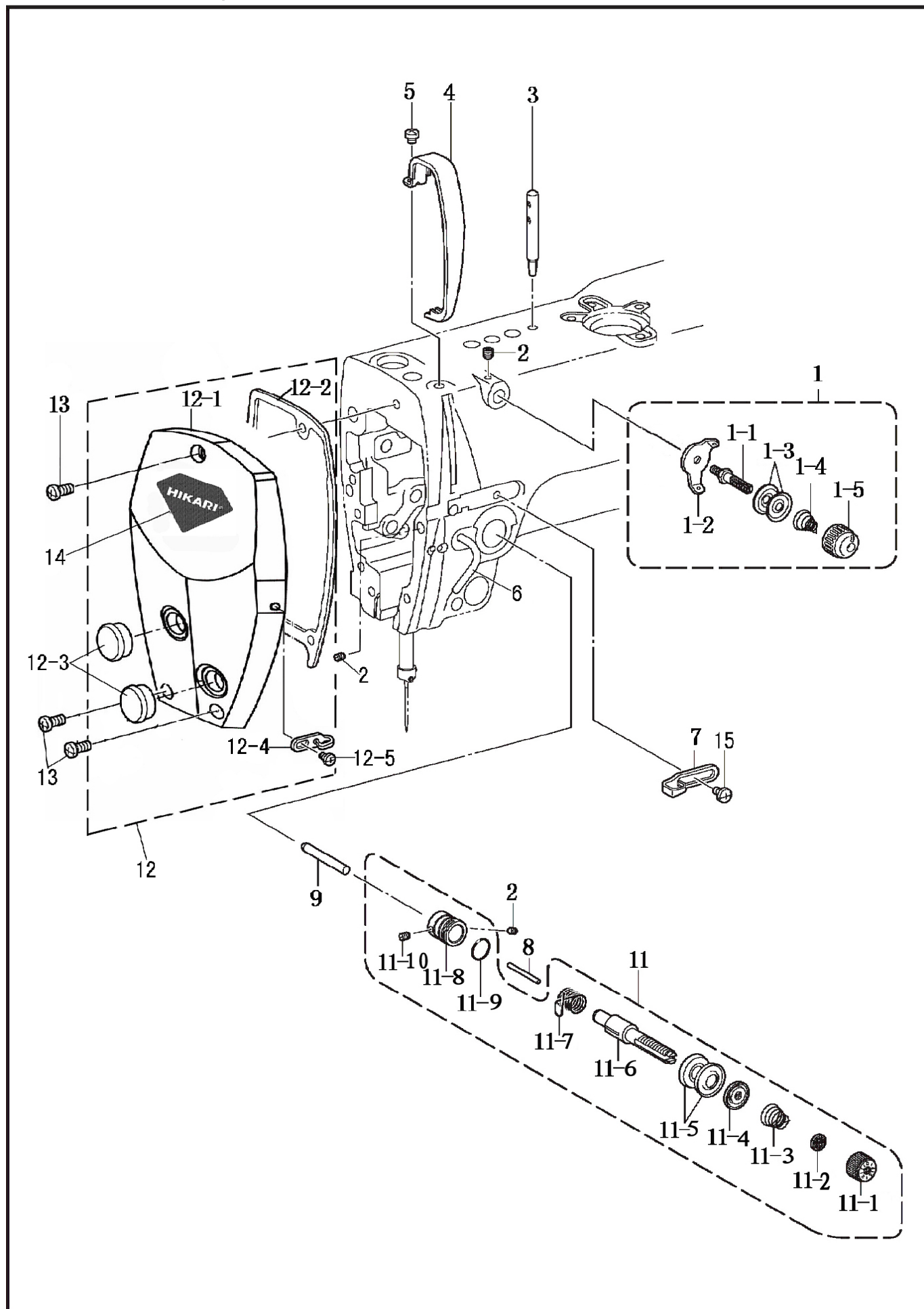
序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	12-038180	O型圈	O RING	2	2	
2	18-405001223-4	螺栓 M5×12	BOLT M5×12	2	2	
3	01-505001021-1	螺钉 M5×10	SCREW PAN M5×10	2	2	
4	108.09-04	维尼龙管	VINYL TUBE	1	1	
5	108.09-05	维尼龙管	VINYL TUBE	1	1	
6	108.09-06	油线夹	WICK SUPPORT	1	1	
7	108.09-07	管导向	TUBE GUIDE	1	1	
8	108.09-08	油毡	FELT	1	1	
9	108.09-09	滤油毡压簧	FELT SUPPORT SPRING	1	1	
10	103.08-11	针杆软木塞	NEEDLE BAR CORK	1		
	104.08-11	针杆软木塞	NEEDLE BAR CORK		1	
11	108.09-11	油管支架 L	TUBE HOLDER L	1	1	
12	01-405000623-1	螺钉 M5×6	SCREW PAN M5×6	6	6	
13	01-404000523-1	螺钉 M4×5	SCREW BIND M4×5	1	1	
14	108.09-14	油管支架 R	TUBE HOLDER R	1	1	
15	103.08-56	测油杆	OIL GAGE	1	1	
16	103.08-55	测油浮标	FLOAT	1	1	
17	103.08-59	油量视窗	OIL GAUGE WINDOW	1	1	
18		副油管组件	SUB TANK ASSY	(1套)	(1套)	
18-1	12-220150	O型圈	O RING	1	1	
18-2	103.08-54-1	副油罐	SUB TANK	1	1	
18-3	103.08-34	供油口	OIL FEEDING PIPE	2	2	
19	12-280180	O型圈	O RING	1	1	
20	103.08-27	柱塞	PLUNGER	1	1	
21	103.08-29-2	柱塞弹簧	SPRING, COMPRESSION	1	1	
22	103.08-29-1	泵盖螺钉	CAP SCREW	1	1	
23	103.08-30	橡皮塞Φ10.5	RUBBER CAP, 10.5	1	1	
24	103.08-31	油量调节螺钉	ADJUSTING SCREW	1	1	
25	12-036140	O型圈	O RING	1	1	
26	103.08-33	供油口	OIL FEEDING PIPE	5	5	
27	103.08-36-01-10	密封垫	RING	5	5	
28	103.08-36-01-08	油管夹Φ5	OIL TUBE HOLDER Φ5	5	5	
29	103.08-36-01-01	油箱	OIL TANK	1	1	
30	01-608001021-1	螺钉 M8×10	SCREW M8×10	2	2	
31	103.08-36-1-4A	油管 Φ3×Φ5	OIL TUBE Φ3×Φ5	2	2	
32	103.08-36-1-2A	油管 Φ6×Φ8	OIL TUBE Φ6×Φ8	1	1	
33	103.01-08	橡皮塞 Φ8	RUBBER CAP Φ8	1	1	
34		油管组件	OIL TUBE ASSY	(1套)	(1套)	
34-1	108.09-28-01	油管	OIL TUBE	1	1	
34-2	108.09-28-02	油线	WICK	1	1	
35	12-075180	Φ8油管密封圈	Φ8 OIL TUBE RING	3	3	
36	103.08-36-01-09	油管夹Φ10	OIL TUBE HOLDER Φ10	2	2	
37	103.08-65	密封垫圈	RING	1	1	
38		底板侧盖总组件	BED BOTTOM COVER UNIT	(1套)	(1套)	
38-1	103.08-64-2	侧盖垫毡	BOTTOM COVER FELT	1	1	
38-2	01-404000623-1	螺钉 M4×6	SCREW M4×6	3	3	

9. 供油润滑装置/Lubrication



9. 供油润滑装置/Lubrication

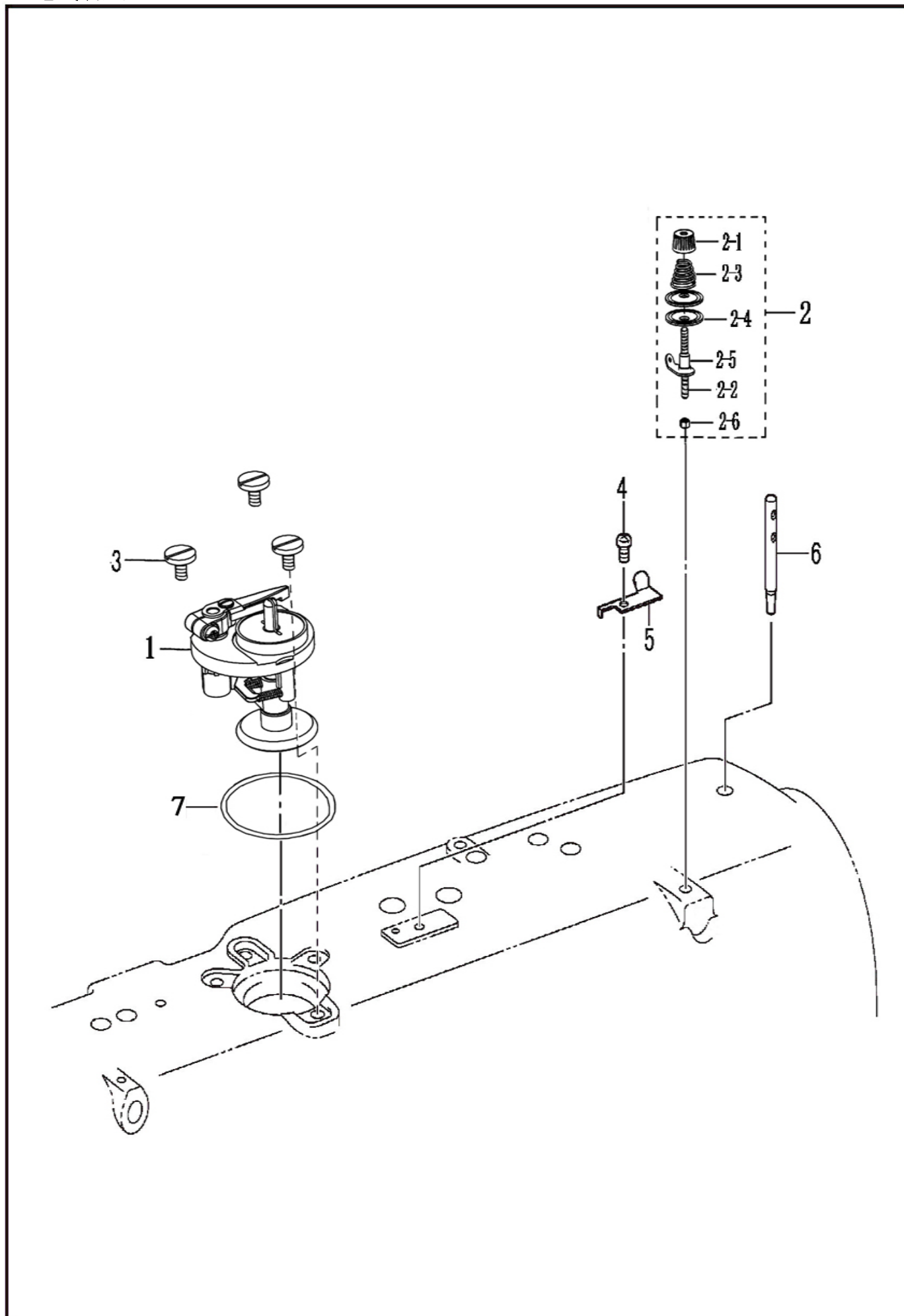
序号 PEF. NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
38-3	05-045101200-1	平垫圈 Φ4	WASHER PLAIN Φ4	3	3	
38-4	103.08-64-1	底板侧盖	BED BOTTOM COVER	1	1	
38-5	12-150150	O型圈	O RING	1	1	
38-6	103.08-64-1-1	底板油窗	OIL WINDOW, B-COVER	1	1	
38-7	103.08-64-1-3	窗盖	WINDOW COVER	1	1	
39	01-405001223-1	螺钉 M5×12	SCREW M5×12	9	9	
40	103.08-68	压板	CORD HOLDER PLATE	1	1	



10穿线装置/Threading mechanism

序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	110.01-21G	调线夹线器组件	PRE-TENSION ASSY	1套	1套	
1-1	110.01-21-01G	调线夹线螺钉	THREAD TENSION POST	(1)	(1)	
1-2	110.01-23G	夹线过线板	THREAD TENSION GUIDE	(1)	(1)	
1-3	101.01-21-03	小夹线板	THREAD TENSION DISK	(2)	(2)	
1-4	101.01-21-04	小夹线簧	THREAD TENSION SPRING	(1)	(1)	
1-5	101.01-21-05	小夹线螺母	THREAD TENSION NUT	(1)	(1)	
2	01-805000514-1	螺钉 M5×5	SCREW M5×5	3	3	
3	103.09-04	穿线杆	SPOOL PIN	1	1	
4	103.09-12	挑线杆防护罩	THREAD TAKE-UP LEVER COVER	1	1	
5	01-405000623-1	螺钉 M5×6	SCREW M5×6	1	1	
6	108.10-18	线导向勾	THREAD GUIDE	1	1	
7	103.09-10	机壳线导向	ARM THREAD GUIDE	1	1	
8	113.09-05	松线销	TENSION RELEASE PIN	1	1	
9	103.09-07	松线杆	TENSION RELEASE STUD	1	1	
11	101.01-27	夹线器组件	THREAD TENSION BRACKET ASSY	1套		
	116.01-27	夹线器组件	THREAD TENSION BRACKET ASSY		1套	
11-1	101.01-27-01	夹线螺母	TENSION NUT	(1)	(1)	
11-2	101.01-27-02	夹线制动板	ROTATING STOPPER	(1)	(1)	
11-3	101.01-27-03	夹线簧	TENSION SPRING	(1)		
	114.09-01-01	夹线簧	TENSION SPRING		(1)	
11-4	101.01-27-04	松线板	THREAD TENSION DISK PRESSER	(1)	(1)	
11-5	101.01-27-05	夹线板	THREAD TENSION DISK	(2)	(2)	
11-6	101.01-27-06	夹线螺钉	TENSION POST	(1)	(1)	
11-7	101.01-27-07	挑线簧	TAKE-UP SPRING	(1)		
	116.01-27-07	挑线簧	TAKE-UP SPRING		(1)	
11-8	101.01-27-09	挑线簧调节座	TENSION POST SOCKET	(1)	(1)	
11-9	12-137160	挑线簧调节座O型圈	RUBBER RING	(1)	(1)	
11-10	02-909400421-1	螺钉	SCREW	(1)	(1)	
12		机头面板组件	FACE PLATE ASSY	(1套)	(1套)	
12-1	108.10-12-01	机头面板	FACE PLATE	1	1	
12-2	108.10-12-02	面板垫	FACE PLATE PACKING	1	1	
12-3	22-15505017	橡皮塞 Φ15.5	RUBBER CAP Φ15.5	2	2	103.01-09
12-4	103.09-14-03	面板线钩	FACE PLATE THREAD GUIDE	1	1	
12-5	01-435000623-1	螺钉 M3.5×6	SCREW M3.5×6	1	1	
13	01-405001823-1	螺钉M5×18	SCREW M5×18	3	3	
14	102.01-01-01	面板贴	FACE PLATE STICK	1	1	
15	19-405000823-1	螺钉 M5×8	SCREW M5×8	1	1	

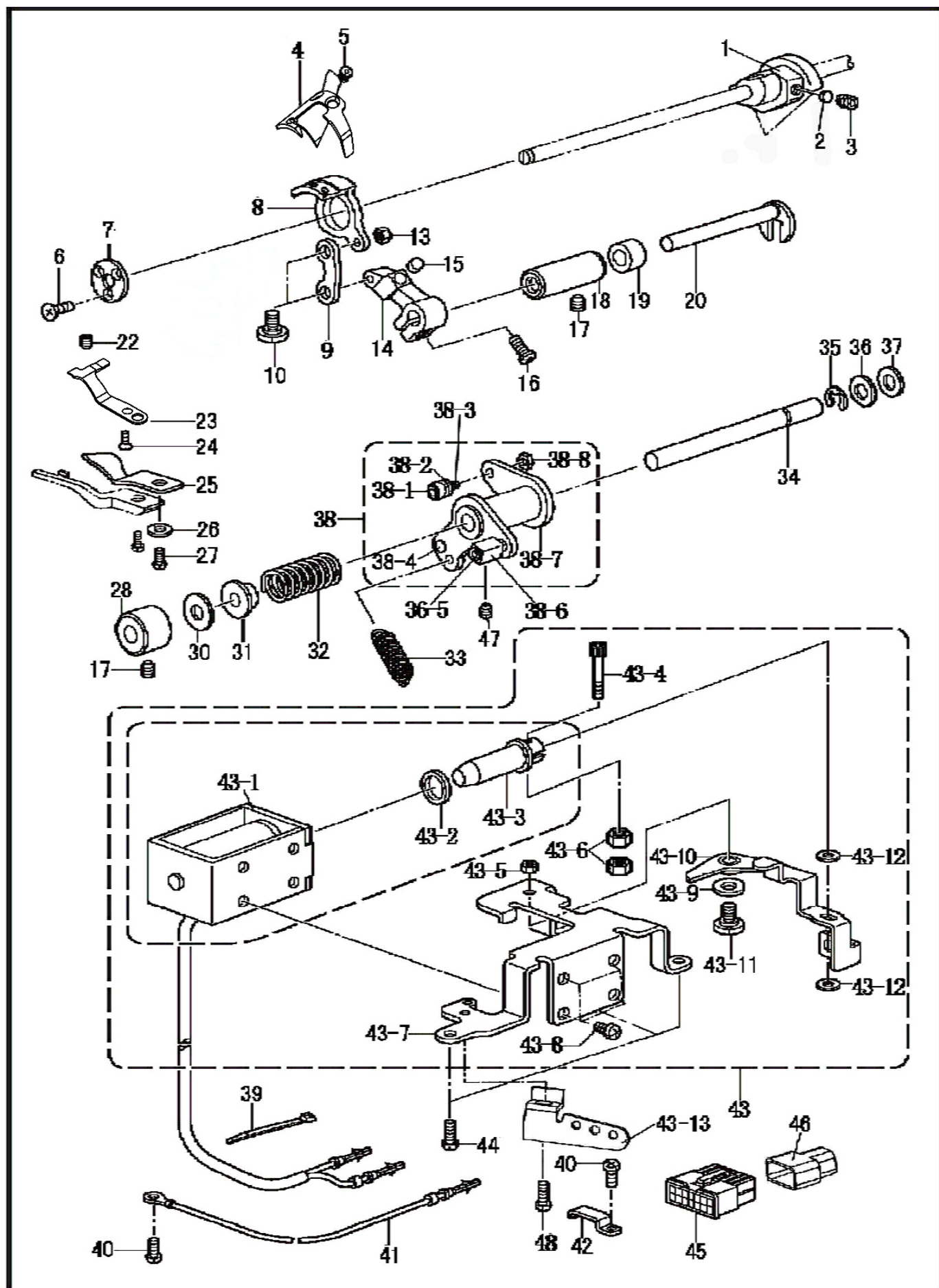
11. 卷线装置/Bobbin winder mechanism



11. 卷线装置/Bobbin winder mechanism

序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	102. 09-32	绕线器组件	BOBBIN WINDER UNIT	1套	1套	
2	102. 09-36	夹器线组件	BOBBIN WINDER TENSION ASSY	1套	1套	
2-1	102. 09-36-01	夹线螺母	NUT	(1)	(1)	
2-2	102. 09-36-02	夹线螺钉	SCREW	(1)	(1)	
2-3	102. 09-36-03	夹线簧	SPRING	(1)	(1)	
2-4	102. 09-36-04	夹线板	THREAD TENSION DISK	(2)	(2)	
2-5	102. 09-36-05	调线过线板	THREAD TENSION GUIDE	(1)	(1)	
2-6	102. 09-36-06	夹线螺母 (下)	NUT	(1)	(1)	
3	02-612320721-1	绕线器螺钉	BOBBIN WINDER SCREW	3	3	
4	01-405000623-1	螺钉 M5×6	SCREW M5×6	1	1	
5	103. 10-21	切刀	KNIFE	1	1	
6	103. 09-04	穿线杆	SPOOL PIN	1	1	
7	102. 09-42	绕线轮垫圈	WASHER	1	1	

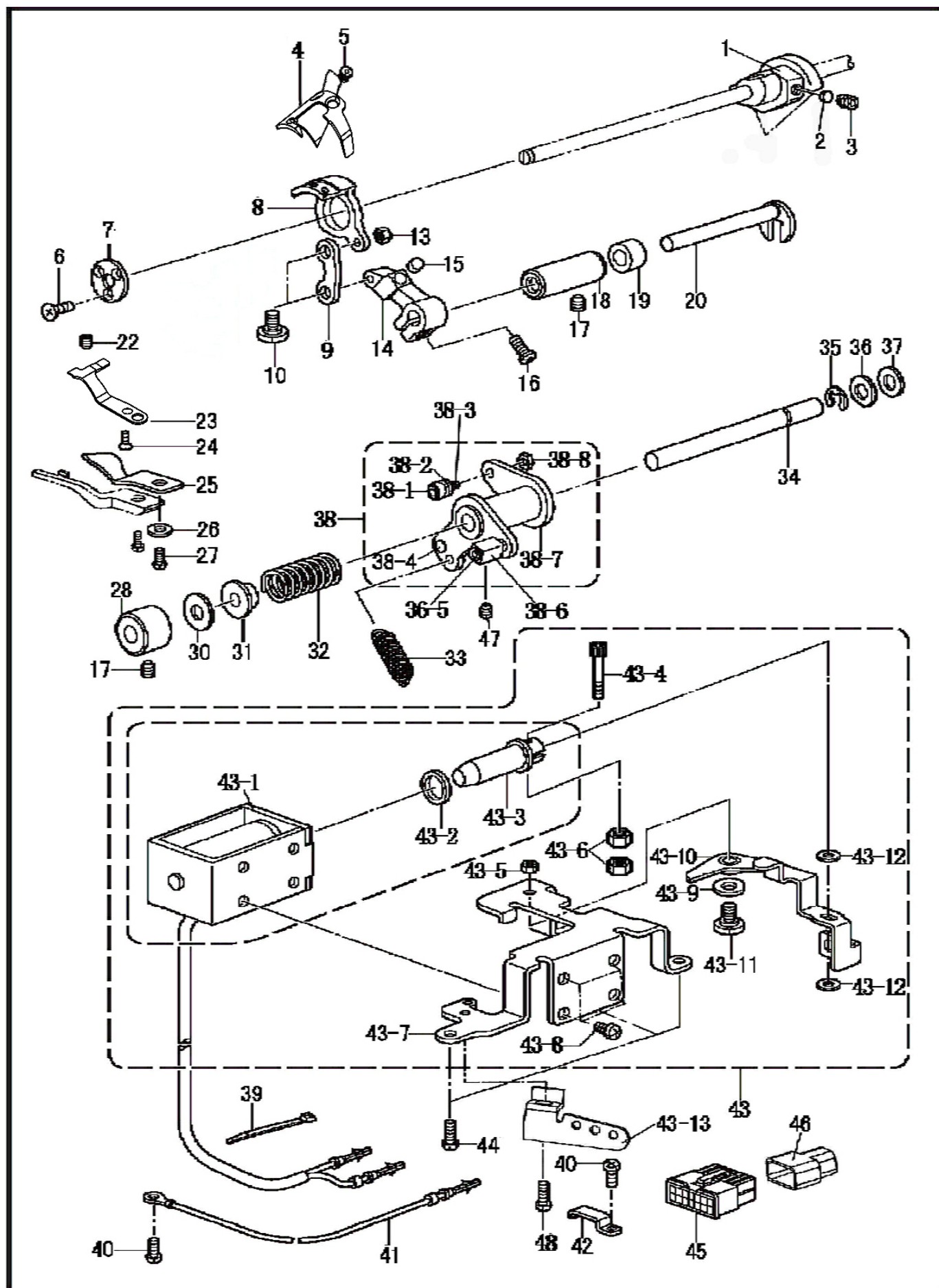
12. 切线装置/Thread trimmer mechanism



12. 切线装置/Thread trimmer mechanism

序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	103.11-01	切线凸轮	THREAD TRIMMER CAM	1	1	
2	103.02-31	垫片	SPACER	2	2	
3	02-816401014-1	螺钉 SM1/4×40 L=10	SCREW SM1/4×40 L=10	2	2	
4	102.06-13	活动刀	MOVABLE KNIFE	1	1	
5	02-111400524-1	活动刀固定螺钉	MOVABLE KNIFE SCREW	2	2	
6	01-103001021-1	螺钉 M3×10	SCREW M3×10	3	3	
7	103.11-13	切线架压板	KNIFE HOLDER PRESSER PLATE	1	1	
8	103.11-09-01	切线架	THREAD TRIMMER HOLDER	1	1	
9	103.11-09-02	切线连杆	THREAD TRIMMER CONNECTING ROD	1	1	
10	103.11-09-03	轴位螺钉	SCREW	2	2	
13	03-604000320-1	螺母 M4	NUT M4	1	1	
14	103.11-09-05G	切线曲柄	THREAD TRIMMER LEVER	1	1	
15	103.11-09-06G	止动块	LEVER STOPPER	1	1	
16	01-405001423-1	螺钉 M5×14	SCREW M5×14	1	1	
17	01-806000514-1	固定螺钉 M6×5	SET SCREW M6×5	2	2	
18	102.06-24	切线轴套	FORKED SHAFT BUSH	1	1	
19	103.11-65	驱动曲柄轴短套	COLLAR	1	1	
20	102.06-22	切刀驱动曲柄轴	FORKED SHAFT	1	1	
22	02-808440624-1	螺钉 SM1/8×44×6	SET SCREW SOCKET SM1/8×44×6	1	1	
23	102.06-04	固定刀	FIXED KNIFE	1	1	
24	02-209400521-1	螺钉	SCREW	1	1	
25	102.06-06	分线器	LOWER THREAD FINGER	1	1	
26	103.11-35	橡胶垫圈	WASHER PLAIN	1	1	
27	01-404000623-1	螺钉 M4×6	SCREW PLAN M4×6	1	1	
28	103.11-40	凸轮曲柄轴套	CAM LEVER SHAFT BUSH	1	1	
30	103.11-35	橡皮垫圈	RUBBER RING	1	1	
31	102.06-31	扭簧端盖	TORSIONAL SPRING END SHROUD	1	1	
32	103.11-36	切线凸轮复位弹簧	RUBBER CUSHION	1	1	
33	108.12-36	弹簧	SPRING	1	1	
34	103.11-33	切刀驱动轴	THREAD TRIMMER CAM LEVER SHAFT	1	1	
35	06-0601012-1	挡圈 E6	RETAINING RING E6	1	1	
36	05-081081553-5	垫圈	WASHER	1	1	
37	103.11-37	减震垫圈	CUSHION	1	1	
38	103.11-30-00	剪线曲柄组件	THERAD TRIMMER LEVER UNIT	1套	1套	
38-1	103.11-30-02-03	滚轮	ROLLER	(1)	(1)	
38-2	103.11-30-02-02	垫片	WASHER	(1)	(1)	
38-3	103.11-30-02-01	滚轮轴位螺钉	SHOULDER SCREW	(1)	(1)	
38-4	103.11-30-04	限位销	LIMIT PLACE PIN	(1)	(1)	
38-5	103.11-30-05-02	滑块轴	SLIDE SHAFT	(1)	(1)	
38-6	102.06-26-2-2	滑块	SLIDE	(1)	(1)	
38-7	103.11-30-01	切线凸轮曲柄	THREAD TRIMMER LEVER	(1)	(1)	
38-8	04-611400300-1	螺母	NUT	(1)	(1)	
39	103.11-63	线夹	BAND	1	1	

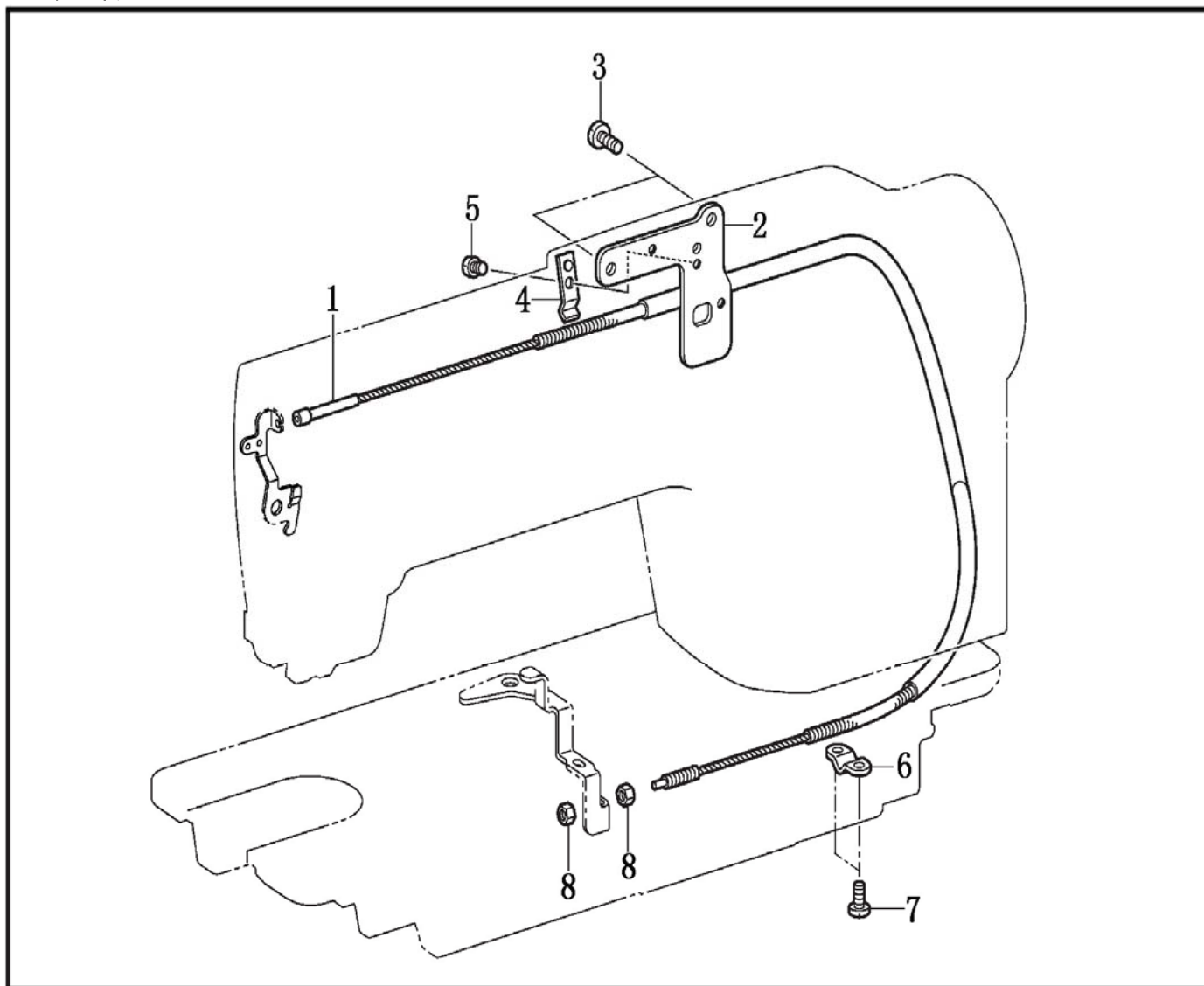
12. 切线装置/Thread trimmer mechanism



12. 切线装置/Thread trimmer mechanism

序号 PEF.NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
40	01-405000823-1	螺钉 M5×8	SCREW PAN M5×8	2	2	
41	101.01-40	接地线组件	GROUND WIRE ASM.	1	1	
42	103.11-64	线夹 U3	CORD HOLDER U3	1	1	
43		切线电磁铁组件	THREAD TRIMMER SOLENOID ASSY	(1套)	(1套)	
43-1	103.11-42-01	切线电磁铁	THREAD TRIMMER SOLENOID	1	1	
43-2	103.11-42-01-02	橡皮垫圈	RUBBER CUSHION	1	1	
43-3	103.11-42-01-01	电磁铁芯	SOLENOID PLUNGER	1	1	
43-4	01-504002224-1	螺栓 M4×22	BOLT M4×22	1	1	
43-5	03-606000350-1	螺母 M6	NUT M6	1	1	
43-6	03-604000320-1	螺母 M4	NUT M4	2	2	
43-7	103.11-42-02	切线电磁铁架	THREAD TRIMMER SOLENOID BASE	1	1	
43-8	01-404000823-1	螺钉 M4×8	SCREW PAN M4×8	4	4	
43-9	05-064161200-1	电磁铁紧固螺钉平垫	WASHER, PLAIN	1	1	
43-10	108.12-43-11	电磁铁杆	SOLENOID LEVER	1	1	
43-11	108.12-43-13	段螺钉 M6	SHOLDER SCREW M6	1	1	
43-12	103.11-42-05	消音垫片	SILENT SHEET	2	2	
43-13	108.12-43-14	拉簧挂片	PULL SPING POTHOOK	1	1	
44	01-405001223-1	螺钉 M5×12	SCREW PAN M5×12	3	3	
45	101.06-21	插头座	CONNECTOR,	1	1	
46	101.06-22	插头座防护罩	GROUND WIRE ASM.	1	1	
47	01-806000614-1	螺钉 M6×6	SET SCREW M6×6	1	1	
48	01-405000623-1	螺钉 M5×6	SCREW PAN M5×6	1	1	

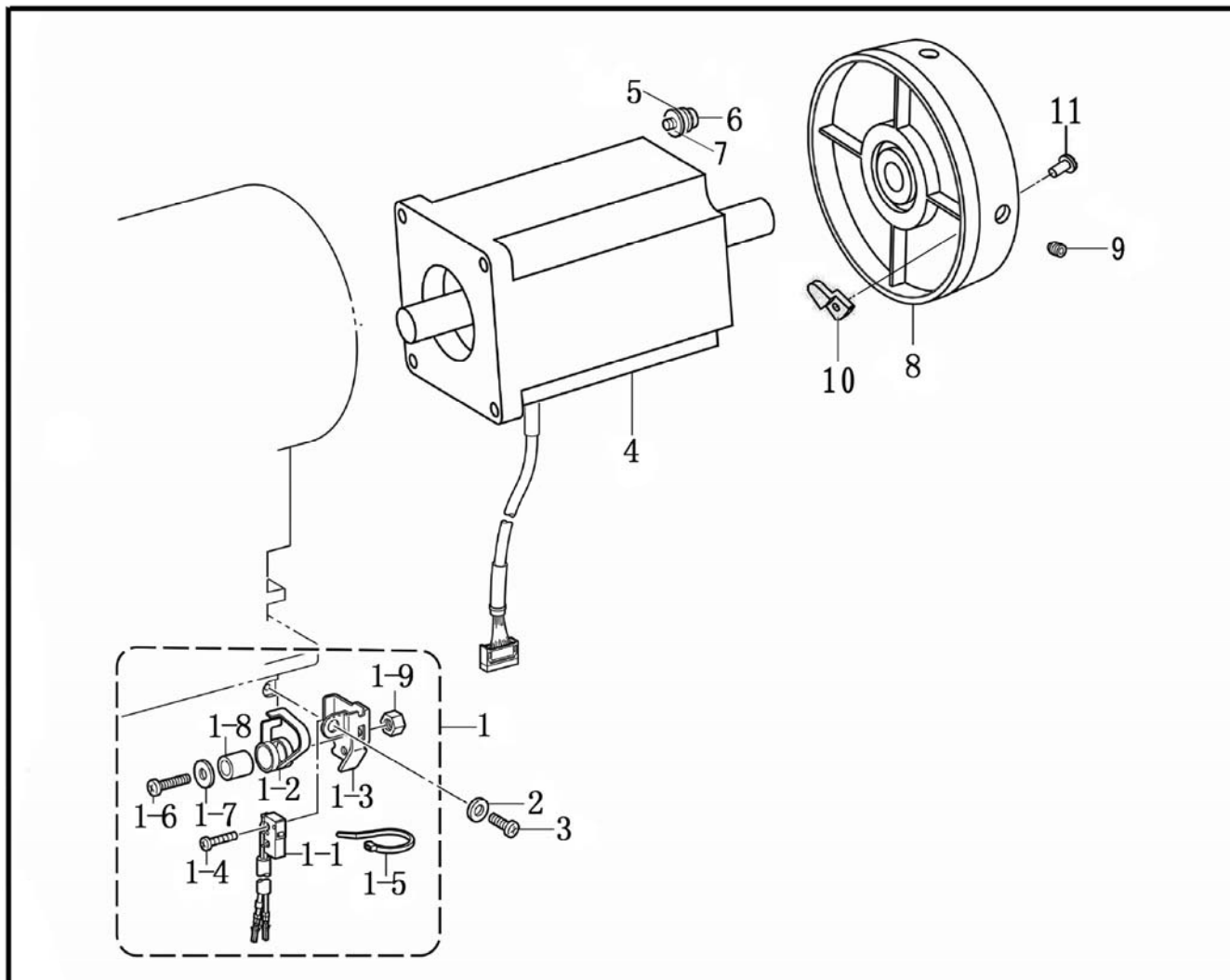
13. 松线装置/Tension release mechanism



13. 松线装置/Tension release mechanism

序号 PEF. NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	103.06-01	松线电线	TENSION RELEASE WIRE	1	1	
2	108.13-02	钢绳固定板 U	WIRE HOLDER U	1	1	
3	01-405000823-1	螺钉 M5×8	SCREW PAN M5×8	2	2	
4	103.06-04	线夹 U	WIRE HOLDER U	1	1	
5	01-404000523-1	螺钉 M4X5	SCREW M4X5	1	1	
6	103.06-06	钢绳固定板D	WIRE HOLDER, D	1	1	
7	01-404000823-1	螺钉 M4×8	SCREW M4×8	2	2	
8	04-612320300-1	螺母 SM3/16×32	NUT SM3/16×32	2	2	

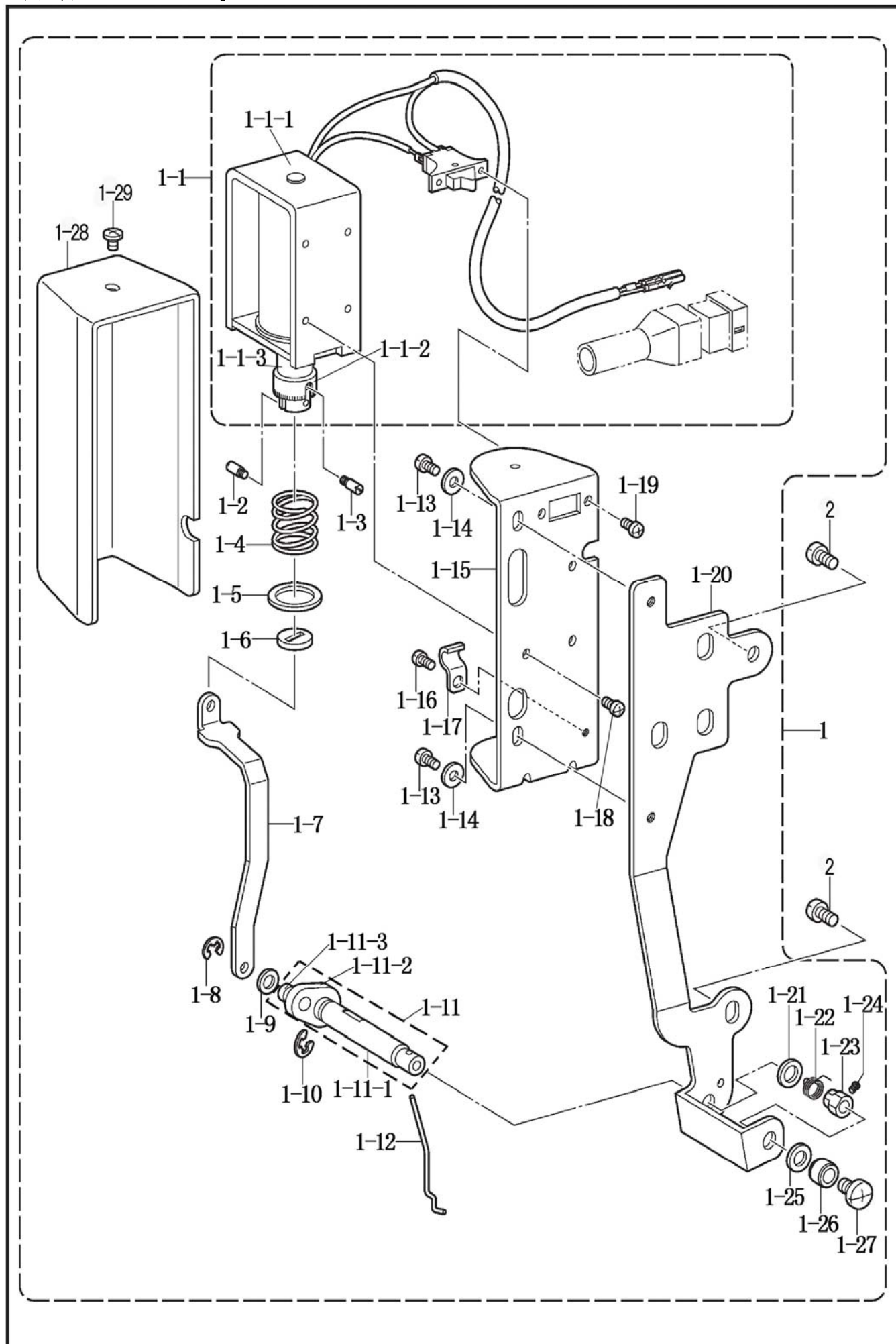
14. 马达装置/Motor mechanism



14. 马达装置/Motor mechanism

序号 PEF. NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	103. 13-11	安全开关组件	SAFETY SWITCH ASSY.	1套	1套	
1-1	103. 13-11-01	微处理开关组件	MICRO SWITCH ASM.	(1)	(1)	
1-2	103. 13-11-02	板弹簧	SWITCH PLATE SPRING	(1)	(1)	
1-3	103. 13-11-03	开关基座	SWITCH BASE	(1)	(1)	
1-4	01-402000823-4	螺钉 M2×8	SCREW, PAN M2×8	(2)	(2)	
1-5	103. 13-11-05	线夹 1M	BAND, 1M	(1)	(1)	
1-6	01-404001223-4	螺钉 M4×12	SCREW, PAN M4×12	(1)	(1)	
1-7	05-043080900-4	平垫圈 M4	WASHER, PLAIN M4	(1)	(1)	
1-8	103. 13-11-08	衬垫	SPACER	(1)	(1)	
1-9	03-604000300-4	六角螺母M4	NUT M4	(1)	(1)	
2	05-064131100-1	垫圈6	WASHER 6	1	1	
3	01-406000823-1	螺钉 M6×8	SCREW, PAN M6×8	1	1	
4	103. 13-100G	直驱电机组件	MOTOR ASSY.	1	1	
5	07-0521313-1	电机安装螺钉弹簧垫片	WASHER	4	4	
6	01-505001824-1	螺钉 M5x18	SCREW M5x16	4	4	
7	05-053101000-1	平垫片	WASHER	4	4	
8	103. 13-106G	手轮组件	PULLEY ASSY	1	1	
9	02-815281014-1	螺钉 SM15/64×28	SCREW SM15/64×28	2	2	
10	103. 13-107	磁钢	MAGNETS	1	1	
11	18-404000823-3	磁钢固定螺钉	SCREW	1	1	

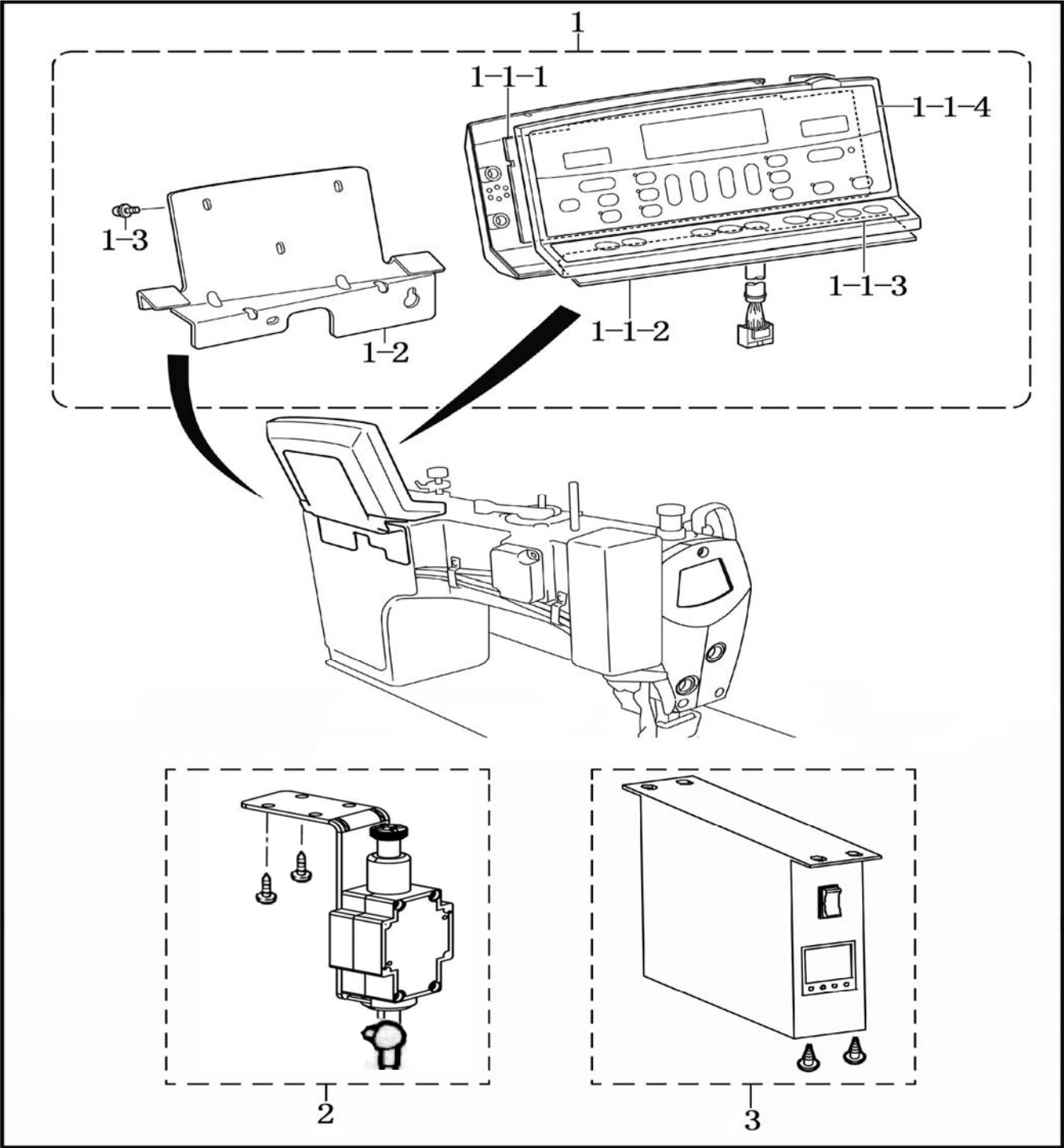
15. 扫线装置/Thread wiper mechanism



15. 扫线装置/Thread wiper mechanism

序号 PEF. NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	103.12-01	扫线装置组件	THREAD WIPER DEVICE ASSY	1套	1套	
1-1		扫线电磁铁组件	THREAD WIPER SOLENOID ASSY	(1套)	(1套)	
1-1-1	103.12-01-01	扫线电磁铁	THREAD WIPER SOLENOID	(1)	(1)	
1-1-2	103.12-01-30	柱塞	PLUNGER	(1)	(1)	
1-1-3	103.12-01-31	缓冲套	BUFFER SET	(1)	(1)	
1-2	103.12-01-22	柱塞销	PLUNGER PIN	(1)	(1)	
1-3	103.12-01-22	柱塞销	PLUNGER PIN	(2)	(2)	
1-4	103.12-01-02	扫线弹簧	THREAD WIPER SPRING	(1)	(1)	
1-5	103.12-01-03	平垫圈	WASHER PLAIN	(1)	(1)	
1-6	103.12-01-27	橡皮垫圈	SPACER RUBBER	(1)	(1)	
1-7	103.12-01-19	扫线连杆	THREAD WIPER ROD	(1)	(1)	
1-8	103.12-01-21	挡圈 E3	RETAINING RING E3	(1)	(1)	
1-9	103.12-01-20	垫圈	WASHER	(1)	(1)	
1-10	101.06-10-16	挡圈 E4	E-RING E4	(1)	(1)	
1-11	103.12-01-14	扫线曲轴组件	THREAD WIPER CRANK ASSY	(1套)	(1套)	
1-11-1	103.12-01-14-01	送线轴	THREAD WIPER CRANK	(1)	(1)	
1-11-2	103.12-01-14-03	拔线凸轮	LIFT SHREAD CAM	(1)	(1)	
1-11-3	103.12-01-14-02	拔线销	LIFT SHREAD PIN	(1)	(1)	
1-12	103.12-01-23	扫线杆	THREAD WIPER	(1)	(1)	
1-13	01-404000623-4	螺钉 M4×6	SCREW PAN M4×6	(2)	(2)	
1-14	103.03-14-04	平垫圈 Φ4	WASHER Φ4	(2)	(2)	
1-15	103.12-01-04	电磁铁安装板	SOLENOID SETTING PLATE	(1)	(1)	
1-16	01-403000623-4	螺钉 M3×6	SCREW PAN M3×6	(1)	(1)	
1-17	103.12-01-06	电线固定夹	CORD HOLDER	(1)	(1)	
1-18	01-403000623-4	螺钉 M3×6	SCREW PAN M3×6	(1)	(1)	
1-19	01-403000623-4	螺钉 M3×6	SCREW PAN M3×6	(1)	(1)	
1-20	103.12-01-09	电磁铁基座	THREAD WIPER BASE	(1)	(1)	
1-21	103.12-01-28	消音垫	SILENT SHEET	(1)	(1)	
1-22	103.12-01-18	弹簧	SPRING	(1)	(1)	
1-23	103.12-01-16	螺纹紧圈	SET SCREW COLLAR	(1)	(1)	
1-24	01-935000511-3	螺钉 M3.5×5	SET SCREW M3.5×5	(1)	(1)	
1-25	103.12-01-26	垫圈	WASHER	(1)	(1)	
1-26	103.12-01-25	送线轴挡圈	THREAD WIPER STUD COLLAR	(1)	(1)	
1-27	01-404000623-4	螺钉 M4×6	SCREW PAN M4×6	(1)	(1)	
1-28	103.12-01-12	电磁铁罩	SOLENOID COVER	(1)	(1)	
1-29	01-404000523-4	螺钉 M4×5	SCREW M4×5	(1)	(1)	
2	01-405001223-1	螺钉 M5×12	SCREW PAN M5×12	2	2	

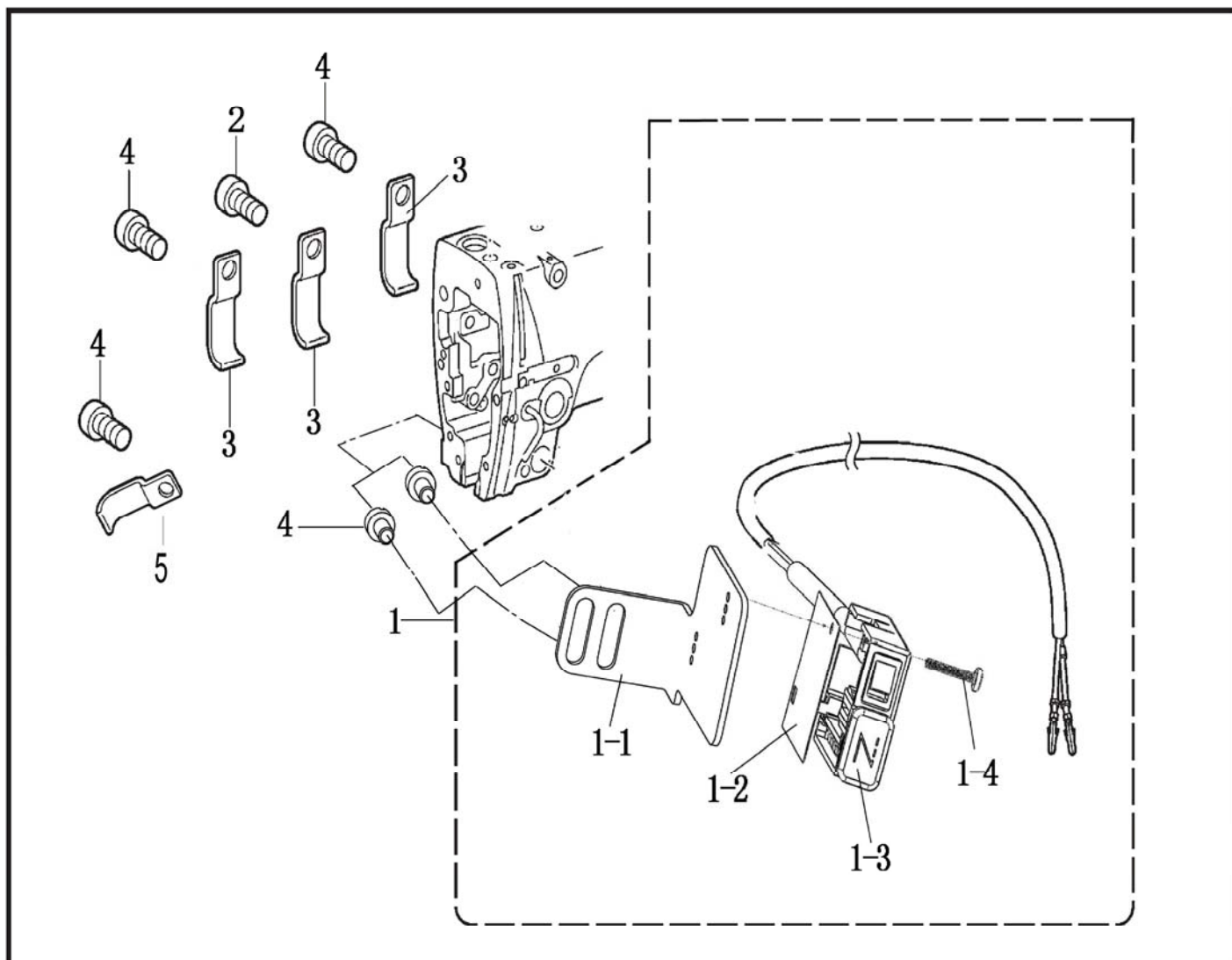
16. 控制箱装置/Control box mechanism



16. 控制箱装置/Control box mechanism

序号 PEF. NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	103. 14-110	G40 操作盘组件	G-40-PANEL ASSY	1套	1套	
2	103. 15-01	踏脚控制器组件	TREADLE UNIT ASM.	1套	1套	
3	CB-04B-02	控制箱组件	CONTROL BOX ASM.	1套	1套	

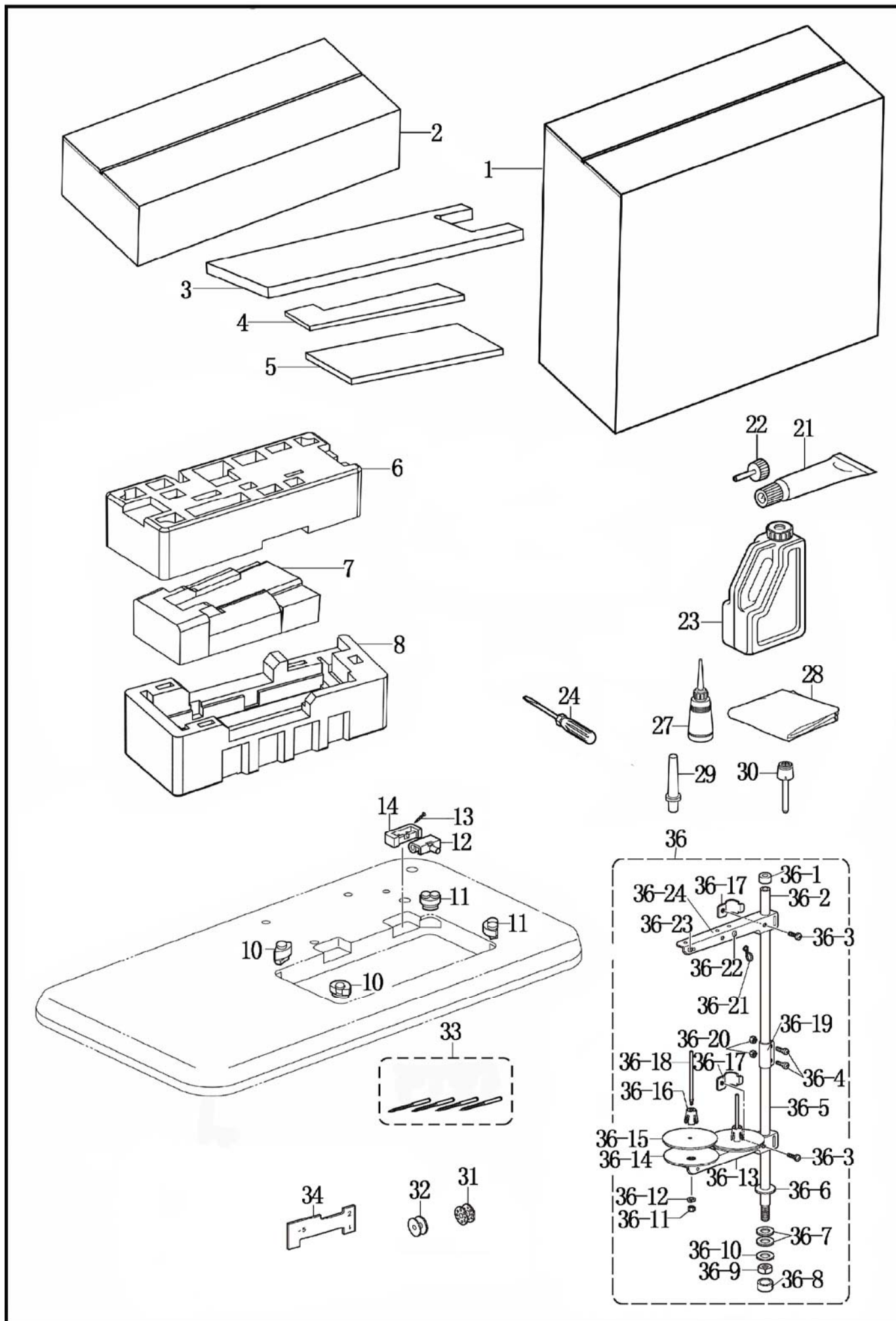
17. 倒缝开关装置/Quick reverse switch mechanism



17. 倒缝开关装置/Quick reverse switch mechanism

序号	图 号	名 称/Name of parts		S(中)	SH(厚)	备 注
PEF.NO	PART NO.	中 文	EngLish	数量QTY	数量QTY	NOTE
1	DL-01-C	倒缝照明灯组件	R-ACTUATOR ASM.	1套	1套	
1-1	DL04-01-A00	安装板	MOUNTING CARD	1	1	
2	01-404000523-1	螺钉 M4×5	SCREW, PAN M4×5	1	1	
3	103.11-64	线夹 U3	CORD HOLDER, U3	3	3	
4	01-405000823-1	螺钉 M5×8	SCREW, PAN M5×8	5	5	
5	103.18-03	线夹	CORD HOLDER	1	1	

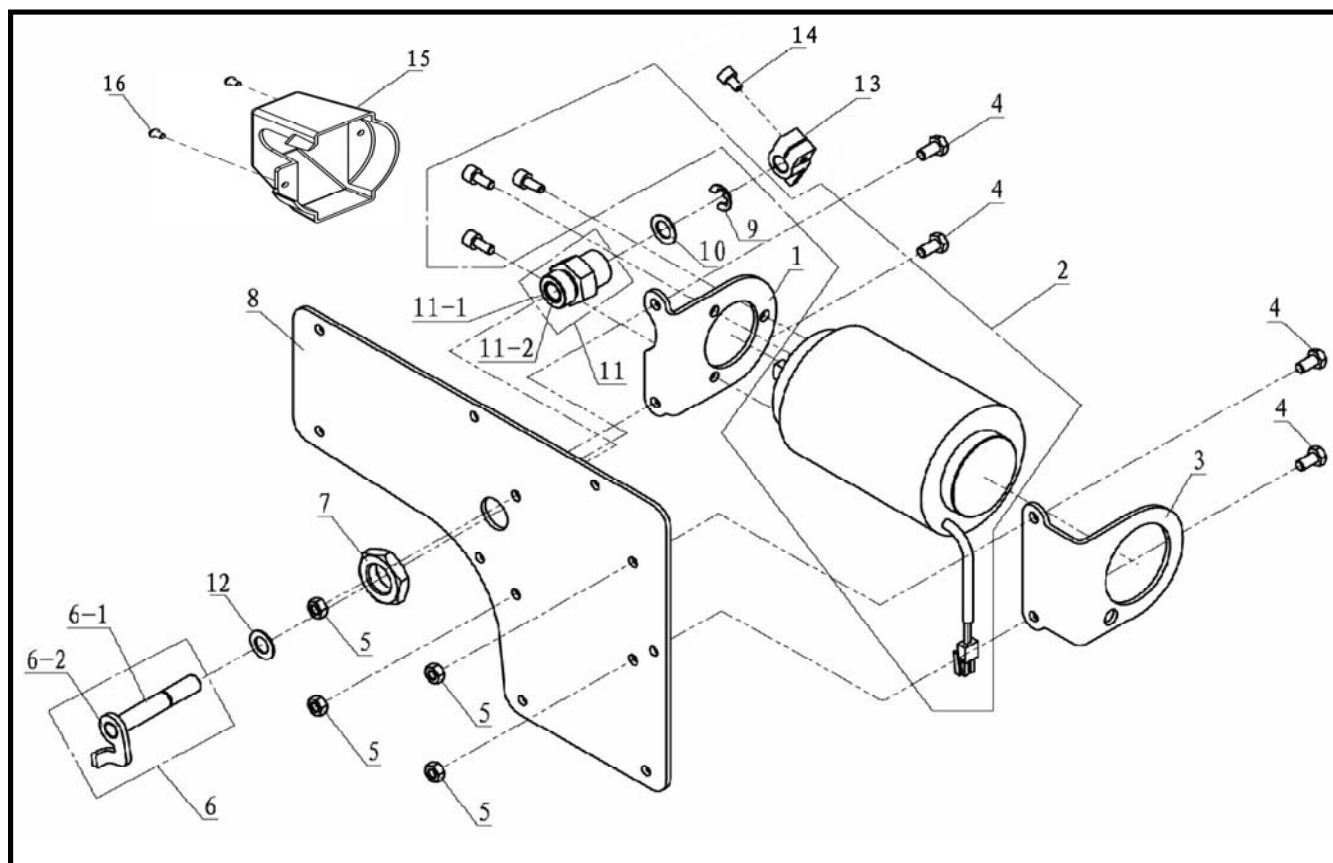
18. 附件/Accessories



18. 附件/Accessories

序号 PEF. NO	图 号 PART NO.	名 称/Name of parts		S(中)	SH(厚)	备 注 NOTE
		中 文	EngLish	数量QTY	数量QTY	
1	103.20-01-01	机台包装箱	MACHINE STAND PACKING BOX	1	1	
2	103.20-01-02	附件包装箱	ACCESSORIES PACKING BOX	1	1	
3	103.20-05-01	木板1	WOOD BLOCK, 1	1	1	
4	103.20-05-02	木板2	WOOD BLOCK, 2	1	1	
5	103.20-05-03	木板3	WOOD BLOCK, 3	1	1	
6	103.20-02-01	泡沫垫 (上)	FOAM PACKING SHEET (TOP)	1	1	
7	108.18-01	泡沫垫 (中)	FOAM PACKING SHEET (MEDIUM)	1	1	
8	103.20-02-03	泡沫垫 (下)	FOAM PACKING SHEET (BOTTOM)	1	1	
10	103.20-34-03	头部防震垫	HEAD CUSHION	2	2	
11	103.20-34-04	头部防震垫	HEAD CUSHION	2	2	
12	101.14-01	机头连接钩	HEAD HINGE	2	2	
13	101.14-02	机头连接钩座钉	NAIL	4	4	
14	101.14-03	机头连接钩座	RUBBER CUSHION	2	2	
21	103.20-107	润滑脂	GREASE TUBE	1	1	
22	103.20-108	管嘴	GREASE NOZZLE	1	1	
23	101.14-10	油罐组件 (装满白油)	OIL TANK ASM.	1	1	
24	101.14-06	螺丝刀	SCREW DRIVER (SMALL)	1	1	
27	103.20-50	注油壶组件	OILER ASM.	1	1	
28	103.20-52	机头罩	HEAD COVER	1	1	
29	101.14-09	机头支柱	HEAD REST, S	1	1	
30	101.10-07	台压角顶杆	KNEE LIFTER COMPLYING BAR	1	1	
31	104.07-18	梭芯 H	BOBBIN H		3	
32	101.03-37-02	梭芯 M	BOBBIN M	3		
33	103.02-18	机针 DB×1 (#14)	NEEDLE DB×1	4		
	101.12-11-24	机针 DP×5 (#22)	NEEDLE DP×5		4	
34	108.18-02	相配工夹具	TIMING GAUGE	1	1	
36	101.12-01	线架组件 2DR	COTTON STAND ASSY 2DR	1套	1套	
36-1		线架支撑管套	COLUMN CAP	(1)	(1)	
36-2		线架支撑管	COLUMN PIPE	(1)	(1)	
36-3		螺钉 M6×16	SCREW, PAN M6×16	(2)	(2)	
36-4		螺钉 M5×14	SCREW, PAN M5×14	(2)	(2)	
36-5		线架支撑管	COLUMN PIPE W/SCREW	(1)	(1)	
36-6		平垫圈 16	WASHER PLAIN 16	(1)	(1)	
36-7		橡皮垫圈	RUBBER WASHER	(2)	(2)	
36-8		线架支撑管套	COLUMN CAP	(1)	(1)	
36-9		螺母 M16	NUT M16	(1)	(1)	
36-11		螺母 M5	NUT M5	(2)	(2)	
36-12		弹簧垫圈 2-5	WASHER SPING 2-5	(2)	(2)	
36-13		过线架 2	SPOOL HOLDER 2	(1)	(1)	
36-14		垫圈	SPOOL STAND BASE	(2)	(2)	
36-15		线盘软垫	SPOOL MAT	(2)	(2)	
36-16		线轴缓冲架	SPOOL CUSHION	(2)	(2)	
36-17		过线架定位	SPOOL HOLDER SUPPORTER	(2)	(2)	
36-18		线轴 B	SPOOL SHAFT B	(2)	(2)	
36-19		线架管接头	COLUMN JOINT	(1)	(1)	
36-20		螺母 M5	NUT M5	(2)	(2)	
36-21		弹簧	SPRING	(1)	(1)	
36-22		过线管套	THREAD HANGER BASE	(2)	(2)	
36-23		过线架 2	SPOOL HOLDER 2	(1)	(1)	
36-24		过线架支撑臂	THREAD BUSH	(2)	(2)	

19. 自动抬压脚装置（选用）/Presser foot lifting set mechanism(Optional parts)



19. 自动抬压脚装置（选用）/Presser foot lifting set mechanism(Optional parts)

序号	图 号	名 称/Name of parts		S(中)	SH(厚)	备 注
PEF. NO	PART NO.	中 文	EngLish	数量QTY	数量QTY	NOTE
1	108. 19-01	电磁铁前脚	Electromagnet front foot	1	1	
2	108. 19-02-00	电磁铁组件	Electromagnet assm.	1	1	
3	108. 19-03	电磁铁后脚	Electromagnet back foot	1	1	
4	01-706001224-1	螺丝	Screw	4	4	
5	03-606000500-1	螺母	Nut	4	4	
6	108. 19-04	拨架组件	Moving bracket assm.	1	1	
6-1	108. 19-04-01	拨架轴	Moving bracket shaft	1	1	
6-2	108. 19-04-02	拨架	Moving bracket	1	1	
7	03-620150800-1	六角螺母	Hex nut	1	1	
8	108. 01-06A	后侧板	Side plate	1	1	
9	06-0801016-1	开口挡圈	Split washer	1	1	GB896 8
10	05-102101803-5	垫圈	Washer	1	1	108. 03-11
11	108. 19-05	铜套组件	Cooper sheathing component	1	1	
11-1	108. 19-05-01	铜套	Cooper sheathing	1	1	
11-2	108. 19-05-02	空心螺丝	Hollow screw	1	1	
12	108. 19-06	铜垫片	Washer	1	1	
13	108. 19-07	电磁铁曲柄	Electromagnet crank	1	1	
14	01-505001224-1	螺丝	Screw of crank	1	1	
15	108. 19-08	电磁铁罩	Electromagnet shield	1	1	
16	19-435000623-1	螺丝	Screw	2	2	

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此说明书仅做参考，如有更改恕不另做通知。

This manual is only for reference.

IF there is any modification ,we apologize for the changing hence caused.

HP-005 ELECTRONIC CONTROL BOX 电控箱

使用说明书
INSTRUCTION MANUAL BOOK

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通过 ISO9001:2008
质量管理体系认证

前 言

感谢您选用本公司的产品，该手册提供了此系统所需的操作指导说明。

为了您更好地使用该产品，在使用之前请仔细阅读本手册。

- 由于产品的改进，本手册内容可能随时变更，恕不另行通知。
- 您在使用中若有任何疑问或对我们的产品和服务有任何意见，请随时与我们售后服务部联系。

PREFACE

Thank you for selecting our product. The introduction provides necessary knowledge and notes for using.

Please read safety introduction carefully and understand them before using.

- The content of the introduction will be amended with the improvement of our product, the notice is not announced.
- If you have any doubts or comments about our product and service, please contact after-sale service.

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0. 主要技术数据

供电电压范围：AC220V±15%

供电电源频率：50Hz/60Hz

1、 安全注意事项

1.1 使用范围

本伺服控制器是为工业缝纫机开发设计的，如果在其它方面使用，请注意使用者的安全。

1.2 工作环境

1.2.1 电源电压请遵照控制箱铭牌所标示电压±15%范围内。

1.2.2 请远离高频电磁波发射器等，以免所产生的电磁波干扰本控制器而发生错误动作

1.2.3 温湿度：

a.请在室温 5°C 以上、 45°C 以下的场所操作。

b.禁止在日光直接照射的场所或室外运作。

c.请不要过于接近暖气（电热器）旁运作。

d.请保持 30 % ~ 95 % 相对湿度（无凝露）。

1.2.4 请不要在可燃气体或爆炸物附近操作。

1.3 安装

1.3.1 控制器请遵照说明书进行正确安装。

1.3.2 安装前请先关闭电源并拔掉电源线插头，然后进行安装。

1.3.3 装钉电源线时请避免靠近会转动部件，最少要离开 3 公分以上。

1.3.4 为防止噪声干扰或触电事故，请将缝纫机、控制箱接地。



1.3.5 打开电源之前，确定此供应电压必须符合标示在控制箱铭牌上的指定电压±15%范围内。

1.4 保养维修的规定

1.4.1 在操作保养或维修动作前，请先关闭电源。

1.4.2 翻抬机头时，与更换机针或梭子或穿线时，请确认电源已关闭。

1.4.3 控制箱里面有危险高压电，所以关闭电源后要等 5 分钟以上方可打开控制箱盖。

1.4.4 修理及保养的作业，要请经过训练的技术人员执行。

1.4.5 不能在电机及控制箱运转的状态下进行保养或维修。

1.4.6 所有维修用的零件，须由本公司提供或认可，方可使用。

1.5 危险提示



这个标示符号表示机器在安装时，安全上需要特别加以注意的事项，忽视此标记而进行错误操作可能会导致人员或是机器损伤。

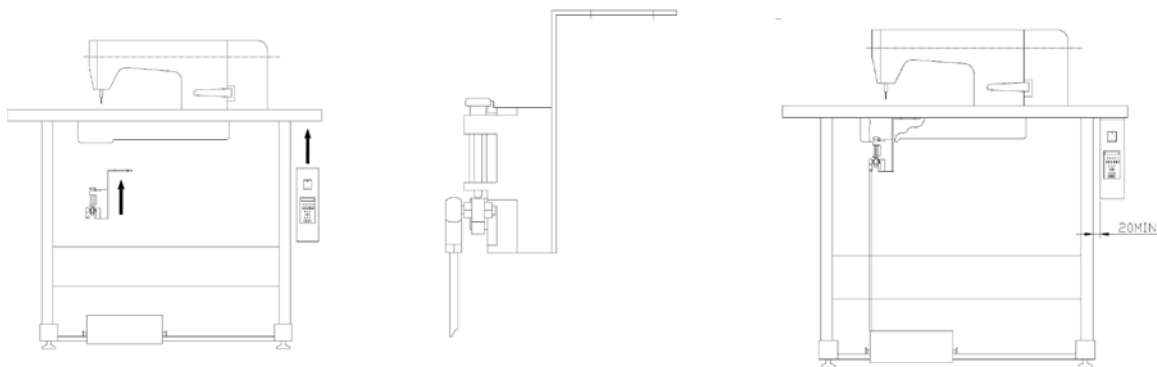
1.6 其它安全规定

- 1.6.1、在第一次接通电源后，请先以低速操作缝纫机并检查转动方向是否正确。
- 1.6.2、缝纫机运转时，请不要去触摸上轮、机针等会动作的部位。
- 1.6.3、所有可动作的部份，必须以所提供的防护装置加以隔离，防止身体接触并请勿在装置内塞入其它物品。
- 1.6.4、请不要在拆下电机护罩及其它安全装置的情形下操作。
- 1.6.5、不要使电机或控制箱掉在地上。
- 1.6.6、不要让茶水等液态物体流入控制箱或电机内部。

2. 安装与调整

2.1 控制箱的安装

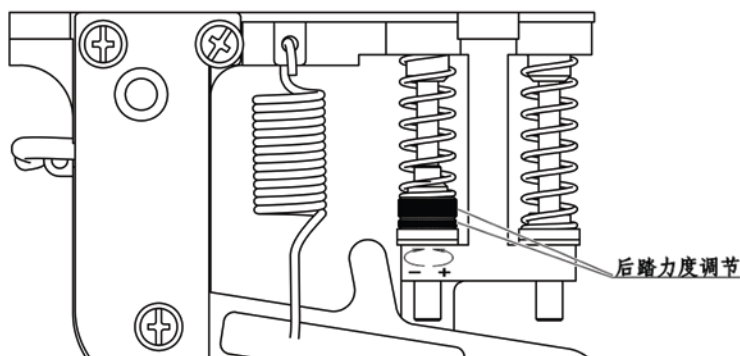
- 1).将控制箱及脚踏控速器安装于台板下方 2). 将踏板与控速器安装连结 3).安装后示意图



2.2 停针位的调整

- 2.2.1、松开手轮上的磁钢固定螺丝，调整位置后重新固定；
- 2.2.2、如果实际上停针位超过了预期上针位，将信号磁钢固定盘顺手轮旋转方向调节，反之，逆手轮旋转方向调节。

2.3 脚踏板后踏力量的调整



调整需求	调整结果
踏板后踏力量的调整	当螺栓愈向上时，则后踏力量愈重。当螺栓愈向下时，则后踏力量愈轻。

3. 接线与接地

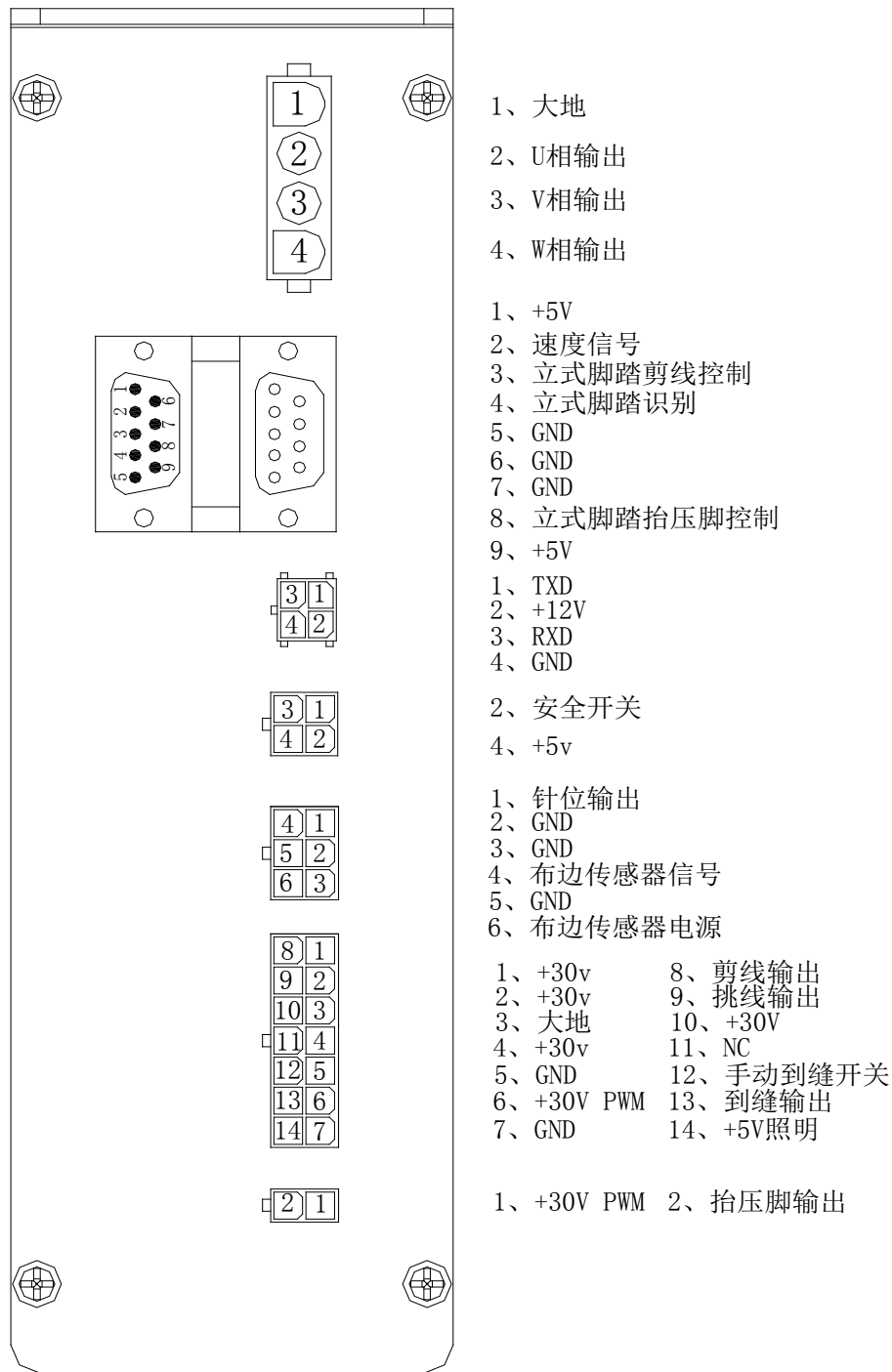
3.1 电源线的接法

本控制器适用于AC220V单相电源，电压输入范围为铭牌标示电压 $\pm 15\%$ 。



注意：
黄/绿色电源线为接地线，为了人员安全及设备可靠工作，一定要做好系统的接地工程。

3.2 控制器接线端子图：

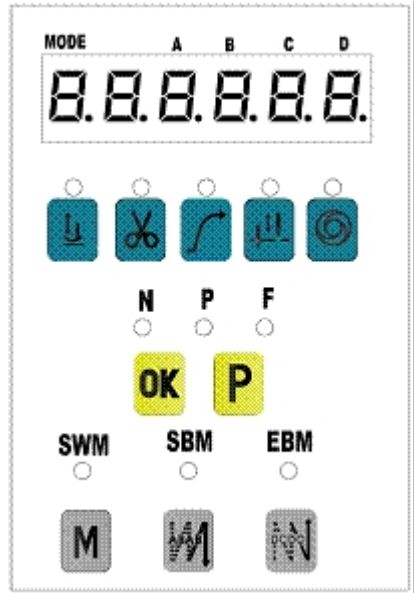


各部的连接插头于插入控制箱的插座时，要注意其形状和方向性，并确实插好。

4. 主控制箱操作说明

4.1 主控制箱面板的布局如下示意图

主控制箱（简称下位机）面板的布局如下示意图，共包含 T1~T6 六个数码管、十一个 LED 以及十个按键。面板有待机、缝纫模式设置、前固缝方式设置、后固缝方式设置、工艺参数设置共五种状态。



4.2 待机状态

1. 上电后, 面板显示待机状态, N、P、F、SWM、SBM、EBM 全熄; 各功能键上方的 LED 灯按当前参数值显示;

数码管 T1 T2 显示当前缝纫模式代码 (00: 自由缝; 01: 定长缝; 02: 四段缝; 03: 七段缝; 04: 八段缝; 05: W 缝), 其余各数码管显示 “-”。以当前缝纫模式是自由缝为例, 显示如下:



2. 选择  键, 对应的抬压脚、剪线、慢启动、停针位、自动触发等功能将被设置或取消, 同时对应的 LED 点亮或熄灭;

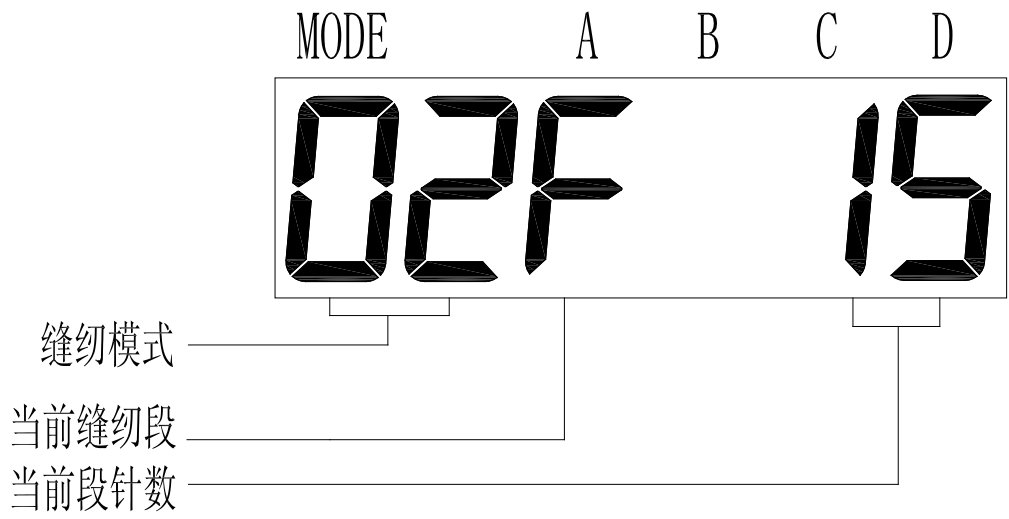
4.3 缝纫模式及各段针数设置



待机状态下按  键，进入缝纫模式设置状态:SWM 亮，其余 LED 全熄；

数码管 T1 T2 显示当前缝纫模式代码（00：自由缝；01：定长缝；02：四段缝；03：七段缝；04：八段缝；05：W 缝），若为定长缝或多段缝，数码管 T3 显示当前段代号“E、F、G、H”，数码管 T5、T6 显示当前段针数；

以四段缝为例，显示如下：



若为自由缝，不显示当前缝纫段；

缝纫模式及段号针数选择：

1. 按下  键，数码管 T1T2 可在 00~05 之间循环显示当前缝纫模式；
 2. 按下  键，数码管 T3 可在 “E、F、G、H” 之间循环显示当前段号；
 3. 按下  或  键，对应的针数加 10 或加 1，0—99 之间循环；、 键无效；
- 按下  键，返回待机模式。

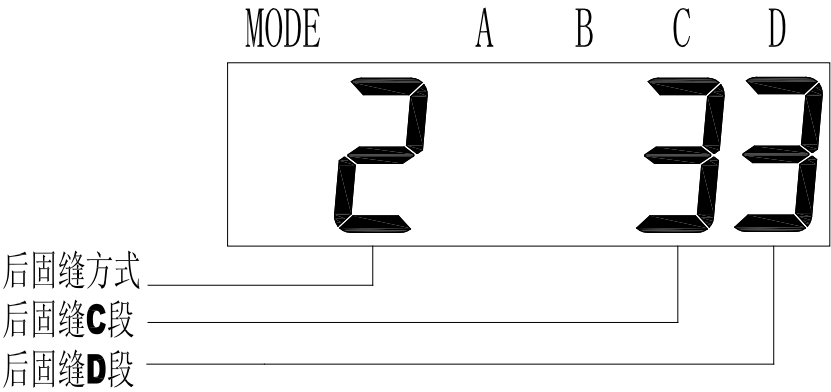
4.4 前固缝方式及针数设置

1. 在待机状态下、缝纫模式设定状态下或后固缝设定状态下:按键，均可进入前固缝方式设置状态，此时 SBM 灯亮，其余 LED 熄灭，T1 显示当前的前固缝方式；
2. 按下键，数码管 T1 循环显示前固缝方式:0（无前固缝）、1（单前固缝）、2（双前固缝）、3（四前固缝），T3、T4 分别显示当前的固缝针数，以前双固缝为例，显示如下：

按，其上方对应的针数加一，在 0~F 之间循环切换，按键返回待机状态。

4.5 后固缝方式及针数设置

1. 在待机状态下、缝纫模式设定状态或后固缝设定状态下，按键，均可以进入后固缝方式设置状态，此时 EBM 亮，其余 LED 熄灭，T2 显示当前的后固缝方式；
2. 按下键,数码管 T2 循环显示后固缝方式:0（无后固缝）、1（单后固缝）、2（双后固缝）、3（四后固缝），
3. T5、T6 分别显示当前的固缝针数，以后双固缝为例，显示如下：。

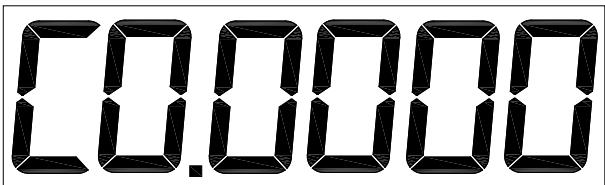


按，其上方对应的针数加一，在 0~F 之间循环切换，按键返回待机状态。

4.6 工艺参数设置

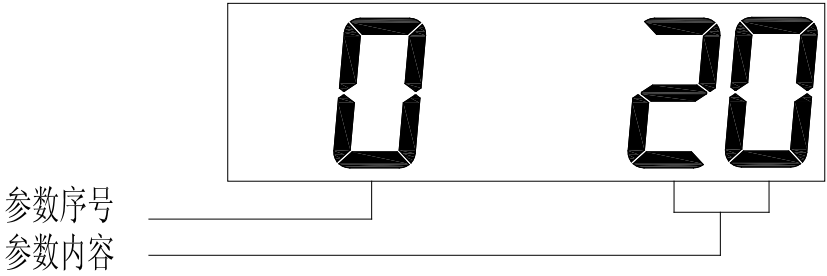
4.6.1 密码输入

1.在待机状态下连续按两次  键，P 灯点亮，其它 LED 灯全熄，此时便进入了工艺参数设置状态，数码管显示密码输入:界面如下图所示:



2.,按     键,可以输入密码, (出厂密码 2222 输入后, 按  确认。如果所输入的密码正确，则进入工艺参数修改状态。显示如下:

4.6.2 工艺参数修改



1.在工艺参数设定状态下,  键为序号递增键,按该键可进行加 1 操作.,(序号值:0-99)

2 在状工艺参数设定态下,  键为序号递减键,按该键可进行减 1 操作.,(序号值:0-99)

3     各键在此状态下为参数设定键，每按一键，参数的对应位加 1（如果加 1 后的参数值超出该参数的范围则不加）；每一个参数设置完后按  键，保存该参数值，再按一次  键返回待机模式。

4.7 常用参数说明表

(单位说明: RPM 转/分钟; ms 毫秒; s 秒; hour 小时;)

序号带*表示该参数修改后需要重新上电才能生效。

序号	功能参数	默认值	设定范围	单位	参数说明
P0	踏板斜率	20	1~100	%	斜率越大，低速区域越大，速度变化越大；斜率越小，低速区域越小，速度变化越小。
P1	速度比例	8	1~8		自由缝最高速度的限定比例。将自由缝最高速度分成 8 等分，通过调整等分值来改变当前自由缝最高速度
P2	系统最低转速	200	150~500	RPM	缝纫时，机头最低转速限制
P3	自由缝最高转速	4000(平缝系列) 3000(双针系列) 5500(包缝系列)	150~5000 150~4000 150~7500	RPM	自由缝模式时，机头最高转速
P4	定速缝速度	3500(平缝系列) 3000(双针系列)	200~4000	RPM	定长缝自动触发时的缝纫速度
P5	前固缝速度	1800	200~3000	RPM	执行前固缝时的缝纫速度
P6	后固缝速度	1800	200~3000	RPM	执行后固缝时的缝纫速度
P7	前固缝完暂停	off	0n/off		前固缝完毕暂停，需要踏板触发后模式才继续运行
P8	后固缝前暂停	off	0n/off		后固缝前暂停，需要踏板触发才执行后固缝
P9	W 缝速度	1800	200~3000	RPM	W 缝模式时的缝纫速度
P15	倒缝最高速度	2500	200~3000	RPM	倒缝时的最高速度
P16	扫线通电时间	50	20~1000	ms	扫线电磁铁的动作时间
P17	暂停过程中按键是否吸合倒缝电磁铁	on	0n/off		当电机不运转时，按倒缝键是否允许倒缝电磁铁动作
P18	针迹/速度优先	0	0~1		缝纫时，针迹或速度的优先级别设定 0: 针迹优先 1: 速度优先
P19*	抬压脚开关	0n	0n/off		开启或关闭抬压脚功能
P21	计数功能选择	0	0~2		0: 无计数功能 1: 底线计数功能 2: 剪线计数功能

P22	慢启动针数	2	0~15		以慢启动速度缝纫的针数
P23	慢启动速度	500	200~3000	RPM	慢启动缝纫时的速度
P24	底线基数	10	1~100		底线变化多少针时,当前计数变化 1 个单位。
P25	底线总数	2000	1~9999		设定的底线总数
P26	当前计数	2000	0~9999		当前的底线数量
P27	倒缝全额启动时间	200	20~500	ms	倒缝电磁铁的初始出力时间
P28	倒缝通电时间	2	1~50	ms	倒缝电磁铁力度保持时的高电平时间
P29	倒缝断电时间	2	1~50	ms	倒缝电磁铁力度保持时的低电平时间
P34 *	上电找针位	0n	0n/off		上电后, 是否自动找到上针位点。
P36	剪线速度	250	200~500	RPM	剪线时的运转速度
P37 *	半后踏自动抬压脚	on	0n/off		开启或取消半后踏自动抬压脚
P39	第一针速度限定	3000	200-4000	RPM	第一针缝纫时的速度限定
P40	前固缝补偿参数 1	7 (平缝系列) 12 (双针系列)	0-16		前固缝针迹补偿参数 1
P41	前固缝补偿参数 2	5	0-16		前固缝针迹补偿参数 2
P42	后固缝补偿参数 1	7 (平缝系列) 12 (双针系列)	0-16		后固缝针迹补偿参数 1
P43	后固缝补偿参数 2	5	0-16		后固缝针迹补偿参数 2
P44	W 缝补偿参数 1	7 (平缝系列) 12 (双针系列)	0-16		W 缝针迹补偿参数 1
P45	W 缝补偿参数 2	5	0-16		W 缝针迹补偿参数 2
P46	手动老化开关	0	0/1		0: 正常操作模式 1: 老化拖车模式
P47	老化停顿时间	2000	100-9999	ms	老化时每次运行之间的时间间隔
P48	老化运行时间	2000	100 — 9999	ms	老化时每次运行的时间 (在没有定位器时有效)
P49 *	电机运转方向	1	0/1		0:CCW 1:CW
P51 *	剪刀模式	0	0/1		0: 内置剪刀 1: 外置剪刀。
P52	外剪刀工作时间	100	30~9999	ms	外剪线的动作时间
P53	外扫线工作时间	70	20~9999	ms	外扫线的动作时间
P54	安全开关信号型式	0	0/1		0: 常开 1: 常闭

P56	机头工作时间	0	0~9999	hour	机头已经工作了多长时间(每个小时加 1)
P57	抬压脚启动时间	250	20~1000	ms	抬压脚电磁铁的初始出力时间
P58	抬压脚通电时间	2	1~50	ms	抬压脚电磁铁的力保持时的高电平时间
P59	抬压脚关断时间	3	1~50	ms	抬压脚电磁铁的力保持时的低电平时间
P60	抬压脚保护时间	20	1~120	s	抬压脚工作保护时间
P61	抬压脚延迟时间	50	20~800	ms	电机停转后, 多长时间开始抬压脚
P62	放压脚延迟时间	50	20~800	ms	压脚放下后, 多少时间才允许启动
P64 *	上电后自动抬压脚时间	0	0-900	s	上电后自动抬压脚的时间
P65	布边传感器功能选择	0	0-1		0: 无布边传感器 1: 有布边传感器
P66	布边传感器类型选择	2	0-3		0: N 输出低有效 1: N 输出高有效 2: P 输出低有效 3: P 输出高有效
P67	布边速度	800	200-5000	RPM	检测到布头信号后的运转速度
P69	布边延时启动时间	1000	100-9999	ms	检测到布头信号后的延时启动时间
P70	布头针数	10	1-100		布边传感器信号到针孔之间的距离
P73	有无布边传感器	off	0n/off		是否有外接布边传感器
P74	倒缝/抬压脚气动选择	0	0-3		0: 全部电动 1: 倒缝气动 2: 压脚气动 3: 全部气动
P76	剪线次数	0	0-9999		每剪一次线计数加 1, 加满清零
P77	针位信号输出控制	0	0-3		0: 上针位输出低电平有效 1: 下针位输出低电平有效 2: 上针位输出高电平有效 3: 下针位输出高电平有效
P98	参数恢复默认值	0000h	0-9999		
P99	工艺参数密码	2222h	0-9999		

5. 故障码/故障原因/故障排除方法表

故障显示代码	故障原因	故障排除方法
Err 1	系统故障	断电后检查机头是否卡住，然后重新上电，如果还不能解决，请联系售后服务人员
Err 2	系统过压	请检查电源电压是否正常？如果电源电压高于265V，关机，请等电源电压恢复正常再开机
Err 3	系统欠压	请检查电源电压是否正常？如果电源电压低于160V，关机，请等电源电压恢复正常再开机
Err 4	电机码盘故障	请检查电机连线是否正常。
Err 5	系统故障	重新上电，如果还不能解决，请联系售后服务人员
Err 6	系统故障	重新上电，如果还不能解决，请联系售后服务人员
Err 7	电机缺相	请检查电机电源线是否脱落或松动。
Err 8	电机堵转	1、电机电源线是否脱落 2、机头是否堵住 3、电机码盘线是否松动 4、上针位是否正确（有剪线动作的情况下）
Err 9	电机过载	1、布料是否太厚 2、机头是否堵住 3、上针位是否正确（有剪线动作的情况下）
Err 11	电机码盘故障	请检查电机码盘线是否松动
Err 12	脚踏脱落故障	请检查脚踏连接线是否松动
Err 13	脚踏上电时被踩下	请检查脚踏是否被卡住
Err 14	电磁铁投入时间过长	1、上针位是否正确 2、布料是否太厚或线太粗导致剪线动作不正常
Err 15	制动回路故障	请检查刹车电阻连接线是否松动
Err 17	电磁铁过流故障	电磁铁故障，请检查电磁铁是否损坏或短路。
Err 18	制动回路故障	请检查刹车电阻连接线是否松动
Err 19—21	定位系统故障	电机可继续运转，但无针数记数、针位定位及剪/扫线及倒缝功能 请检查磁钢是否正常。 请检查机头是否被卡住。
Err 22	上位机通信故障	请检查控制面板与驱动器的连线是否正常
Err 23	存储器故障	重新上电，如果还不能解决，请联系售后服务人员
Err 24	机头润滑时间到	加上机器润滑油，然后恢复机头运转时间
Err 26	上电时检测到有布	1、将布拿开机器再重新来一次即可 2、布边传感器设定错误,重新设定布边传感器类型 3、布边传感器损坏

如果在现场仍然消除不了，请联系供应商。

6. 七段数码管显示值与实际数值对照表

数字部分：

实际 字符	0	1	2	3	4	5	6	7	8	9
显示 字符	0	1	2	3	4	5	6	7	8	9

英文字符：

实际 字符	A	B	C	D	E	F	G	H	I	J
显示 字符	A	b	C	d	E	F	G	H	i	J
实际 字符	K	L	M	N	O	P	Q	R	S	T
显示 字符	K	L	M	N	O	P	Q	R	S	T
实际 字符	U	V	W	X	Y	Z				
显示 字符	U	V	W	X	Y	Z				

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0. Main technical data

Range of voltage: AC220V $\pm$ 15%

Power frequency: 50Hz/60Hz

1. Safety notice

1.1 Range of use

The server-motor is designed for industry sewing machine, when using for other applications, please make sure that the users are safe.

1.2 Working conditions

- 1.2.1 Any fluctuations in the power voltage should be within the range of $\pm$ 15% according to the control box marked.
- 1.2.2 In order to avoid error caused by disturbing control box, please keep away from high frequency electromagnetic emitter.
- 1.2.3 Humidity
 - a. The ambient temperature should be within the range of 5°C to 45°C during using.
 - b. Avoid exposure to direct sun or outdoors during using.
 - c. Keep away from the heating (heater) during using.
 - d. The relative humidity should be within the range of 30% to 95%.
- 1.2.4 Keep away from flammable gases or explosive during using.

1.3 Installation

- 1.3.1 Please install the controller correctly according to the introduction.
- 1.3.2 Please turn off and disconnect the power cord before installation.
- 1.3.3 Please keep away from rotating parts when installing the power cord, the distance should be at least 3cm.
- 1.3.4 In order to prevent noise interference or electric accident, make sure that the sewing machine and the control box are connected to ground. 
- 1.3.5 Make sure that the fluctuation in the power voltage should be within the range of $\pm$ 15% according to the control box marked before turning on.

1.4 Maintenance and inspection

- 1.4.1 Please turn off before maintenance or inspection.
- 1.4.2 Make sure that the power switch is turned off when turning the machine head,

replacing needle or rotary hook.

- 1.4.3 It is very dangerous because of high voltage inside the control box, if you want to uncover the control box, more than 5 minutes is needed to wait after power off.
- 1.4.4 Maintenance and inspection of the sewing machine should only be carried out by a qualified technician.
- 1.4.5 Forbidden to do maintenance and inspection when the motor is running.
- 1.4.6 All components for repair should be provided or approved before using.

1.5 Dangerous tips



This symbol indicates something you should be careful of when installing, failing to follow the instruction could cause injury when using the machine physical damage to equipment and surroundings.

1.6 Other safety requirements

- 1.6.1 Please operate the sewing machine at low-speed and check whether the direction of rotation is correct for the first time to power on.
- 1.6.2 Please don't touch the up wheel ,needle and other action parts when the sewing machine is running .
- 1.6.3 To prevent physical contact, all action parts must be isolated by protective devices, and please don't put anything into the devices.
- 1.6.4 Forbidden to operate at the circumstance of motor hood and other safety devices removed.
- 1.6.5 Don't let motor or control box fall to ground.
- 1.6.6 Don't let liquid ,such as tea, flow into the control box or motor.

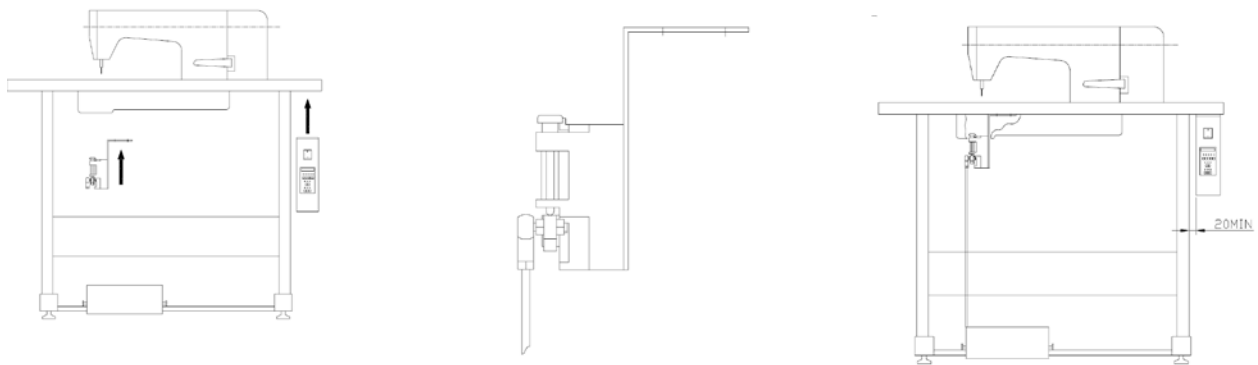
2. Installation and adjustment

2.1 Installation of the control box

2.1.1 Install the control box and the foot-controllor beneath the table.

2.1.2 Please connect the pedal with the control device

2.1.3 Installation diagram

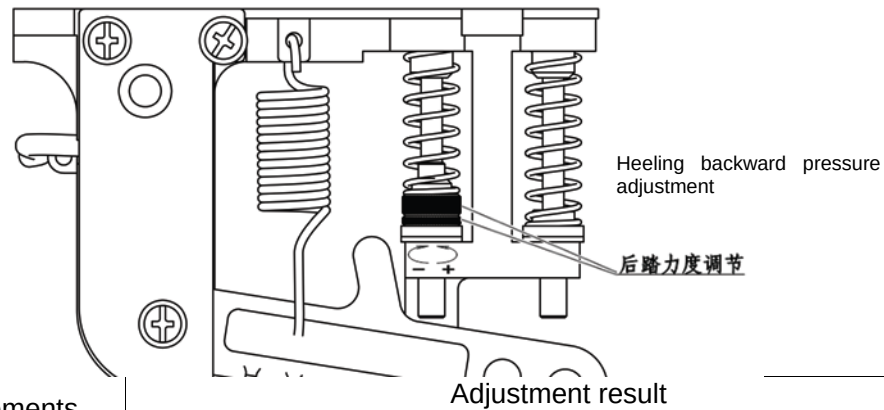


2.2 Adjustment of needle stop position

2.2.1 Release the magnet fixed screw of the hand wheel, re-fix after position adjustment.

2.2.2 If the actual needle stop position exceed the expected needle up position, adjust the magnet fixed plate on the indicative direction of the hand wheel rotation, conversely, adjust the hand wheel on the reverse direction of hand wheel rotation.

2.3 Adjustment of the reverse pressure for foot presser



Adjustment requirements	
Adjustment of the reverse pressure for foot presser	Rotate the bolt at up, the reverse pressure will be heavy. Rotate the bolt at down, the reverse pressure will be light.

3. Connection and grounding

3.1 Connection of power supply

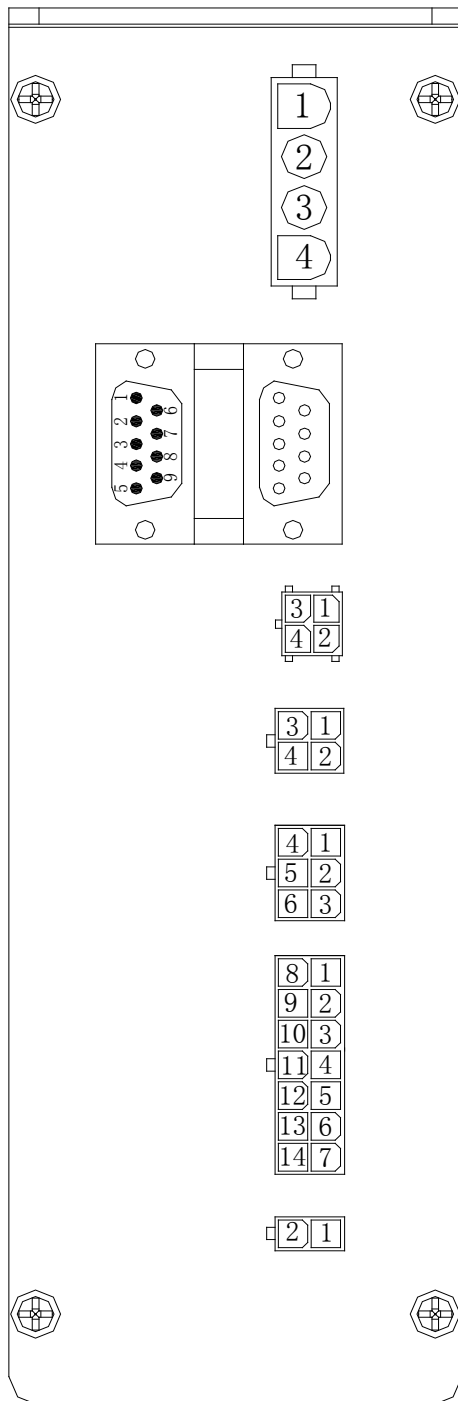
The controller is suitable for power supply of AC220V (one phase), the fluctuation of input voltage is within $\pm 15\%$ as the plate marked.



Notice:

The yellow /green power line are connected to ground, the connection to ground must be well done for insurance of safety and devices reliable to work.

3.2 Controller connection terminal map



1. Ground
2. U phrase output
3. V phrase output
4. W phrase output

1. +5V
2. speed signal
3. stand foot pedal trimming control
4. stand foot pedal identify
5. GND
6. GND
7. GND
8. stand foot pedal foot presser control
9. +5V

1. TXD 2. +12V
2. RXD 4. GND

1. NC 2. safety switch
3. NC 4. +5v

1. needle position output 2. GND 3. GND
4. cloth edge sensor signal 5. GND
6. cloth edge sensor power

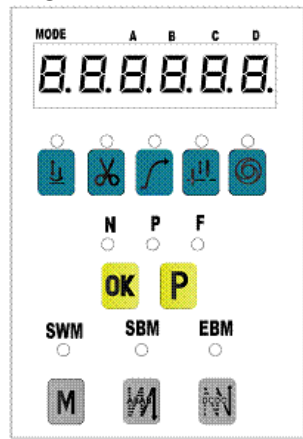
1. +30V 2.+30V 3.ground 4.+30V
5. GND 6. +30 PWM 7. GND 8.trimming output
9. thread sweep output 10. +30V 11.NC
12. manual reverse sewing switch
13. reverse sewing output
14. +5V lighting

1. +30V PWM
2. foot presser output

4. Operation description of the main control box panel

4.1 Layout of the main control box panel as follows

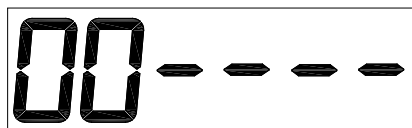
Layout of the main control box panel as follows, it includes six digital tube (T1-T6),eleven LED and ten buttons, the panel includes five states: holding mode, sewing mode set, fore-tacking mode set, back-tacking mode set, technical parameter set.



4.2 Holding state

1.The panel displays holding state when power on, N、P、F、SWM、SBM、EBM are turned off, the LED lamps at the top of function keys display according to the current parameter.

T1,T2 digital tube display current sewing mode(00:free sewing; 01:constant-dimension sewing; 02: four- segment sewing ; 03: seven -segment sewing; 04: eight-segment sewing; 05:W sewing),other digital tubes display “-”. Take current sewing mode free sewing for example, it displays as follows :



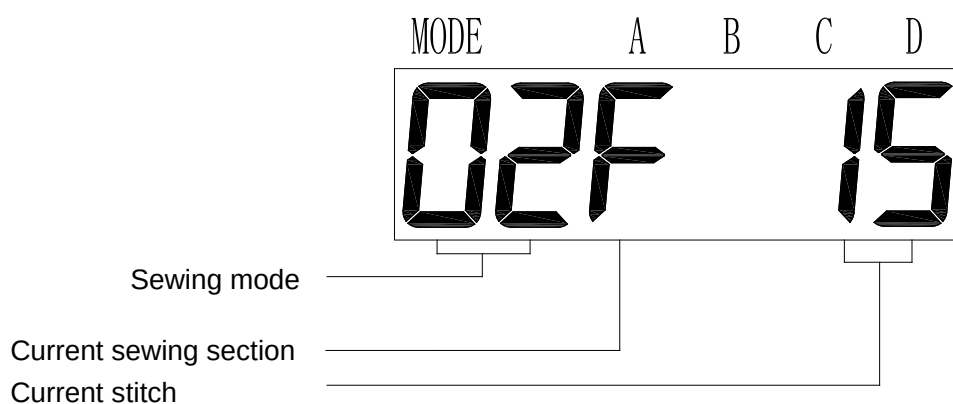
2.Choose button, the corresponding functions of foot presser, thread trimmer ,slow start-up, needle stop position,automatic triggers and so on will be set or canceled, meanwhile the corresponding LEDs are on or off.

4.3 Sewing mode and each section stitches setting

Press  button at the holding state, then it goes into sewing mode set state: SWM is on, and other LEDs are off.

T1,T2 digital tube display current sewing mode(00:free sewing;01: constant-dimension sewing;02:four-segment sewing; 03:seven-segment sewing; 04:eight-segment sewing; 05:W sewing), if it is constant-dimension sewing or multi-segment sewing ,T3 digital tube display current section code “E、 F、 G、 H”,T5 and T6 digital tube display current section stitch.

Take four-segment sewing for example, it displays as follows:



It doesn't display current sewing section if it is at free sewing .

Selection of sewing mode、 section number and stitches:

1.Press  button, T1,T2 digital tube can display circulatory current sewing mode among 00~05;

2. Press  button ,T3 digital tube can display circulatory current section number among “E、 F、 G、 H”.

3. Press  or  button, corresponding stitches added 10 or 1 and circularae among 0-99; 、  is invalid; press  button, it returns to the holding mode .

4.4 Fore-tacking sewing mode and stitches set



1. Press button at the state of holding, sewing mode set or fore-tacking set, it all can go into the state of fore-tacking set, meanwhile SBM is on, other LED is off, T1 display current fore-tacking sewing mode.



2. Press button, T1 digital tube display circularly fore-tacking sewing mode : 0(no fore-tacking sewing),1(single fore-tacking sewing),2(double fore-tacking sewing) 3(four fore-tacking sewing),T3、T4 display current tacking stitches respectively, take double fore-tacking sewing for example ,it displays as follows:

Fore-tacking sewing mode

Fore-tacking sewing A

Fore-tacking sewing B



Press button, the corresponding stitches above added 1,switch circularly



among 0-F ,press button, it returns to the holding state.

4.5 Back-tacking sewing and stitches set

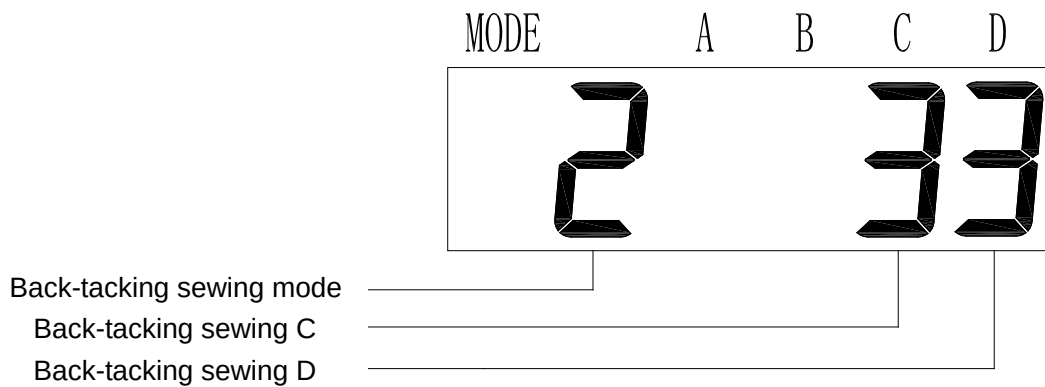


1. Press button at the state of holding, sewing mode set or back-tacking set,it all can go into back-tacking mode setting state, meanwhile EBM is on, other LED is off, T2 display current back-tacking mode .



2. Press button, T2 digital tube display circularly back-tacking sewing mode: 0(no back-tacking sewing)、 1 (single back-tacking sewing)、 2 (double back-tacking sewing)、 3 (four back-tacking sewing) .

3. T5、T6 display current stitches of back-tacking sewing respectively ,take double back-tacking sewing for example ,it displays as follows:

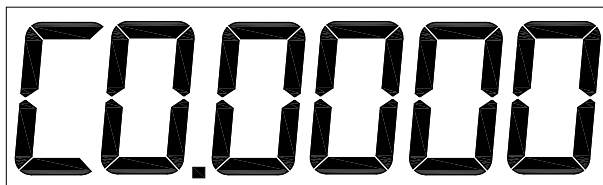


Press   button, the corresponding stitches above added 1, switch circularly among 0-F, press  button, it returns to the holding state.

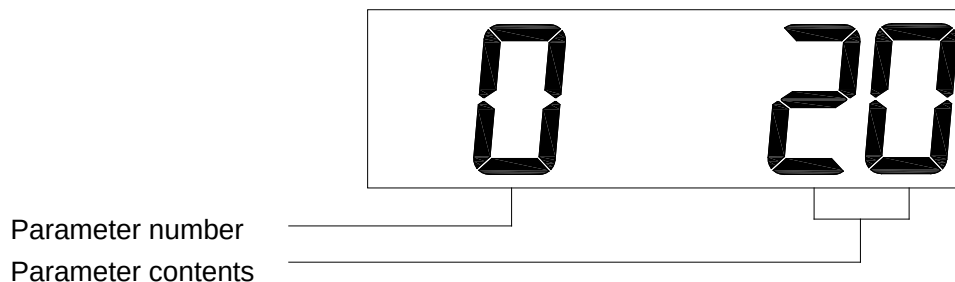
4.6 Technical parameter set

4.6.1 Password input

1. Press  twice continually at the holding state, P light is on ,other LED is off, it goes into the state of technical parameter setting, digital tube display password input as follows :



2. Press     button,it can input password, the initial input password is 2222,press  to confirm, if the entered password is correct ,then it goes into the state of modifying technical parameter ,display as follows :



4.6.2 Modify the technical parameter

1. At the technical parameter setting state,  is sequence increasing key, press this key can do operation of added 1(sequence:0-99)

2. At the technical parameter setting state,  is sequence descending key, press this key can do operation of minus 1(sequence :0-99).

3.     are parameter setting key at this state, press the key once, parameter of corresponding bit adds 1(it will not continue if the parameter overflow after

adding); press  key to save the parameter after setting, press  key again to return to the holding state .

4.7 Common parameter description

The parameters marked with *mean that they should re-power after amended.
(Unit: RPM; ms ; s ; hour)

Sequence	Function parameter	Default	Setting range	unit	Parameter description
P0	Pedal slope	20	1~100	%	The bigger the slope is, the larger the low-speed region is, and the faster the speed change is; the smaller the slope is, the narrower the low-speed region is, and the lower the speed change is.
P1	Speed proportion	8	1~8		Presser proportion of the maximum speed of reverse sewing. The maximum seed is equally divided into eight parts, current speed can be modified through adjusting parts.
P2	System minimum speed	200	150~500	RPM	The minimum speed of machine head when sewing.
P3	Maximum speed of the reverse sewing	4000(lockstitch series) 3000(double needle series) 5500(overlock stitch series)	150~5000 150~4000 150~7500	RPM	The maximum speed of machine head at the reverse sewing.
P4	Fixed sewing speed	3500(lockstitch series) 3000(double needle series)	200~4000	RPM	Sewing speed of fixed sewing speed.
P5	Fore-tacking sewing speed	1800	200~3000	RPM	Sewing speed of fore-tacking.

P6	Back-tacking sewing speed	1800	200~3000	RPM	Sewing speed of back-tacking.
P7	Suspend when the fore-tacking finished.	off	On/off		Pedal trigger is needed to continue operating when suspend at fore-tacking finishing.
P8	Suspend when the back-tacking finished.	off	On/off		Pedal trigger is needed to continue operating when suspend at back-tacking finishing.
P9	W sewing speed	1800	200~3000	RPM	Sewing speed at W sewing mode.
P15	Maximum speed of reverse sewing.	2500	200~3000	RPM	Maximum speed of reverse sewing.
P16	Working time of thread sweep	50	20~1000	ms	Working time of thread sweep electromagnet.
P17	Whether the reverse sewing key will be absorbed when the motor stops.	On	On/off		When the motor stops, and the key pressed, whether the electromagnet act or not.
P18	Stitch/speed priority	0	0~1		Stitch or speed priority setting during sewing: 0:stitch priority 1:speed priority
P19*	Foot presser switch	On	On/off		Turn on/off the function of foot presser.
P21	Selection of counting function	0	0~2		0:Non-counting function 1:Bobbin thread counting function 2:Trimming thread counting function
P22	Slow-startup counting	2	0~15		Stitches when sewing at slow-startup speed
P23	Slow-startup speed	500	200~3000	RPM	The sewing speed at slow-startup.
P24	Bobbin-thread base number	10	1~100		How many stitches changes on bobbin-thread, the current count change one unit.
P25	Total number of bobbin-thread	2000	1~9999		Total number of bobbin-thread setting.
P26	current counting	2000	0~9999		Current amount of bobbin-thread.
P27	Full PWM on time of reverse sewing	200	20~500	ms	Initial startup time of reverse sewing electromagnet.

P28	PWM on time of reverse sewing	2	1~50	ms	PWM on time of reverse sewing when the electromagnet holding on.
P29	PWM off time of reverse sewing	2	1~50	ms	PWM off time of reverse sewing when the electromagnet holding on.
P34*	Automatic finding needle position	On	On/off		Whether automatic finding the needle up position at PWM on time.
P36	Trimming speed	250	200~500	RPM	Operating speed when trimming.
P37*	Automatic lift foot presser of half back step	on	On/off		Start or cancel automatic lift foot presser of half back step.
P39	Speed limitation of the first stitch	3000	200-4000	RPM	The limitation for the speed of the first sewing stitch.
P40	Fore-tacking sewing compensation parameter 1	7 (lockstitch series) 12 (two-needle lockstitch series)	0-16		Fore-tacking stitch sewing compensation parameter 1.
P41	Fore-tacking sewing compensation parameter 2	5	0-16		Fore-tacking sewing stitch compensation parameter 2.
P42	Back-tacking sewing compensation parameter 1	7 (lockstitch series) 12 (two-needle lockstitch series)	0-16		Back-tacking sewing stitch compensation parameter 1.
P43	Back-tacking sewing compensation parameter 2	5	0-16		Back-tacking sewing stitch compensation parameter 2.
P44	W sewing compensation parameter 1	7 (lockstitch series) 12 (two needle lockstitch series)	0-16		W sewing stitch compensation parameter 1.
P45	W sewing compensation parameter 2	5	0-16		W sewing stitch compensation parameter 2.
P46	Manual test mode switch	0	0/1		0: normal operation mode 1: test mode
P47	Manual test mode switch	2000	100-9999	ms	The interval time between each operation at test mode

P48	Operating time of test mode	2000	100—9999	ms	Each operating time of the test mode.
P49*	Motor operation direction	1	0/1		0:CCW 1: CW
P51*	Scissors mode	0	0/1		0: built-in scissors 1: built-out scissors
P52	Working time of built-out scissors	100	30~9999	ms	Working time of built-out scissors.
P53	Working time of external thread sweep	70	20~9999	ms	Working time of external thread sweep.
P54	Type of safety switch signal	0	0/1		0: open 1: shut
P56	Working time of machine head	0	0~9999	hour	How many hours the machine head have worked.(add 1 per hour)
P57	Startup time of lifting foot presser	250	20~1000	ms	Initial startup time of lifting foot presser electromagnet.
P58	PWM on time of lifting foot presser	2	1~50	ms	PWM on time of lifting foot presser when the electromagnet holding on.
P59	PWM off time of lifting foot presser	3	1~50	ms	PWM off time of lifting foot presser when the electromagnet holding on.
P60	Protection time of foot presser lifting	20	1~120	s	Protecting time of foot presser lifting during working.
P61	Delay time of lifting foot presser	50	20~800	ms	How long will it be to start to lift foot presser after the motor stop.
P62	Delay time of downing foot presser	50	20~800	ms	How long is it allowed to startup after foot presser is down.
P64*	Automatic foot presser lifting time with power on	0	0-900	s	Time of automatic lifting foot presser with power on.
P65	Function selection of cloth edge sensor	0	0—1		0: no cloth edge sensor 1: cloth edge sensor
P66	Selection of cloth edge sensor type	2	0—3		0: N output is effective at low 1: N output is effective at high 2: P output is effective at low 3: P output is effective at high
P67	Speed of cloth edge	800	200-5000	RPM	Operating speed when detecting cloth edge signal.

P69	Delay-startup time of cloth margin	1000	100-9999	ms	Delay-startup time when detecting cloth head signal.
P70	Stitch of cloth head	10	1-100		The distance between Cloth edge sensor signal and needle hole.
P73	Cloth edge sensor	off	On/off		Whether there is an external cloth edge sensor.
P74	Selection of back stitch/ foot presser lifting air-operated	0	0—3		0: all electric-operated 1: reversing air-operated 2: presser foot air-operated 3: all air-operated
P76	Number of trimming	0	0-9999		Adding 1 to the counter per trimming, clear to zero when the counter is full.
P77	Control of needle position signal output	0	0-3		0: The output of needle up position is effective at low 1: The output of needle down position is effective at low 2: The output of needle up position is effective at high 3: The output of needle down position is effective at high
P98	Parameter recover to default	0000h	0-9999		
P99	Technical parameter password	2222h	0-9999		

5. Table of error codes/cause/remedy

Error code	Cause	Remedy
Err 1	System error	Check whether the machine head is stuck, and then re-power, if the malfunction have not been solved yet, please contact after-sale service.
Err 2	Overload voltage	Please check whether the power supply voltage is normal, if the power supply voltage is higher than 265V, turn off the machine, and restart the machine until the power supply voltage is normal .
Err 3	Download voltage	Please whether check the power supply voltage is normal, if the power supply voltage is lower than 160V, turn off the machine, and restart the machine until the power supply voltage is normal.
Err 4	Motor code wheel error	Please check whether the motor electrical connection is normal.
Err 5	System error	Re-power , if the malfunction have not been solved yet ,please contact the after-sale service person.
Err 6	System error	Re-power , if the malfunction have not been solved yet ,please contact the after-sale service person.
Err 7	Motor lack phase	Please check whether the motor power cord is off or loose.
Err 8	Motor locked-rotor	1. Check whether the motor power cord is off. 2. Check whether the machine head is stuck. 3. Check whether motor code wheel cord is loose. 4.Check whether the needle up position is correct (at the case of thread trimming movement).
Err 9	Motor overload	1. Check whether the fabric is too heavy. 2. Check whether the machine head is stuck. 3. Check whether the needle up position is correct (at the case of thread trimming movement).
Err 11	Motor code wheel error	Please check whether the motor code wheel cord is loose.
Err 12	Foot-controller dropped off error	Please check whether the foot-controller connection is loose.
Err 13	Foot-controller was off when turning on the electricity	Please check whether the foot-controller is stuck.
Err 14	The time of using Electromagnet is too long	1. Check whether the needle up position is correct. 2. Check whether the fabric is too heavy or the line is too thick to cut the line normally.
Err 15	Brake circuit error	Please check whether the brake resistor cable is loose.
Err 17	Electromagnet overload current error	Electromagnet error, please check whether the electromagnet is broken or short circuit.
Err 18	Brake circuit error	Please check whether the brake resistor cable is loose.
Err 19—21	Located system error	Motor can continue to operate, but there are no needle count, needle location ,trimming/sweep and reverse stitch function. Please check whether the alnico is normal. Please check whether the machine head is stuck.

Err 22	Machine up position communication error	Please check whether the connection of the control panel and the drive is normal.
Err 23	Memory error	Re-power, if the error has not been solved yet ,please contact the after-sale service person.
Err 24	Machine head lubrication time is up	Add the lubrication oil , and then recover the operate time of machine head.
Err 26	Detected cloth when turning on the electricity	1. Take the cloth away and retry. 2.The cloth edge sensor setting is wrong, reset the type of cloth edge sensor. 3.The cloth edge sensor is broken.

If the error still can not be resolve, please contact the supplier .

6. Table of the Seven-Segment LED display value and actual value comparison

Figure part:

Actual character	0	1	2	3	4	5	6	7	8	9
Display character	0	1	2	3	4	5	6	7	8	9

English character:

Actual character	A	B	C	D	E	F	G	H	I	J
Display character	A	b	C	d	E	F	G	H	i	J
Actual character	K	L	M	N	O	P	Q	R	S	T
Display character	k	L	M	n	o	P	q	r	S	T
Actual character	U	V	W	X	Y	Z				
Display character	U	v	W	X	Y	Z				