

**GEM8950 SERIES
UNITARY DIRECT-DRIVE
AUTOMATIC NEEDLE-POSITION
LOCKSTITCH SEWING MACHINE**

一体型直驱自动停针位平缝机

使用说明书 & 零件样本

Operation Instruction & Parts Book

为了安全地使用，请您在使用之前一定阅读本使用说明书。另外，请您注意保管本使用说明书，以便随时查阅；零件更改设计时，恕不另行通知。

Read safety instructions carefully and understand them before using. Retain this Operation Instruction for future reference. Excuse for not noticement in advance while the design of the sparepart has to be changed.

非常感谢您购买本公司的工业缝纫机。在使用缝纫机之前，请仔细阅读<为了您的安全使用>和使用说明书。

工业缝纫机的特性之一，是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受伤的危险，所以请在接受过培训的人员或有熟练操作技术的人员的指导下，正确地使用本缝纫机。



为了您的安全使用

1. 安全使用的标记及其意义

本使用说明书及产品所使用的标记和图案记号是为了您的安全而正确地使用本产品，防止您及他人受到危害和损害。

表示方法及含义如下：

说明

 危险	如果忽视此标记而进行了错误的操作，必将导致人员死亡或重伤。
 注意	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。

图案和符号



符号△表示“应注意事项”。
三角中的图案表示必须要注意的内容。
(如左图的符号表示“注意受伤”。)



符号⊘表示“禁止”。



符号●表示“必须”。
圆圈中的图案表示必须要做的内容。
(如左图的符号表示“必须接地”。)

Thank you very much for buying our sewing machine. Before using your new machine, please read the safety instructions below and the explanations given in the Operation Instruction.



With industrial sewing machines, it is normal to carry out work while positioned directly in front of moving parts such as the needle and thread take-up lever, and consequently there is always a danger of injury that can be caused by these parts. Follow the instructions from training personnel and instructors regarding safe and correct operation before operating the machine so that you will know how to use it correctly.

SAFETY INSTRUCTIONS

1. Safety indications and their meanings

This instruction manual and 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. The meaning of these indications and symbols are given below.

Indications

	DANGER	The instructions which follow this term indicate situations where failure to follow the instructions will almost certainly result in death or severe injury.
	CAUTION	The instructions which follow this term indicate situations where failure to follow the instructions could cause injury when using the machine or physical damage to equipment and surroundings.

Symbols



..... This symbol (\triangle) 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".)



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



..... This symbol (\bullet) 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".)

⚠ 危险



打开控制箱盖时，必须先关闭电源开关并将电源插头从插座上拔下，至少等待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伤亡。

⚠ 注意

使用环境



应避免在强电气干扰源(如高频焊机)的附近使用缝纫机。
强电气干扰源可能会影响缝纫机的正确操作。



缝纫机的最佳工作环境是相对湿度在45%-85%的范围内，干燥或潮湿的环境均会影响缝纫机的正确操作。



电源电压的波动应该在额定电压的±10%以内的环境下使用。
电压大幅度的波动会影响缝纫机的正确操作。



使用时应避免暴露于直射的阳光下。
直射的阳光会影响缝纫机的正确操作。



电源容量应大于缝纫机的消耗能量。电源容量不足会影响缝纫机的正确操作。



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。



环境温度应在5°C-35°C的范围内使用。
低温或高温会影响缝纫机的正确操作。

安装



请让受过培训的技术人员来安装缝纫机。



固定电缆时，不要过度弯曲电缆或用卡钉固定得过紧，会引起火灾或触电的危险。



请委托购买商店或电气专业人员进行电气配线。



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。



缝纫机重约40公斤，安装工作必须由两人以上来完成。



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。



在安装完成前，请不要连接电源，如果误按启动开关，缝纫机动作会导致受伤。



使用润滑油或黄油时，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，这是引起发炎的原因。
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。



请在切断电源后，再拔掉电源插头。不然易成为控制箱发生故障的原因。



必须接地。接驳地线不牢固，是造成触电或误动作的原因。








DANGER













Wait at least 5 minutes after turning off the power switch and disconnecting 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.

CAUTION

Environmental requirements

- | | |
|--|---|
| <p> Use the sewing machine in an area which is free from sources of strong electrical noise such as high-frequency welders. Sources of strong electrical noise may cause problems with correct operation.</p> <p> Any fluctuations in the power supply voltages should be within $\pm 10\%$ of the rated voltage for the machine. Voltage fluctuations which are greater than this may cause problems with correct operation.</p> <p> The power supply capacity should be greater than the requirements for the sewing machine's electrical consumption. Insufficient power supply capacity may cause problems with correct operation.</p> | <p> The ambient temperature should be within the range of 5°C to 35°C during use. Temperatures which are lower or higher than this may cause problems with correct operation.</p> <p> The relative humidity should be within the range of 45% to 85% during use, and no dew formation should occur in any devices. Excessively dry or humid environments and dew formation may cause problems with correct operation.</p> <p> Avoid exposure to direct sunlight during use. Exposure to direct sunlight may cause problems with correct operation.</p> <p> 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.</p> |
|--|---|

Installation

- | | |
|---|---|
| <p> Machine installation should only be carried out by a qualified technician.</p> <p> Contact your dealer or a qualified electrician for any electrical work that may need to be done.</p> <p> The sewing machine weighs approximately 40kg. The installation should be carried out by two or more people.</p> <p> Don't connect the power cord until installation is complete, otherwise the machine may operate if the foot switch is depressed by mistake, which could result in injury.</p> <p> Be sure to connect the ground. If the ground connection is not secure, you run a high risk of receiving a serious electric shock, and problems with correct operation may also occur.</p> <p> Install the safety covers to the machine head and motor.</p> | <p> Hold the machine head with both hands when tilting it back or returning it to its original position. Furthermore, after tilting back the machine head, do not push the face plate side or the pulley side from above, as this could cause the machine head to topple over, which may result in personal injury or damage to the machine.</p> <p> All cords should be secured at least 25mm away from any moving parts. Furthermore, do not excessively bend the cords or secure them too firmly with staples, otherwise there is the danger that fire or electric shocks could occur.</p> <p> If using a work table which has casters, the casters should be secured in such a way so that they cannot move.</p> <p> Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they don't 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 diarrhoea. Keep the oil out of the reach children.</p> |
|---|---|

注意

缝纫



本缝纫机仅限于接受过安全操作培训的人员使用。



为了安全起见，在使用本缝纫机之前，请安装保护装置。如果未安装这些安全装置就使用缝纫机，会造成人身伤害及缝纫机损坏。



本缝纫机不能用于除缝纫以外的任何其他用途。



缝纫过程中不要触摸任何活动部件或将物件靠在运动部件上，因为这会导致受伤或缝纫机损坏。



发生下列情况时，请切断电源。否则误按动启动开关，缝纫机动作会导致受伤。

- 机针穿线时
- 更换机针或梭芯时
- 缝纫机不使用，或人离开缝纫机时



如果缝纫机操作中发生误动作，或者听到异常的噪声或闻到异常的气味，应立即切断电源。然后与购买商店或受过培训的技术人员联系。



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。



如果缝纫机出现故障时，请与购买商店或受过培训的技术人员联系。

清洁



在开始清洁作业前，请切断电源。如果误踩了脚开关，缝纫机动作会导致人员受伤。



使用润滑油或黄油时，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，这是引起发炎的原因，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。

CAUTION

Sewing



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



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



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



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



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.



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.



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

- When threading the needle
- When replacing the needle and bobbin
- When not using the machine and when leaving the machine unattended



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



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

Cleaning



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



Be sure to wear protective goggles and gloves when handling the lubricating oil and grease, so that they do not get into your eyes or onto your skin, otherwise inflammation can result. Furthermore, do not drink the oil or eat the grease under any circumstances, as they can cause vomiting and diarrhoea. Keep the oil out of the reach of children.

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平缝直驱一体化伺服系统 SH610D系列用户手册

1. 前言

对于缝纫机控制器和缝纫机机头，请使用指定的组合，以免发生系统故障或损坏。
本品仅适用于指定的缝制设备，请勿移动做其它用途。
使用中若存在任何疑问或对我们的产品及服务有任何意见或建议，请随时与我们联系。

2. 安全说明

1. 本产品须由受过专业培训的人员来安装或操作；安装调试和操作前，请仔细认真的阅读本手册。
2. 禁止在缝纫机控制器箱盖打开的状态下运行系统，运行中禁止触摸手轮和把手伸入机针下面。
3. 关闭电源后，请在10秒钟之后再打开电源。
4. 在进行以下操作前，请先关闭电源：
 - 1) 穿线和更换旋梭；
 - 2) 更换机针、压脚、针板、送布牙、支架、护针器、布导向器等；
 - 3) 调整踏板和挑线杆；
 - 4) 在控制器上插拔任何连接插头；
 - 5) 离开工作场所时。

3. 系统组成

系统由控制器、脚踏板控制器和电机组成：



图1. 控制器

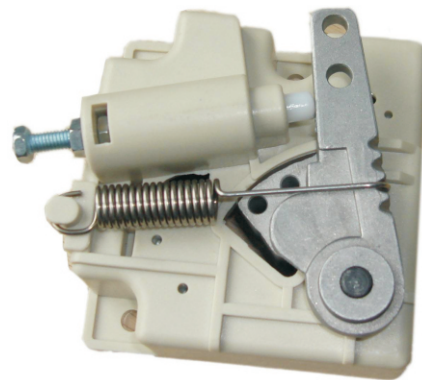


图2. 脚踏板控制器

控制系统的功能及性能指标详见下页表1。

表1 功能及性能指标对表

控制器型号	SH610D(平缝直驱一体化伺服)
电机类型	交流永磁同步电机
电源电压	AC 180~260V 50/60Hz
额定输出功率	400W
额定转速	3600rpm
最大扭矩	3 N*m
定位精度	±0.5°
上/下停针	★
过载保护	★
工作环境温度	0~40℃
相对湿度	≤90%
绝缘耐压	AC 1500V 1分钟
绝缘电阻	DC 500V, 50MΩ以上

(★表示具有此功能)

4. 系统接线及功能说明

系统接线以及操作功能操作图如图3, 图4所示

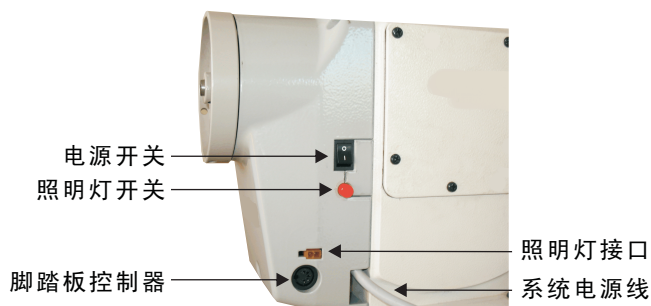


图3. 系统接口

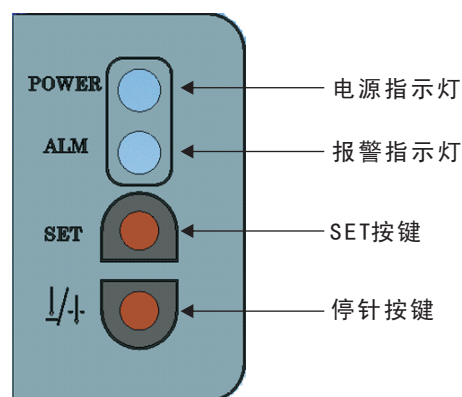


图4. 控制器前视图

4-1. 电源指示灯

当电源连接正常，电源指示灯亮。

4-2. 报警指示灯

1. 当系统出现异常报警，报警指示灯亮。
2. 按键按下有效时，指示灯闪烁一次。

4-3. 机头标定

1. 旋转手轮，确定机头位置。
2. 按住SET按键，报警指示灯亮，直到报警指示灯熄灭后释放按键，机头标定完成。

4-4. 上下停针功能

系统上电电机不转时，按下停针按键，报警指示灯闪一下，切换上下停针。

4-5. 照明灯接口接线图

1	引脚号	1	2
2	接线定义	+5V	GND
注：额定输出电压5VDC，最大输出电流<100mA			

4-6. 脚踏板操作

前踩脚踏板，可以使电机转速在0rpm到调速旋钮限定的速度之间无级调速；释放脚踏板回到中间位置，电机停止。

4-7. 调速模式

按住SET键给系统上电，进入调速模式。然后短按SET键可以使电机最高运行速度增加200rpm，短按停针按键可以使电机最高运行速度减少200rpm，从而可以使脚踏板的最高速度在200~4000rpm范围内调整。选择需要的电机最高运行速度之后给系统断电，调速完成。

4-8. 自拖动模式

正常工作模式下，同时按住SET键和上/下停针按键3s以上，然后同时松开，系统即进入自拖动模式。当给系统断电后，系统即退出自拖动模式。

5. 系统操作步骤

5-1. 系统上电

1. 确认电源开关处于关闭状态，连接脚踏控制器插头；
2. 连接电源插头，确认脚踏控制器处于自然状态，打开电源开关，电源指示灯显示。

5-2. 设定停针位置

1. 前踩一下脚踏板，然后松开脚踏板，在电机停止后，观察停针位置。
2. 根据需要，按下停针按键，切换上下停针。

5-3. 设定电机最高运行速度

1. 前踩脚踏板到底，观察电机最高运行速。
2. 电机停止后，根据需要旋转调速旋钮设定电机最高运行速度。

5-4. 系统运行

设定好停针位置和电机最大运行速度后，前踩脚踏板电机运行；释放脚踏板，电机停止运行。

5-5. 系统关电

运行完毕后，关闭电源开关，电源指示灯仍会持续显示20秒钟，直到电容放电完毕，电源指示灯熄灭。

6. 报警信息及处理

6-1. 报警信息

1. 系统具备过流、过压、堵转等保护，当出现以上保护时，进入保护状态，电机停止运行，报警指示灯显示。
2. 系统具备安全开关保护功能，当机头侧翻时，进入保护状态，报警指示灯显示，放下机头后，报警指示灯熄灭，报警解除。

6-2. 报警处理

1. 如果是安全开关引起的报警，进入保护状态，报警指示灯显示，脚踏操作无效，请确保机头处于正确位置，则报警解除。
2. 如果是其它原因引起的报警，进入保护状态，报警指示灯显示，脚踏操作无效，需要将电源开关关闭，转动手轮确保机头转动顺畅，然后重新打开电源开关，踩下脚踏板，如果再次出现报警，请关闭电源开关，然后报修。

Lockstitch Direct-Drive Integrated Servo System Sh610D Series User's manual

1.Introduction

Specified combinations shall be adopted for the controller and heads of sewing-machines, to avoid the failure and damage of the system.

The product shall be used for the specified sewing devices only, and shall not be used for other applications. If any problems exist in the using process, or you have some opinions and advices about our products and services, please contact us immediately.

2.Safety Instructions

Safety Specification

- 1.The product shall be installed and operated by the employees with professional training; the manual shall be read carefully before the installation and operation.
- 2.When the cover of sewing-machine controller is open, operating the system is prohibited. Do NOT touch the hand-wheel and Put the hand under the needle in operation.
- 3.When the power has been turned off, please turn on the power after 10 seconds.
- 4.When conducting the following operations, please turn off the power first:
 - (1). Threading and rotary shuttle change;
 - (2). Change needle, presser foot, throat plate, feed dog, folder, needle guard, cloth guide and other parts;
 - (3). Adjust the pedal and thread take-up lever;
 - (4). Plug or unplug any connecting plugs of the controller;
 - (5). Leave the working place.

3.Components of System

The system consists of controller, controller of pedal and motor.



Fig.1 Controller

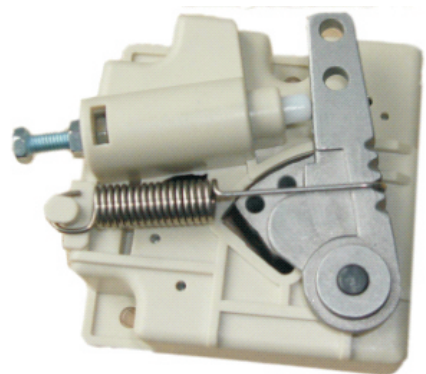


Fig.2 Controller of pedal

Refer to Table 1 for the functions and performance features of the control system.

Table 1 List of functions and performance features

Model of control system	SH610D (Lockstitch direct-drive integrated servo)
Motor type	AC permanent magnet synchronous motor
Power voltage	AC 180~260V 50/60Hz
Rated output power	400W
Rated rotational speed	3600rpm
Maximum torque	3N*m
Locating accuracy	±0.5°
Upper/down stop	Flat sewing
Overload protection	Lockstitch Sewing
Working environmental temperature	0~40°C
Relative humidity	≤90%
Insulation and voltage resistance	AC 1500V one minute
Insulation resistance	DC 500V, larger than 50MΩ

(★ indicates that the system has the function.)

4. Wiring and Functions of System

Refer to figure 3 and 4 for the wiring and operating functions of the system.

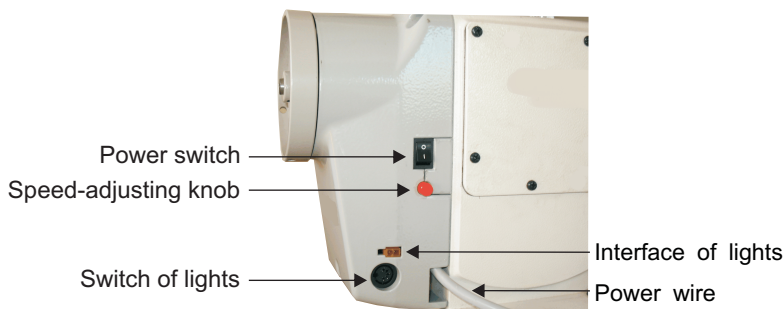


Fig. 3 Interfaces of system

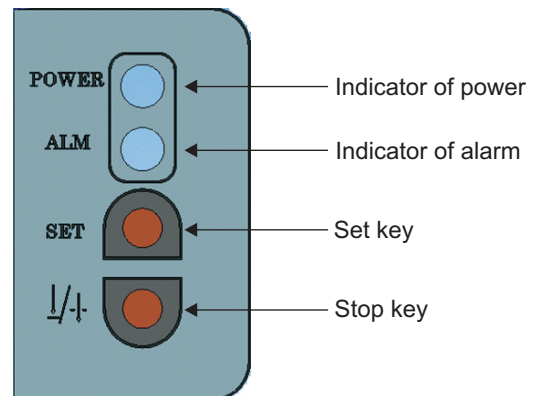


Fig. 4 Keys of controller

4-1. Indicator of power

When the power connection is normal, the indicator is on.

4-2. Indicator of alarm

1. When the system gives an alarm for malfunction, the indicator is on.
2. When the key is pressed validly, the indicator will flash once.

4-3. Calibration of machine head

1. Rotate the hand-wheel to determine the position of machine head;
2. Press on "SET" key, and the indicator of alarm will be turned on. Release the key until the indicator of alarm goes out, and the calibration of the machine head is completed.

4-4. Function of upper/down stop

When the motor of the system is stopped, press the "Stop" key, and the indicator of alarm will flash once, then the upper/down stop is shifted.

4-5. Wiring of light



Pin No.	1	2
Definition	+5V	GND
Notes: The rated output voltage is 5V DC, and the maximum output current < 100 mA.		

4-6. Operation of pedal

Trampling the pedal forward can adjust the rotational speed of the motor from 0 rpm to the setting speed limited by the speed-adjusting key in a stepless manner; release the pedal to the middle position, the motor will stop.

4-7. The highest-speed adjusting

Press the key "SET" and power on, the system will enter the speed adjusting mode. Press the key "SET" for one time, the highest motor speed will increase 200rpm; Press the key "Stop" for one time, the highest motor speed will decrease 200rpm. The highest speed of the motor can be adjusted in the scope of 200-5000 rpm. After setting the needed speed, turn off the power, and the speed adjusting process is end.

4-8. Auto-run mode

Under the normal working mode, press the key "SET" and "Stop" at one time for more than 3s, then release, the system will enter the auto-run mode. After turn off the power, the auto-run mode will be canceled.

5. Operating Procedures of System

5-1. Turn on system

1. Confirm the switch of power is closed, and connect the plug of pedal controller.
2. Connect the plug of power, and confirm the pedal control is in normal condition, turn on the power switch, then the indicator of power is turned on.

5-2. Set position of stop

1. Trample the pedal forward, and release it. When the motor stops, observe the position of stop.
2. According to the requirement, press "Stop" to shift upper/down stop.

5-3. Set maximum operating speed of motor

1. Trample the pedal forward to the end, and observe the maximum operating speed of the motor.
2. When the motor stops, rotate the speed-adjusting knob to set the maximum operating speed of the motor according to the requirement.

5-4. Operation of system

After the position of stop and maximum operating speed of the motor are set, trample the pedal to run the motor; release the pedal, the motor will stop.

5-5. Turn off system

When the operation is completed, turn off the power. The indicator of power will go out after a display of 20 seconds, when the discharge of capacitor is completed.

6. Alarming Information and Handling

6-1. Alarming information

1. The system has the functions of over-current, over-voltage, and rotor-lock protection. When one of these malfunctions occurs, it will be in the status of protection, and the motor will stop, and the indicator of alarm will be turned on. 2. The system has the function of safe switch protection. When the machine head is turned to one side, it will be in the status of protection, and the indicator of alarm will be turned on. Put down the machine head, the indicator of alarm will go out, and the alarm is removed.

6-2. Handling of alarm

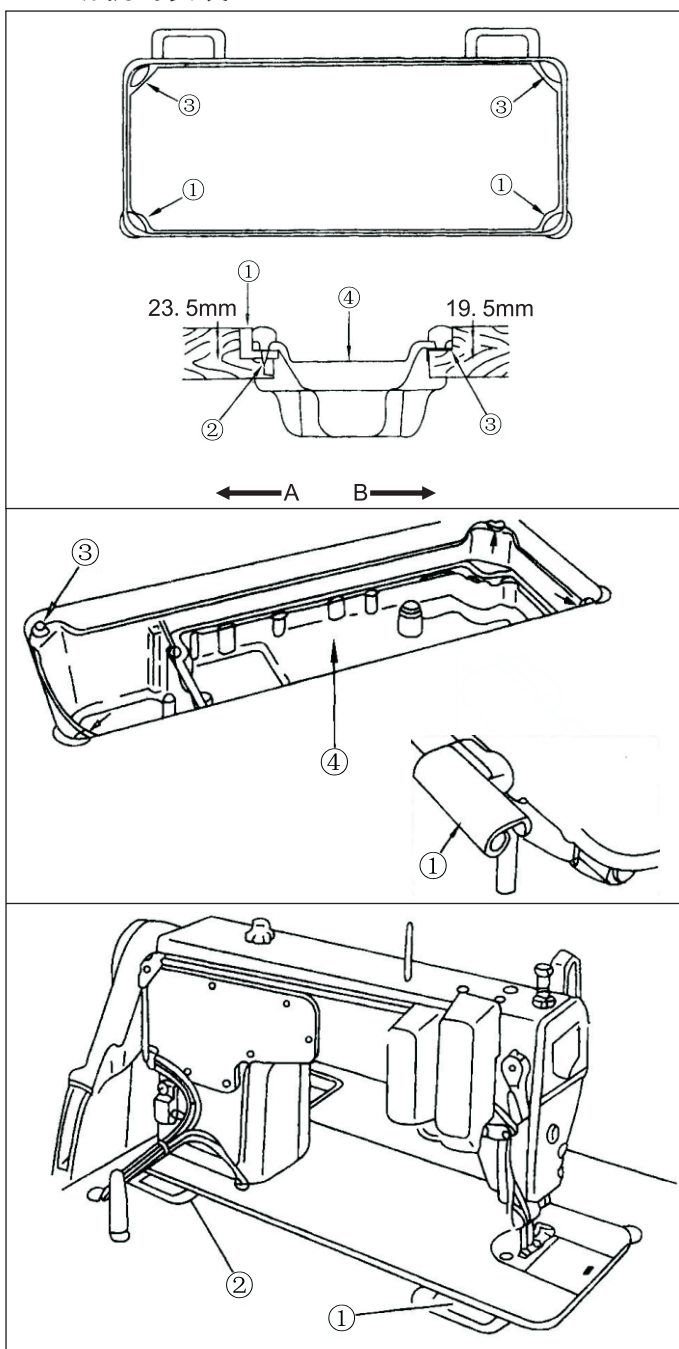
1. If the alarm is caused by safe switch, the machine will be in the status of protection, and the indicator of alarm will be turned on, then the operation of pedal is invalid. Please confirm that the machine head is at correct position, and then the alarm will be removed. 2. If the alarm is caused by other reasons, the machine will be in the status of protection, and the indicator of alarm will be turned on, then the operation of pedal is invalid. Please turn off the power, and rotate the hand-wheel to confirm the smooth rotation of machine head. Turn on the power again, trample the pedal. If the alarm reoccurs, please turn off the power, and report for a repair.

1. 规格 Specifications

缝料	缝速	最大针距	针距行程	压脚升程		机针	润滑油	电机功率
				手提	膝提			
中厚料	4000RPM	5	30.7	5.5	13	DBx1 14#	10#白油	600W

Application	Sewing speed (max)	Stitch length (max)	Needle bar store	Presser foot lifter		Needle	Lubricating	Motor power
				Hand lifter	Knee lifter			
For medium-weight materials	4000RPM	5	30.7	5.5	13	DBx1 14#	10#oil	600W

2. 缝纫机的安装 Installation



1. 油盘的安装

- 1) 把油盘放到台板沟的四角上。
- 2) 用螺钉②把前侧A的2个头部橡胶支座钉到台板的伸出部，用粘接剂粘接固定好铰链侧B的2个头部胶垫座③，然后把油盘④放上去。

EN

1. installing the oil pan

- 1) The oil pan should rest on the four corners of the machine table groove.
- 2) Fix two rubber seats ① on side A (operator's side) using nails ② as illustrated above. Fix two cushion seats ③ on side B (hinged side) using a rubber-based adhesive. Then place oil pan ④ on the fixed seats.

2. 铰链的安装

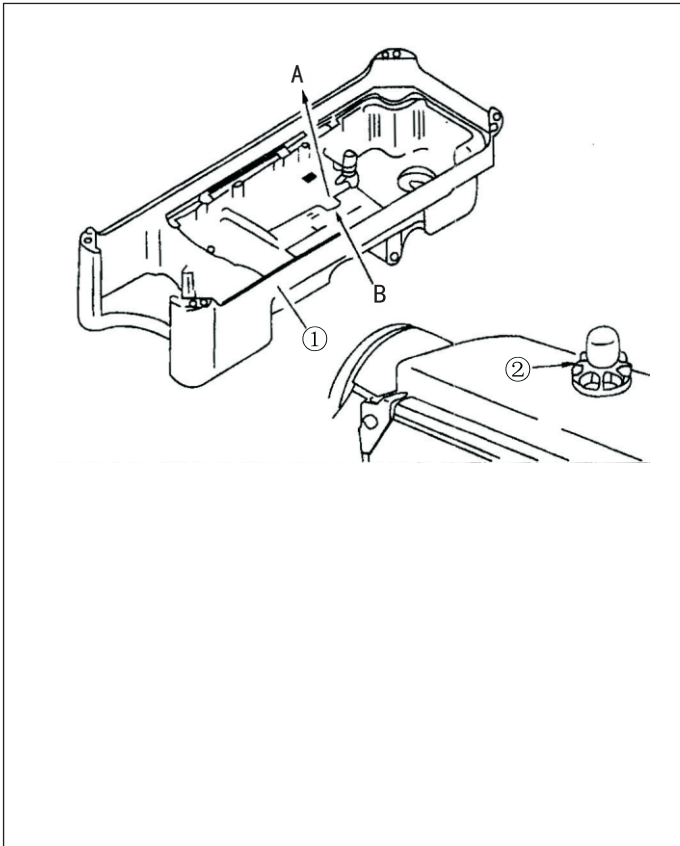
- 把铰链①放到台板孔上，对准台板橡胶支座②，把头部放到四角的机头胶垫③上。

EN

2. installing the hinge

- Fit hinge ① into the opening in the machine bed, and fit the machine head to table rubber hinge ② before placing the machine head on cushions ③ on the four corners.

3. 加油 Lubrication




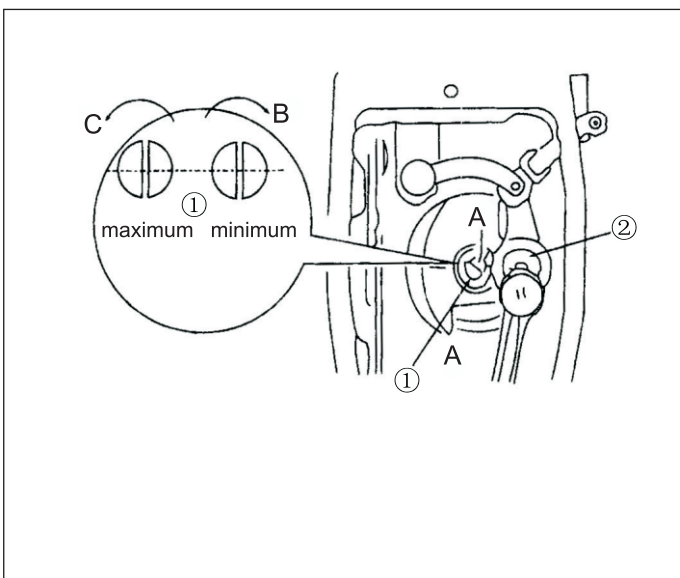
- 1) 把专用10号白油加入到油盘①，加到HIGH标记A的位置。
 - 2) 如果油面降到LOW标记B以下时，请再次把油加满。
 - 3) 加油后运转缝纫机，润滑正常时应能看到油窗②里油面跳动。
 - 4) 油跳动量的大小与油量的多少无关，因此不用担心。
- (注意)新缝纫机或较长时间没有使用的缝纫机，应进行约10分钟每分3000针的磨合运转。

EN

- 1) Fill oil pan ① with New Special Oil (10 white oil) up to HIGH mark.
 - 2) When the oil level lowers below LOW mark, refill the oil pan with the specified oil.
 - 3) When you operate the machine after lubrication, you will see splashing oil through oil sight window ② if the lubrication is adequate.
 - 4) Note that the amount of the splashing oil is unrelated to the amount of the lubricating oil.
- (Caution) When you first operate your machine after setup or after an extended period of disuse, run your machine at 3000 s.p.m. to 3500 s.p.m. for about 10 minutes for the purpose of break-in.

4. 面部油量调节 Adjusting the amount of oil supplied to the face plate parts

 注意 CAUTION	为了防止意外的起动造成的事故，请关掉电源后进行。 Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.
---	--



- 1) 转动油量调节销①，调节挑线杆和针杆曲轴部②的加油量。
- 2) 调节②的刻点A向图的B方向转动接近针杆曲轴②附近时油量最小。
- 3) 向图的C方向转动针杆曲轴转到对面时油量最大。

EN

- 1) Adjust the amount of oil supplied to the thread take-up and needle bar crank ② by turning adjust pin ①.
- 2) The minimum amount of oil is reached when marker dot A is brought close to needle bar crank ② by turning the adjust pin in direction B.
- 3) The maximum amount of oil is reached when marker dot A is brought, to the position just opposite pin in direction C.

5. 旋梭油量的确认 Amount of oil confirmation in the hook

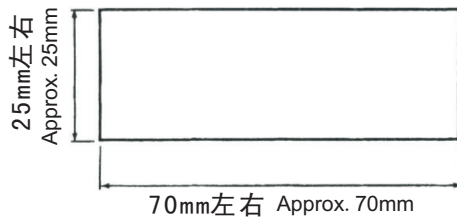


注意
CAUTION

旋梭以高速运转。为了防止人身伤害，请充分注意调节油量。
Be extremely careful about the operation of the machine since the amount of oil has to be checked by turning the hook at a high speed.

① 油量确认专用纸

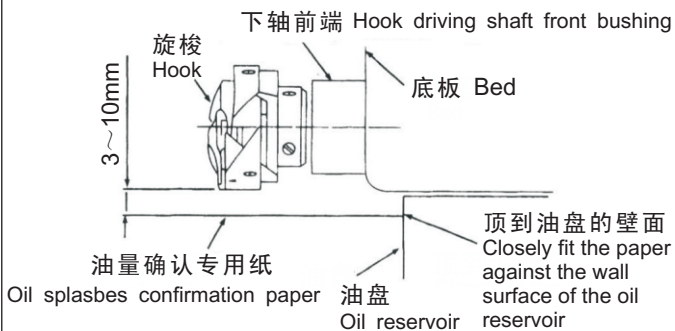
① Amount of oil confirmation paper



- 不用考虑纸的质量
- Use any paper available regardless of the material

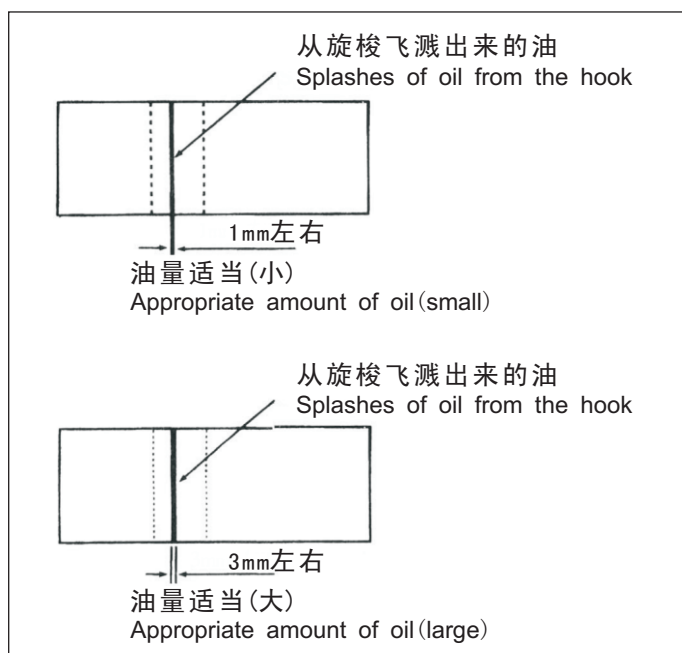
② 油量确认位置

② Position to confirm the amount of oil



- 把油量确认专用纸插到旋梭下面。
- Place the amount of oil (oil splashes) confirmation paper under the hook.

• 油量适量样品 Sample showing the appropriate amount of oil



进行下列2的作业时，请卸下推板，同时要充分注意手指不要碰到旋梭。

- 1) 机头冷却时，请进行3分钟左右的空载运转。(适当的间歇运转)
- 2) 请在缝纫机转动时将油量确认专用纸插入。
- 3) 请确认油盘的油面高度是否在HIGH和LOW范围内。
- 4) 油量确认时间为5秒钟。(用表来测定)

EN

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

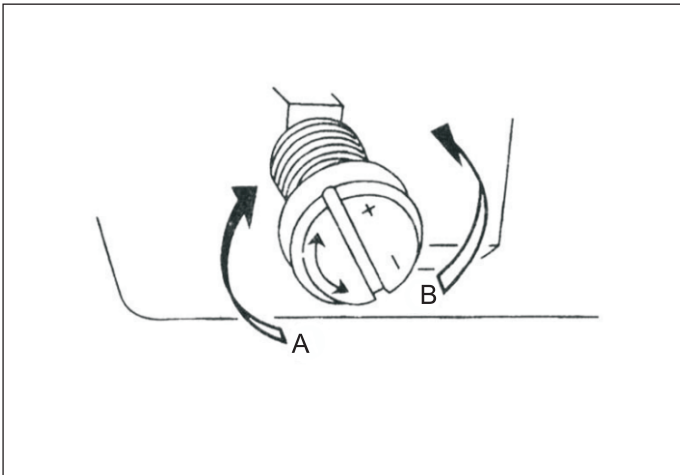
- 1.If the machine has not been sufficiently warmed up for operation, make the machine run idle for approximately three minutes.(Moderate intermittent operation.)
- 2.Place the amount of oil (oil splashes) confirmation paper under the hook while the sewing machine is in operation.
- 3.Confirm that the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

- 1) 左图样品根据缝制工序需要微调增减，但注意不要过大增加或减少。
(油量过少时，会烧坏旋梭(发热)。油量过多时，会玷污缝制品)
- 2) 油量应确认3次(3张)均无变化。

EN

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

6. 旋梭油量调整 Adjusting the amount of oil in the hook

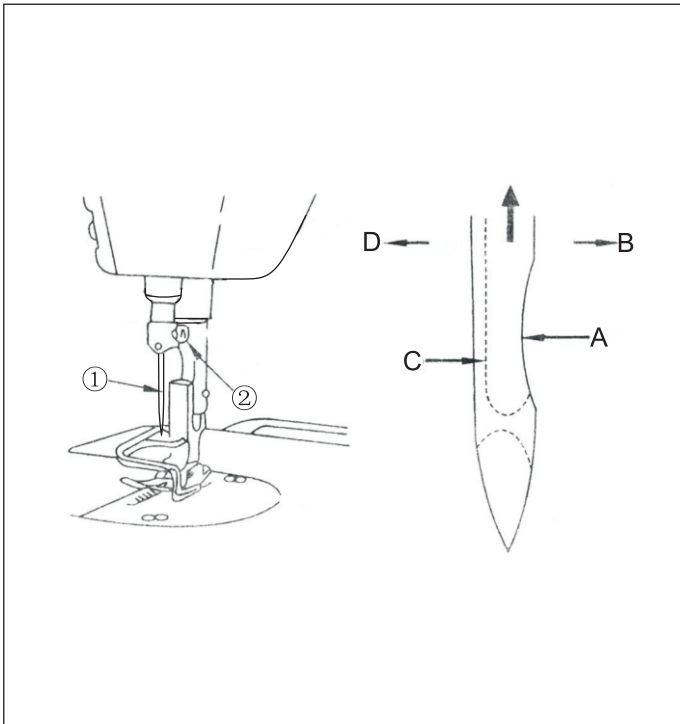


- 1) 把下轴前端部的油量调节螺丝向+方向(A方向), 转动油量增多, 向-方向(B方向)转动油量变少。
- 2) 油量调节螺丝调节后, 请进行30秒钟的空运转, 以确认油量。

EN

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

7. 机针的安装方法 Attaching the needle



请根据线的粗细、布料的种类选择适当的机针。

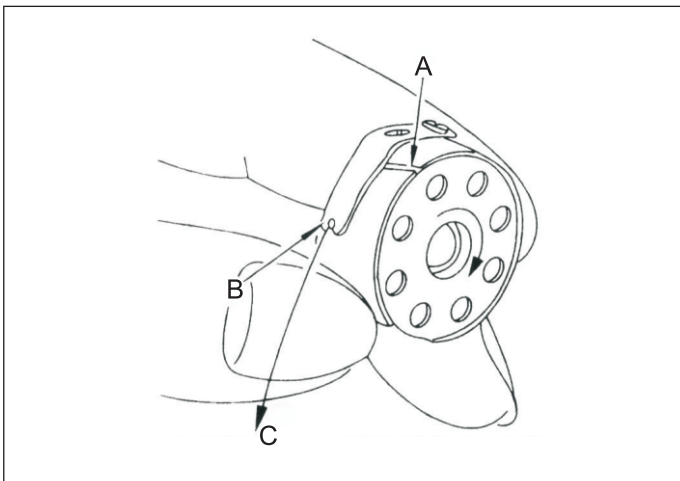
- 1) 转动带轮, 把针杆升到最高处。
- 2) 拧松机针固定螺丝②, 手拿机针把机针①凹部A横向转到B的方向。
- 3) 把机针插到针杆孔的深处。
- 4) 拧紧机针固定螺丝。
- 5) 确认针的长孔C在左横向D的方向。

EN

Select a proper needle size according to the count of thread and the type of material used.

- 1) Turn the handwheel until the needle bar reaches the highest point of its stroke.
- 2) Loosen screw ②, and hold needle ① with its indented part A facing exactly to the right in direction B.
- 3) Insert the needle fully into the hole in the needle bar in the direction of the arrow until the end of hole is reached.
- 4) Securely tighten screw ②.
- 5) Check that long groove C of the needle is facing exactly to the left in direction D.

8. 梭心的安装方法 Setting the bobbin into the bobbin case



- 1) 手拿梭心, 让线往左绕的方向, 把它放入梭壳。
- 2) 把线穿过梭壳的穿线口A, 然后把线往B方向拉, 从线张力弹簧下面的穿线口B拉出来。
- 3) 拉底线C, 确认梭心是否按箭头方向转动。

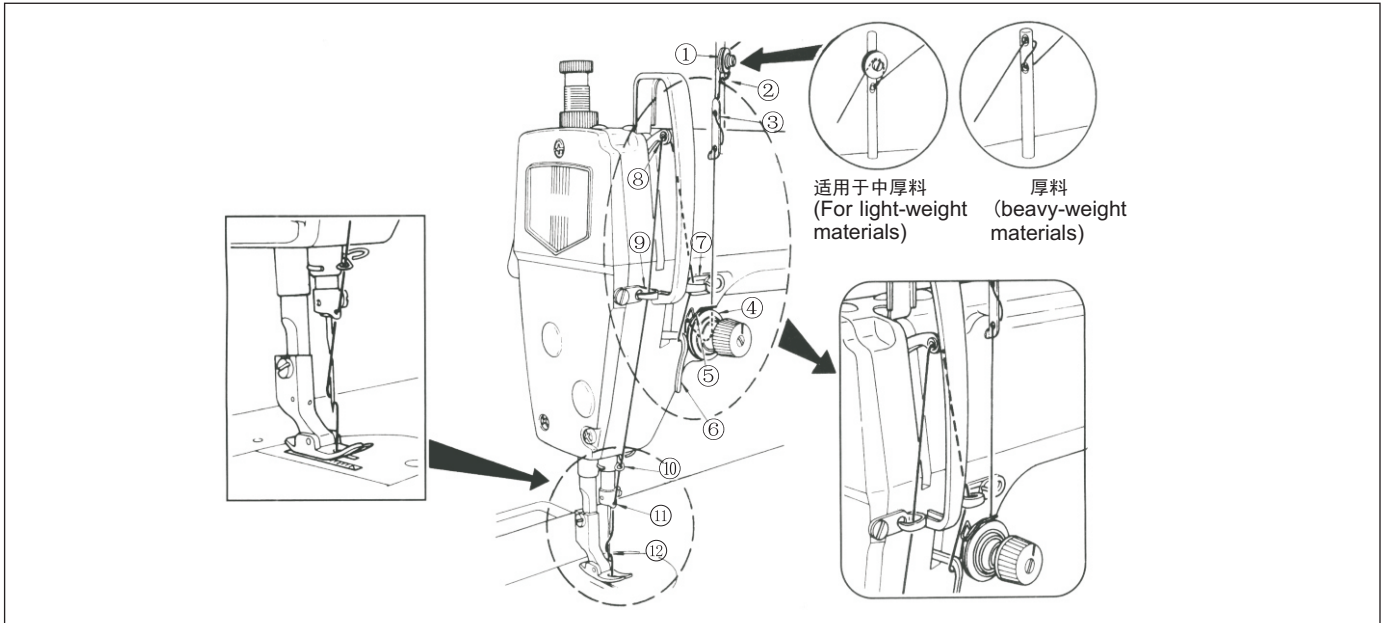
EN

- 1) Install the bobbin in the bobbin case so that the thread wound direction is clock wise.
- 2) Pass the thread through thread slit, and pull the thread in direction . By so doing, the thread will pass under the tension spring and come out from notch .
- 3) Check that the bobbin rotates in the direction of the arrow when thread is pulled.

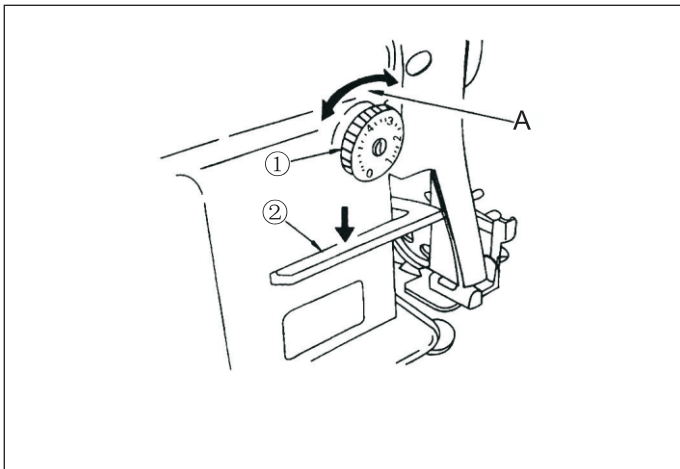
9. 上线穿线方法 Threading the machine head



为了防止意外的起动造成的事故，请关掉电源后进行。
Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.



10. 缝迹长度的调节 Adjusting the stitch length

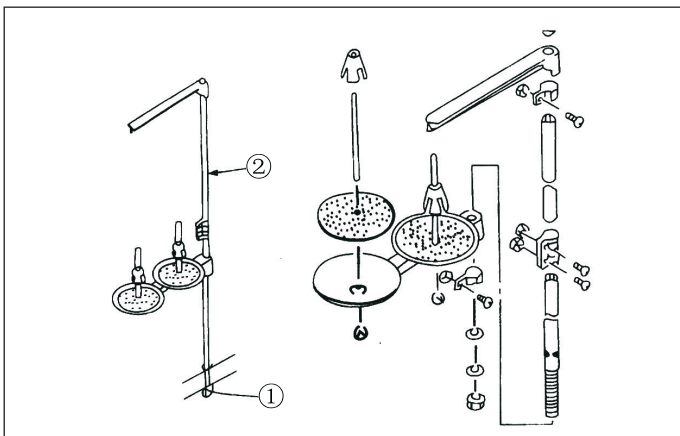


- 1) 沿箭头方向转动送布调节刻度盘①，并把希望的数字对准机臂的刻点A。
- 2) 刻度盘的数字为mm。
- 3) 从大往小变更送布刻度时，请向箭头方向按下倒缝扳手②的同时转动调节刻度盘①进行调节。

EN

- 1) Turn stitch length dial ① in the direction of the arrow, and align the desired number to marker dot A on the machine arm.
- 2) The dial calibration is in millimeters.
- 3) When you want to decrease the stitch length, turn stitch length dial ① while pressing feed lever ② in the direction of the arrow.

11. 线架的安装 Installing the thread stand

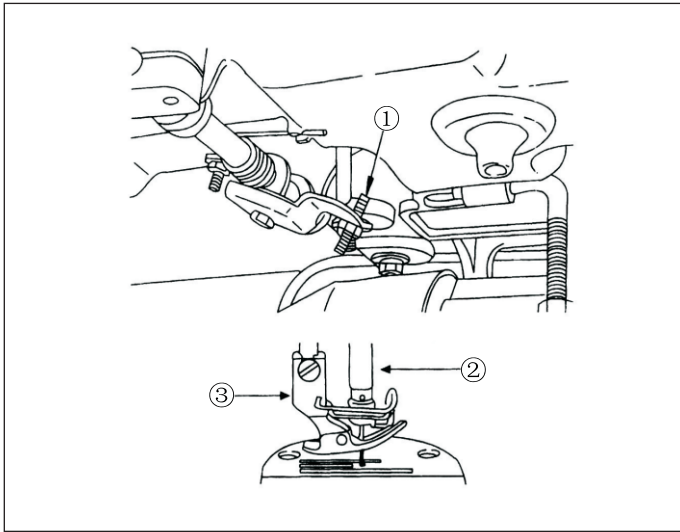


- 1) 如图所示那样把线架安装到台板孔上。
- 2) 用固定螺母①固定线架。
- 3) 顶线配线时，请把电源线从线架杆②中穿过。

EN

- 1) Assemble the thread stand unit, and insert it in the hole in the machine table.
- 2) Tighten locknut ① to fix the thread stand.
- 3) For ceiling wiring, pass the power cord through spool rest rod ②.

12. 膝动提升高度的调整 Adjusting the height of the knee lifter

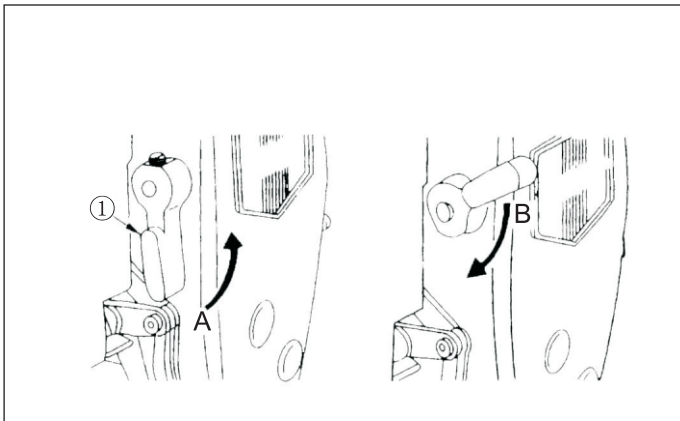


- 1) 膝动提升压脚的标准高度为10mm。
- 2) 调节膝动提升调节螺丝①可以把压脚最高提升到13mm。（薄料机种最大只能调到9mm）
- 3) 压脚提升到10mm以上时，调整时请注意不要让针杆②的前端在最下方时也不能碰到压脚③。

EN

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

13. 压脚提升 Hand lifter

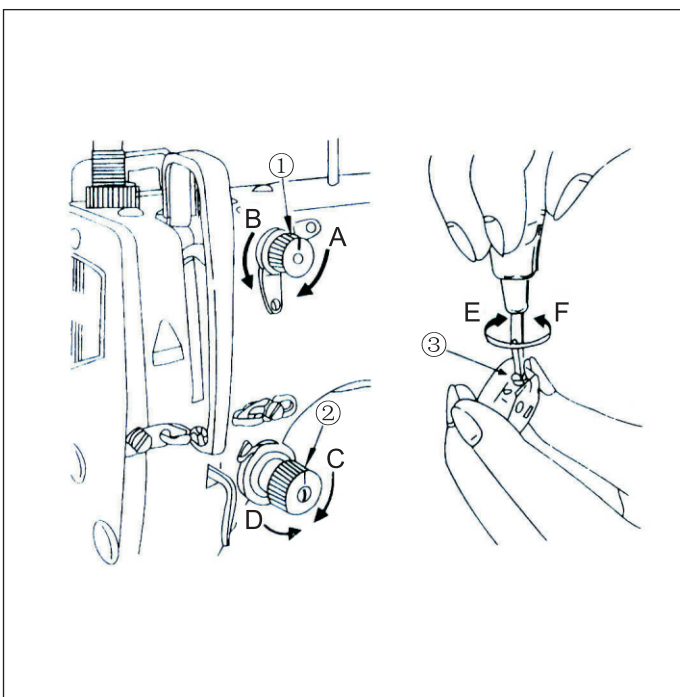


- 1) 让压脚停止到上升的位置，把压脚扳手①提到A的方向。
- 2) 压脚约上升5.5mm（薄料机种为4mm）停止，压脚扳手向B的方向落下压脚则返回原来的位置。

EN

- 1) To stop the machine with its presser foot up, turn hand lifter lever ① in the direction A.
- 2) The presser foot will go up about 5.5mm (4mm for weak material) and stop. The presser foot will go back to its original position when hand lifter lever is turned down in direction B.

14. 线张力的调整 Adjusting the needle thread tension



1. 上线张力的调整

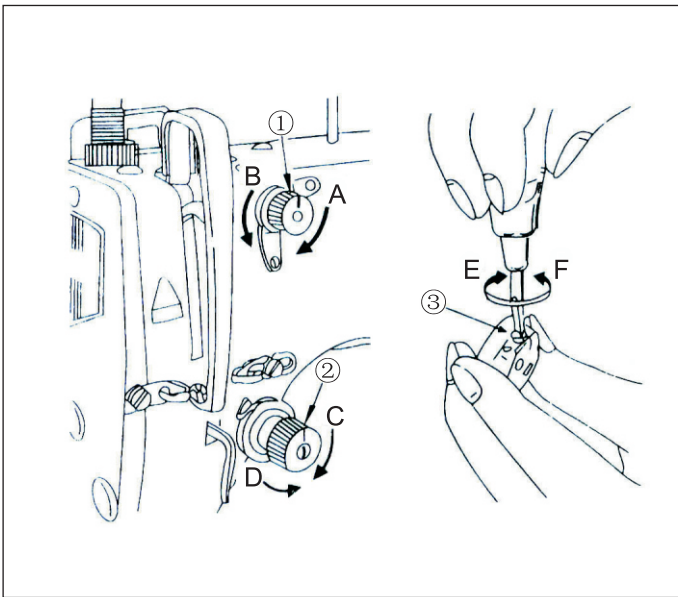
- 1) 把第一线张力螺母顺时针方向（A方向）转动，上线张力变强。
- 2) 把第一线张力螺母逆时针方向（B方向）转动，上线张力变弱。
- 3) 把线张力螺母2向右C方向逆转，上线张力变强。
- 4) 向左D的方向转动则变弱。

EN

1. Adjusting the needle thread tension

- 1) As you turn thread tension No.1 nut ① clock wise (indirection A), the thread remaining on the needle after thread trimming will be shorter.
- 2) As you turn nut ① counter clock wise (indirection B), the thread length will be longer.
- 3) As you turn thread tension nut ② clock wise (indirection C), the needle thread tension will be increased.
- 4) As you turn nut ② counter clock wise (indirection D), the needle thread tension will be decreased.

14. 线张力的调整 Adjusting the needle thread tension



2. 底线张力的调整

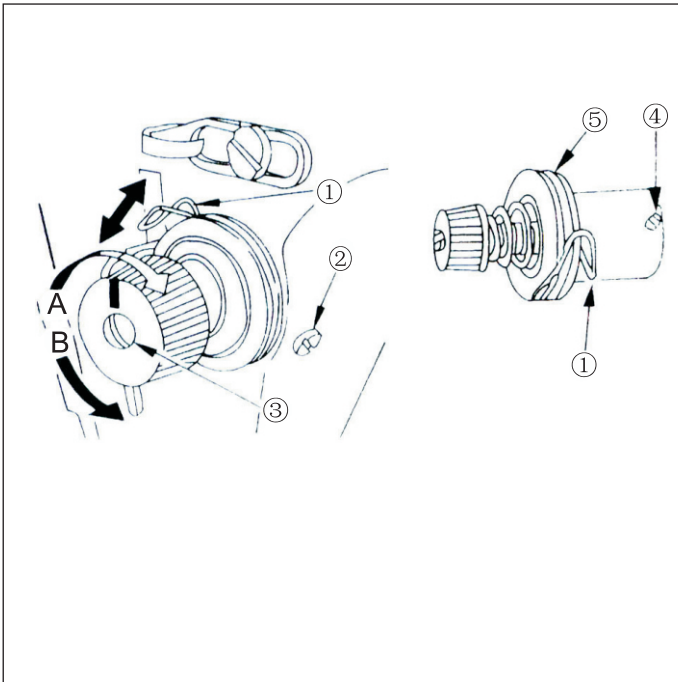
- 1) 把底线张力螺丝3向右E的方向转动，底线张力变强。
- 2) 向左F的方向转动则变弱。

EN

2. Adjusting the bobbin thread tension

- 1) As you turn tension adjust screw ③ clock wise (indirection E), the bobbin thread tension will be increased.
- 2) As you turn screw ③ counter clock wise (indirection F), the bobbin thread tension will be decreased.

15. 挑线弹簧 Thread take-up spring



1. 要改变拉挑弹簧1的行程时

- 1) 拧松固定螺丝2.
- 2) 把夹线螺钉3向右A的方向转动则变大。
- 3) 向左B的方向转动则变小。

2. 要改变拉挑弹簧1的压力时

- 1) 拧松固定螺丝2，卸下张力器（组件5）。
- 2) 拧松夹线螺钉固定螺丝4进行调整。
- 3) 把夹线螺钉3向右A的方向转动则变强。
- 4) 向左B的方向转动则变弱。

EN

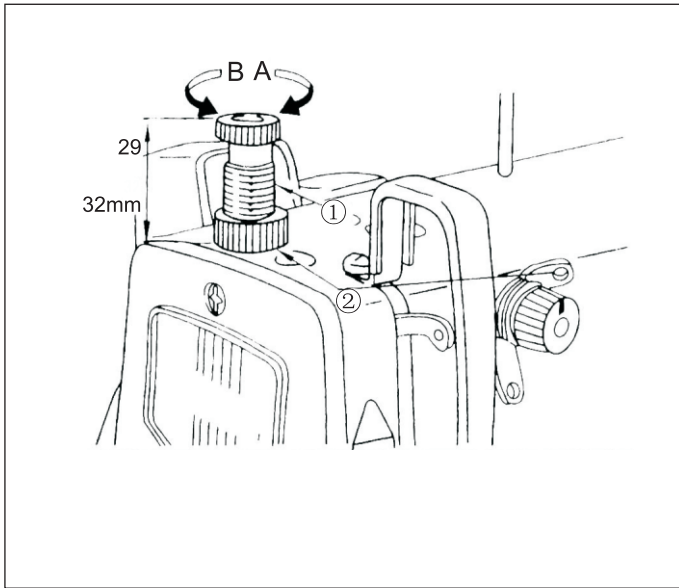
1. Changing the stroke of thread take-up spring ①①

- 1) Loosen setscrew ②.
- 2) As you turn tension post ③ clock wise (indirection A), the stroke of the thread take-up spring will be increased.
- 3) As you turn the knob counter clock wise (indirection B), the stroke will be increased.

2. Changing the pressure of thread take-up spring ①

- 1) Loosen setscrew ②, and remove thread tension (asm.) ⑤.
- 2) Loosen setscrew ④.
- 3) As you turn tension post ③ clock wise (indirection A), the pressure will be increased.

16. 压脚压力的调节 Presser foot pressure

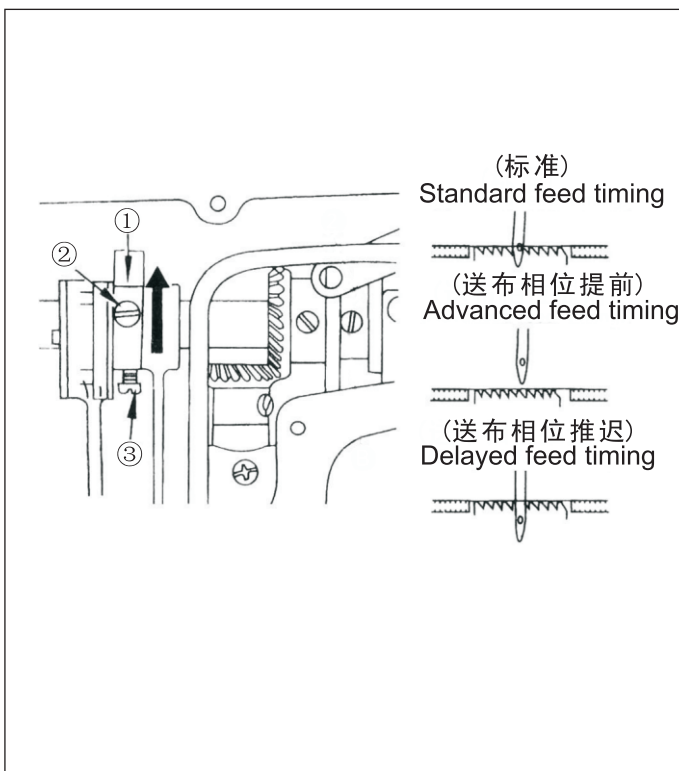


- 1) 拧紧螺母②，把压脚调节螺钉①向右A方向转，力变强。
- 2) 线左B方向转，力变弱。
- 3) 调整后，拧紧螺母②。
- 4) 一般布料时，压脚调节螺钉的标准高度为29~32mm。

EN

- 1) Loosen nut ②. As you turn presser spring regulator ① clockwise (in direction A), the presser foot pressure will be increased.
- 2) As you turn the presser spring regulator counter-clockwise (in direction B), the pressure will be decreased.
- 3) After adjustment, tighten nut ②.
- 4) For general fabrics, the standard height of the presser spring regulator is 29 to 32 mm.

17. 送布相位的调节 Adjusting the feed timing




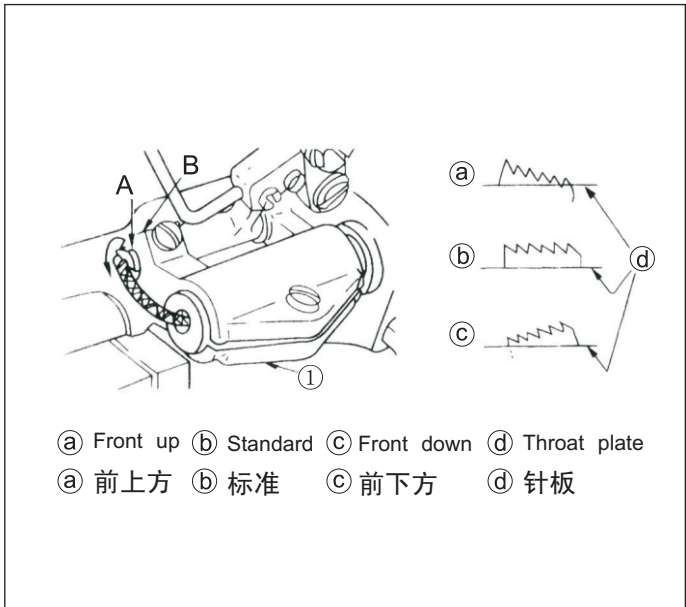
- 1) 拧松送布偏心凸轮①的固定螺丝②、③，朝箭头方向或反箭头方向移动送布偏心凸轮，然后拧紧固定螺丝。
- 2) 标准调节位置是送布牙从针板往下落时，送布牙上面与针孔上端对准针板上面的位置。
- 3) 提早送布相位以防止布偏斜时，请向箭头方向移动送布偏心凸轮。
- 4) 为了良好的紧线而推迟相位时，请逆箭头方向移动偏心凸轮。

EN

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

18. 送布牙的倾斜 Tilt of the feed dog

 <p>注意 CAUTION</p>	<p>为了防止意外的起动造成的事故，请关掉电源后进行。 Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.</p>
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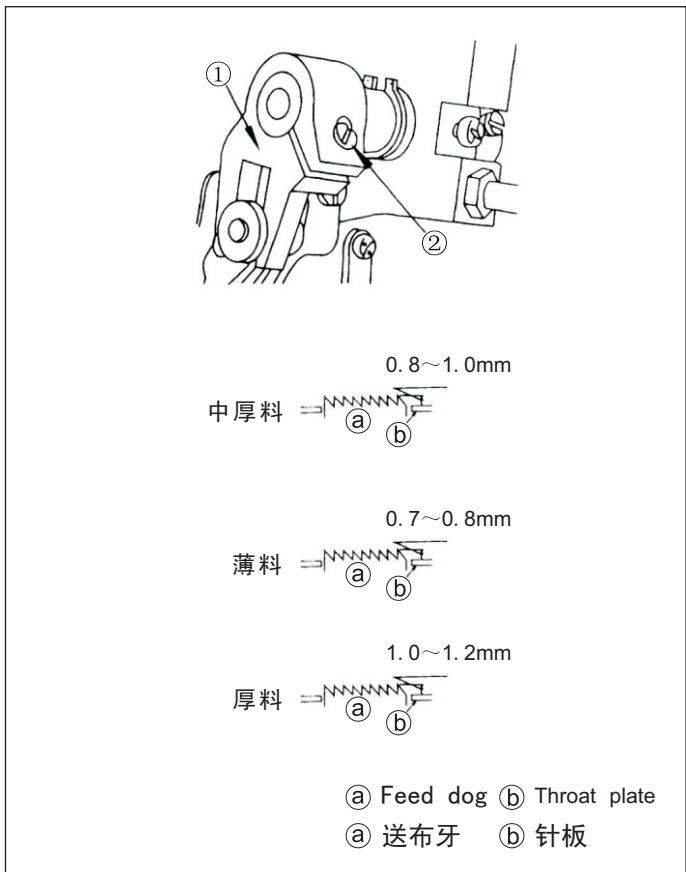
- 1) 标准倾斜(水平)度是送布轴的刻点A和牙架座①的B部下降到20度水平送布轴侧的位置。
- 2) 为了防止缝制皱褶，向前抬起送布牙时，请拧松固定螺丝，把螺丝刀插入送布轴，然后沿箭头方向转90度。
- 3) 为了减少布的偏斜，向前下降送布牙时，请沿与前头方向相反方向转90度。

EN

- 1)The standard tilt (horizontal of the feel dog is obtained when marker dot A on the feed bar shaft is aligned with marker dot A on feed rocker ①.
- 2)To tilt the feed dog with its front up in order to prevent puckering, loosen the set screw, and turn the feed bar shaft 90 degrees in the direction of the arrow, using a screw driver.
- 3)To tilt the feed dog with its from down in order to prevent uneven material feed, turn the feed bar shaft 90 degrees in the opposite direction from the arrow.

19. 送布牙的高度 Height of the feed dog

 <p>注意 CAUTION</p>	<p>为了防止意外的起动造成的事故，请关掉电源后进行。 Turn OFF the power before starting the work so as to prevent accidents caused by abrupt start of the sewing machine.</p>
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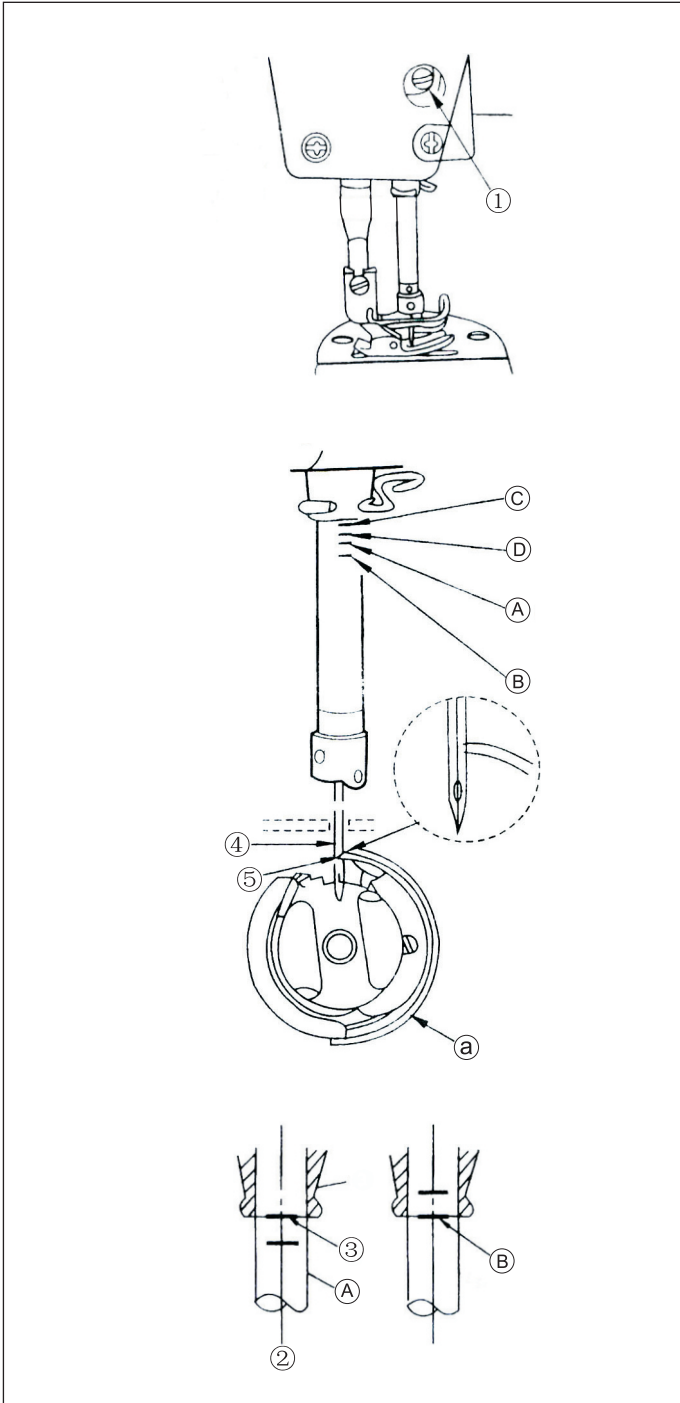


- 1) 送布牙a从针板b突出的量请调整为0.8~1.0mm。(厚料时为1.0~1.2mm)。
- 2) 缝制薄料时，送布牙伸出过高时容易起褶。(0.7~0.8mm为适当。)
- 3) 调节送布牙时。
 - 拧松上下拾牙叉形曲柄①的固定螺丝②。
 - 上下移动牙架进行调节。
 - 然后拧紧固定螺丝。
 (注意) 拧得不紧时，会损伤叉口部。

EN

- 1) The feed dog is factory-adjusted so that it jut out from the throat plate surface 0.75 to 0.85 mm (For heavy-weight materials:1.15 to 1.25 mm)
- 2) If the feed dog just out too much puckering may result when sewing tight-weight materials (For light-weight materials: 0.7 to 0.8 mm)
- 3) To adjust the height of the feed dog
 - Loosen screw ② of crank ①.
 - Move the feed barcker up or down to make adjustment.
 - Securely tighten screw ②.
 (Caution) If the clamping pressure is insufficient, the forked portion will wear out.

20. 机针与旋梭的关系 Needle-to-hook relationship



1) 转动带轮，让针杆降到最下点，然后拧松针杆连接柱固定螺丝①。

(决定针杆高度)

2) (DB针时) 把针杆②的刻线A对准针杆下轴套③的下端，然后拧紧针杆连接柱固定螺丝①。

(DA针时) 把针杆②的刻线C对准针杆下轴套③的下端，然后拧紧针杆连接柱固定螺丝①。

(决定旋梭a的安装位置)

3) (DB针时) 拧松3颗旋梭固定螺丝，转动带轮在针杆②上升的方向，把刻线B对准针杆下套③的下端。

(DA针时) 拧松3只旋梭固定螺丝，转动带轮在针杆②上升的方向，把刻线D对准针杆下套③的下端。

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

(注意) 间隙过小的话，会损伤旋梭尖，间隙过大的话，会跳针。

EN

1. Adjust the timing between the needle and the hook as follows:

1) Turn the handwheel to bring the needle bar down to the lowest point of its stroke, and loosen set screw ① (Adjusting the needle bar height)

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

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

(Adjusting position of the hook A)

3) (For a DB needle) Loosen the three hook setscrews, turn the handwheel, and align marker line B on ascending needle bar ② with the bottom end of needle bar lower bushing ③.

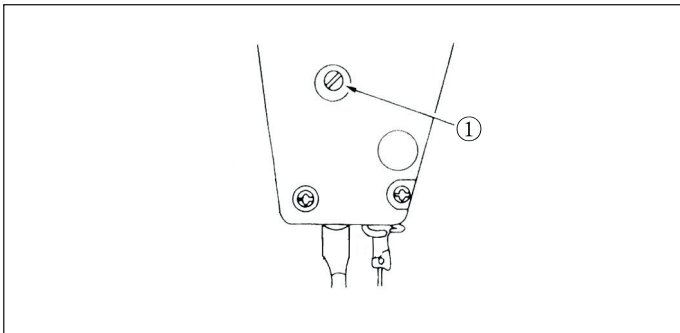
(For a DA needle) Loosen the three hook setscrews, turn the handwheel, and align marker line D on ascending needle bar ② with the bottom end of needle bar lower bushing ③.

4) After making the adjustments mentioned the above steps align hook blade point ⑤ with the center of needle ④.

Provide a clearance of 0.04 mm to 0.1 mm (reference value) between the needle and the hook, then securely tighten setscrews in the hook.

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

21. 压脚高度的调节 Adjusting the height of the presser foot



1) 变换压脚高度或角度时，请拧松压脚杆的固定螺丝①进行调节。

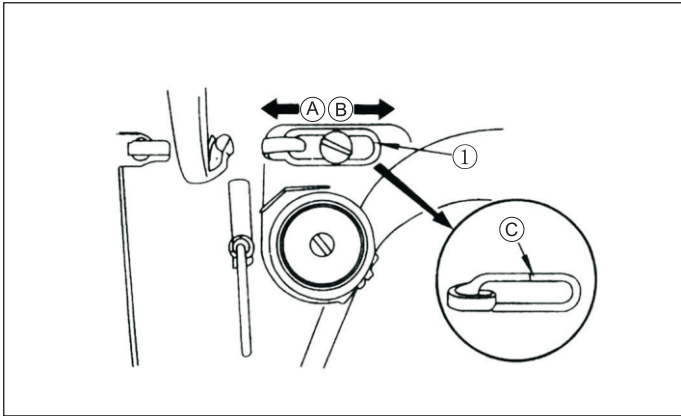
2) 调节后，再拧紧固定螺丝。

EN

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

2) After adjustment, securely tighten the setscrew ①.

22. 挑线杆挑线量的调节 Adjusting the thread take-up stroke

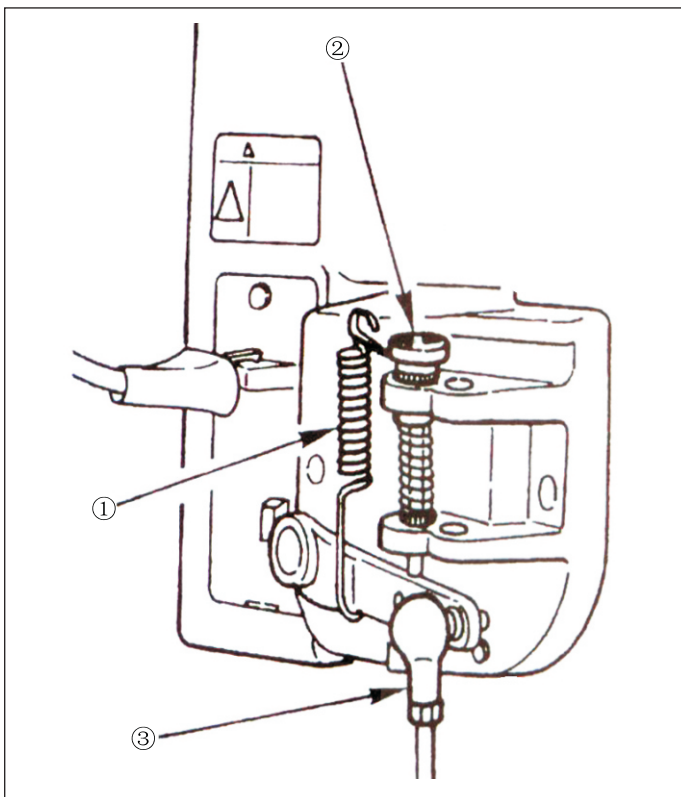


- 1) 缝制厚料时，把导线勾①向左A的方向移动，挑线量变大。
- 2) 缝制薄料时，把导线勾①向左B的方向移动，挑线量变小。
- 3) 导线勾①的刻线C在螺丝的中心位置时是标准位置。

EN

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

23. 踏板压力和行程 Pedal pressure and pedal stroke

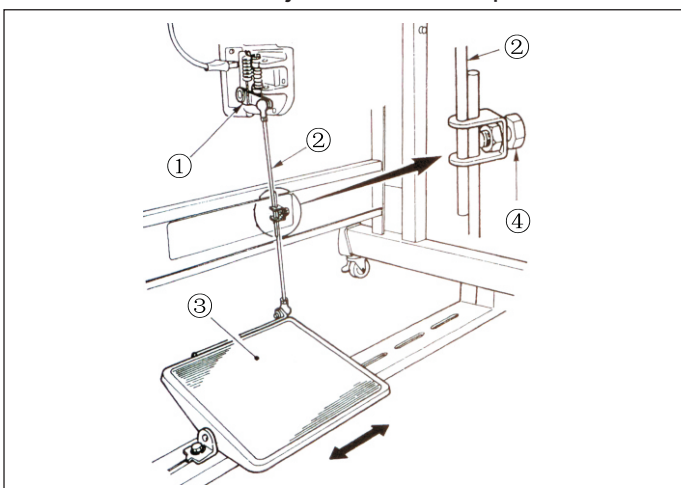


1. 踏板踩踏压力的调整
 - 1) 摘下踏板压力调节弹簧①进行调节。
 - 2) 把弹簧挂到左侧压力变轻。
 - 3) 挂到右侧压力变大。
2. 踏板返还力的调整
 - 1) 用返踩调节螺丝②可以进行调节。
 - 2) 拧紧调节螺丝压力变大。
 - 3) 拧松螺丝压力变轻。
3. 踏板踩踏行程的调整
 - 1) 把连接杆③安装到左侧的孔内，行程变小。

EN

1. Adjusting the pressure required to depress the front part of the pedal
 - 1) This pressure can be changed by altering the mounting position of pedaling pressure adjust spring ①
 - 2) The pressure decreases when you hook the spring on the left side.
 - 3) The pressure increases when you hook the spring on the right side.
2. Adjusting the pressure required to depress the back part of the pedal.
 - 1) This pressure can be adjusted using regulator screw ②.
 - 2) The pressure increase as you turn the regulator screw in.
 - 3) The pressure decrease as you turn the screw out.
3. Adjusting the pedal stroke
 - 1) The pedal stroke decreases when you insert connecting rod ③ into the left hole.

24. 踏板的调整 Adjustment of the pedal



1. 连接杆的安装
 - 1) 向箭头方向移动踏板调节板③，让马达控制杆①和连接杆②成一直线。
2. 踏板的角度
 - 1) 调节连接杆的长度即可以改变踏板的角度。
 - 2) 拧松调节螺丝④，移动连接杆②进行调节。

EN

1. Installing the connecting rod
 - 1) Move pedal ③ to the right or left as illustrated by the arrows 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 ②.

25. 保养 Cleaning

为了爱护缝纫机，保持良好的性能，每天都要保养机器，如长时间放置，请按照下面的保养顺序进行。
The following cleaning operations should be carried out each day in order to maintain the performance of this machine and to ensure a long service life.

⚠ 注意CAUTION



作业前请切断电源开关。避免误踩踏板启动缝纫机而受伤。由于电机惯性作用，切断电源后，电机还会继续运动，直到它完全停止后才能进行操作。

Turn off the power switch before carrying out cleaning. The motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work. The machine may operate if the treadle is pressed by mistake, which could result in injury.

使用润滑油时，要佩带保护眼镜和手套遮盖皮肤以免引起炎症。

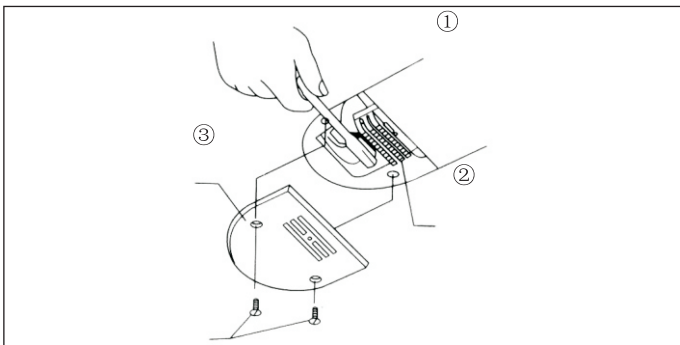
润滑油不能饮用，以免发生痢疾和呕吐。

请不要放置在孩子可能触及的地方。

Be sure to wear protective goggles and gloves when handling the lubricating oil, so that no oil gets into your eyes or onto your skin, otherwise inflammation can result.

Furthermore, do not drink the oil under any circumstances, as it can cause vomiting and diarrhoea.

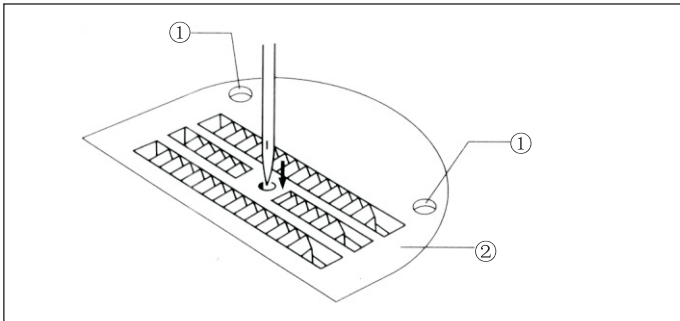
Keep the oil out of the reach of children.



1. 抬起压脚。
2. 取出两个紧固螺钉①，取下针板②。
3. 用牙刷等物清扫送布牙③上的灰尘。
4. 将两个紧固螺钉②装进针板①。

EN

1. Raise the presser foot.
2. Remove the two screw 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 ③ with the two screws ①.



5. 慢慢转动缝纫机主动轮，机针应准确无误进入针板②针孔的中心。

如果机针不能进入针板孔中心时，确认机针是否弯曲。松开2个紧固螺钉①后，针板②，是否回原位。

6. 转动缝纫机上轮，使机针上升到针板②上面，确认针尖是否损坏，针尖损坏时，要换机针。

EN

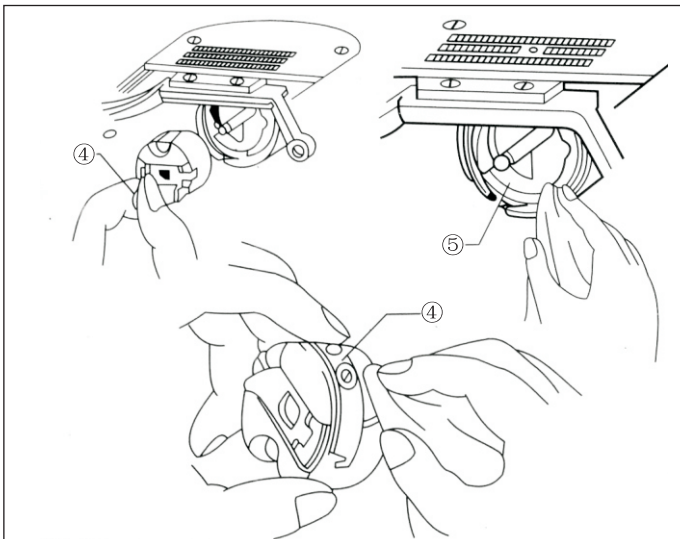
5. Turn the machine pulley slowly and check that the needle is lowered through the center of the hole in the needle plate ②.

*If the needle does not go through the center.

·Check that the needle is not bent.

·Loosen the two screws ① and then re-seat the needle plate ②.

6. Turn the machine pulley to raise the needle above the needle plate ② and then check that the tip of the needle is not blunt.



7. 放倒缝纫机。

8. 取下梭心套④。

9. 用软布清扫旋梭⑤的灰尘，查看一下是否有损坏

10. 从梭心套④中取出梭心，用布擦拭梭心套。

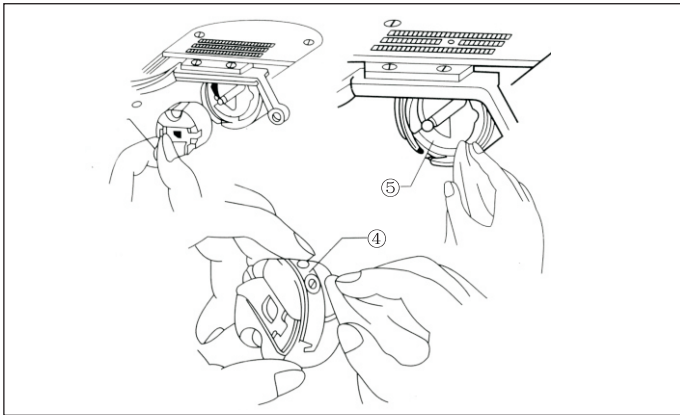
11. 把梭心装入梭心套④，把梭心套装入旋梭。

EN

7. Tilt back the machine head.

8. Remove the bobbin case ④.

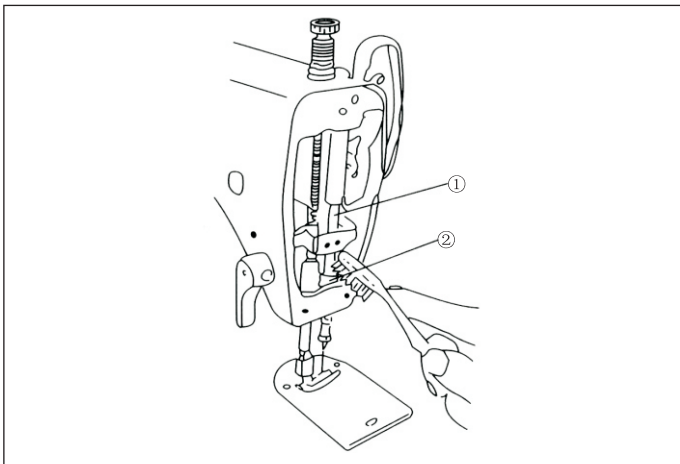
25. 保养 Cleaning



9. 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.

10. Remove the bobbin from the bobbin case ④ and clean the bobbin case ④ with a cloth.

11. Insert the bobbin into the bobbin case ④ and then place the bobbin case ④ back into the machine.



12. 定期打开面板。

13. 用刷子或布清扫针杆①和针杆下轴套②上的堆积纤维，打扫干净。

14. 装上面板,用螺钉紧固。

※如不定期清扫,有引起渗、漏油、污染织物的可能。

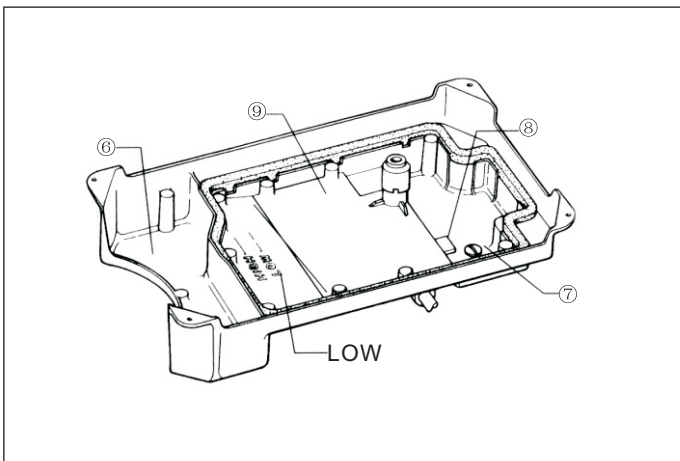
EN

12. To open face plate regularly.

13. Wipe off any fibre from needle bar ① and needle bar bush ② with a soft wike bush or a soft cloth.

14. Put face plate back securely tighten the screw.

* If not clean it regularly it may cause oil teak, result in making the textile dirty.



15. 用布擦拭油污⑥

16. 当右面低于 <LOW> 刻线时, 补充润滑油。

※请使用本公司指定的10#润滑油。

※润滑油脏时, 取下放油螺钉⑦, 调换新的润滑油。磁块⑧和油盘⑨中的污物要清除干净。

EN

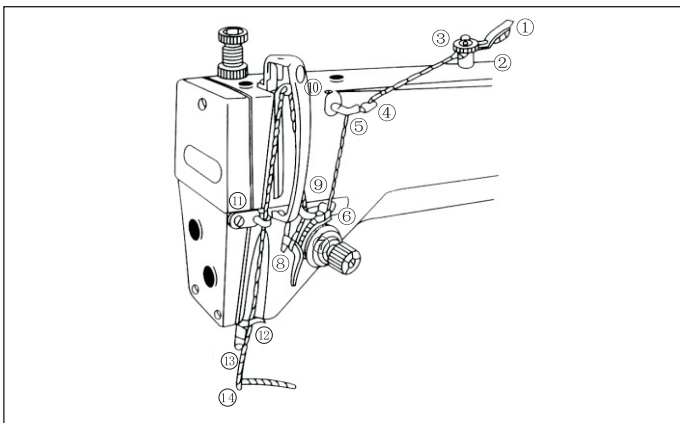
15. Clean the oil sump ⑥ with cloth.

16. If the oil level drops below the LOW mark add more lubricating oil.

·Use only the lubricating oil(Nisseki Sewing Lube 10) specified by our dealer.

·If the lubricating oil is contaminated, remove the oil cap screw ⑦ and drain the oil.

Clean off any dirt on the collection magnet ⑧ and in the oil pan.



17. 把机器放回原位。

18. 确认上线绕线是否正确。

19. 试缝

EN

17. Return the machine head to its original position.

18. Check that the upper thread is threaded correctly.

19. Carry out a test sewing.

26. 常见故障与调整

在修理、服务之前请先按下面要点检查；
按照下方法处理仍不能排除故障时，请关掉电源开关，并及时与缝纫机经销商联系。

故障现象	产生原因	调整方法	页码
断线	①穿线是否正确	正确地穿线	9
	②上线张力过强或过弱	把张力调到适当	12
	③机针是否安装正确	正确安装机针	10
	④针尖是否弯曲、钝	更换机针	10
	⑤旋梭、梭壳、挑线杆等过线道上无伤痕	修正伤痕或更换新品	
	⑥旋梭内是否有线头	清理旋梭	
	⑦线有问题		
	• 线的质量不好	换成质量好的线	
	• 线太粗	使用适当的针或适当的线	
	• 线受热熔解	安装线冷却装置	
	⑧机针型号调换	重新调整机针和旋梭的配合位置	
⑨跳针	参照下一项目跳针。		
跳针	①机针的安装方法不正确		
	• 没有完全插入针杆	把针插到针杆的顶部	10
	• 针孔没有对正	把针孔安装到正面	10
	• 针装反了	把长槽转到前面	10
	②针尖是否弯曲或损坏	更换机针	10
	③穿线是否正确	正确地穿线	9
	④旋梭尖弯曲或折断	修理旋梭尖或更换新品	
	⑤机针和旋梭的同步不好	调整同步	16
⑥机针与旋梭的间隙过大	调整间隙	16	
线迹不均匀	①压脚压力是否太小或太大	调节压脚压力	14
	②送布牙是否太低	调节送布牙齿的高度	15
	③梭心是否损坏	磨擦毛刺或更换梭心	
线迹起皱	①上线与底线张力过强	逐渐调弱上线与底线的张力	12
	②压脚压力过强、送布牙过高	调整压脚压力、调低送布牙位置	15
	③机针尖损坏	更换机针	10
	④机针太粗	尽可能使用小号机针	
	⑤送料相位调整是否准确	参照“送料相位的调节”	14
开始缝纫时上线脱线	①开始缝纫时，挑线杆未在最高位置	缝制开始时，挑线杆调到最高位置	
	②上线穿过机针余量太少	线从机针的线孔穿出50mm左右	
	③小夹线器压力太大	调整小夹线器压力	
	④上针停止位置过高线被挑线拉出	调整上停针位置	17
始缝时跳线	①切线时，梭心空转	更换梭心	10
	②梭心里的底线长度短，不出底线	更换梭心	10
	③切线后针孔的上线余量过短	调节小夹线器	

26. 常见故障与调整

故障现象	产生原因	调整方法	页码
断针	①机针是否外物碰撞弯曲了	更换机针	
	②机针的质量不好	更换质量好的机针	
	③机针没有完全插入针杆	插到针杆的顶部	
	④机针与旋梭相碰	调整针和旋梭的同步和间隙	16
	⑤与缝料和线相比针太细	换合适的机针	
	⑥机针与针板相碰	调正机针与针板的位置	
	⑦机针与压脚相碰	调正机针与压脚的位置	
正向送布与反向送布针迹不一致	①送布牙斜度调整不良	调整送布牙斜度	15
面线不佳, 底线好 (浮线)	①面线线迹总体不好		
	• 梭皮或梭壳被线磨出线槽, 拧紧后线还松的	更换新梭皮或将梭壳的线槽磨平	
	• 送布时间与挑线时间配合过慢	打开机头侧盖板, 松开主轴上的偏心轮紧固螺钉, 将偏心轮固定不动, 手转动皮带轮向机器运动的反方向转动一点, 旋紧偏心螺钉. 试车, 一次调一点点直到面线好为止	
	• 梭壳与旋梭花栏配合不佳	更换梭壳	
	• 底线过于收紧, 面线无法收回	放松机头夹线器螺丝, 直到底、面线均匀为止	
	②面线出现时好时坏现象		
	• 梭皮无弹力, 压不住线	更换新的	
	• 梭壳与旋梭的出线口配合不佳	更换梭壳	
• 针板孔、定位勾有毛刺	对其进行抛光, 确保线的出入顺畅		
底线不好, 面线好 (浮线)	①面线的张力不够	略为加大夹线器弹簧及挑线簧的弹力	
	②机器机构相互运动配合不良	打开机头侧盖板, 松开主轴上的偏心轮紧固螺钉, 将偏心轮固定不动, 手转动皮带轮向自己座位方向转动一点 (逆时针方向), 旋紧偏心螺钉. 试车, 一次调一点点直到底线好为止	
	③定位勾与旋梭之间的间隙太小或有毛刺	间隙太小可将定位勾装开些、有毛刺可通过抛光处理	
	④旋梭的弧形过小或螺钉有毛刺	通过抛光或磨光处理	
	⑤机针未对准定位勾和旋梭勾线部的中间	调整定位勾使机针对准它们的中间	
	⑥旋梭与花栏之间间隙太小或花栏有毛刺	重新调整它们之间的间隙、对花栏进行抛光	

If you notice any of the problems listed below refer to the "Remedy" column for instructions on how to solve the problem. Our dealer or a qualified technician to carry out the necessary adjustment.

Phenomena	Possible cause	Remedy	Page
Thread breakage	① Is the needle properly installed	Re-threading correctly	9
	② When the needle thread is excessively tight or loose	Adjust the thread tension	12
	③ Is the needle properly installed	Install the needle correctly	10
	④ Is the needle tip bent or blunt	Replace the needle	10
	⑤ When there is a scratch on the thread catch of the sewing hook, bobbin case, thread take-up lever or any other parts	Remove such a scratch or replace the component	
	⑥ Is thread in the rotary hook	Clean the rotary hook	
	⑦ When the thread is not suitable		
	·The quality of the thread is poor	Select good quality thread	
	·The thread is too thick	Use a suitable needle or thread	
	·The thread is broken by heat	Use silicone oil lubricant unit	
	⑧ replace the type of needle	Adjust the position of needle and rotating shuttle over again	
	⑨ Stitch skipping	Refer to the following paragraphs stitch skipping	
Stitch skipping	① When the needle is inserted in a wrong way		
	·the needle is not entirely into the needle bar	Fully insert the needle	10
	·The needle eye is not facing straight to the operator	Let the needle eye face straight to the operator	10
	·The thread is facing backwards	Let the long groove on the needle face to the operator	10
	② Is the needle tip bent or blunt?	Replace it with a new needle	10
	③ Is the needle properly installed	Re-threading correctly	9
	④ When the hook blade point is not sharp enough or damaged	repair the hook or replace it	
	⑤ When the timing of the sewing hook and the needle is not matched	Adjust the timing properly	16
⑥ When the clearance between the needle and the sewing hook is too great	Adjust the clearance	16	
Seams don't match	① Is the presser foot pressure too weak or strong	Adjust the presser foot pressure	14
	② Is the feed dog too low ?	Adjust the feed dog height	15
	④ Is the V-belt tension too low	Adjust so that there is 5-10mm of deflection in the V-belt when it is pushed with a finger	12
Poor thread tightening	① The upper thread and lower thread tension is too strong	Adjust the thread tension	15
	② The presser foot pressure is too strong	Decrease the presser foot pressure	13
	③ The needle tip is broken	Replace the needle	10
	④ The needle is too thick	Use as thin a needle as possible	
	⑤ whether the adjustment of feed position is correct	consult the adjustment of feed position	14
Upper line comes out of the needle hole at the sewing start	① The thread take-up lever is not at its highest position at the sewing start	Set the thread take-up lever to the highest position at the sewing start	
	② The thread end is too short for the needle hole at the sewing start	Approx 50mm of thread should be coming out of the needle hole	
	③ The upper thread tension is too strong	Adjust the upper thread tension	
	④ upper looper fixed too high thread being take-up	adjust the position of upper looper	17

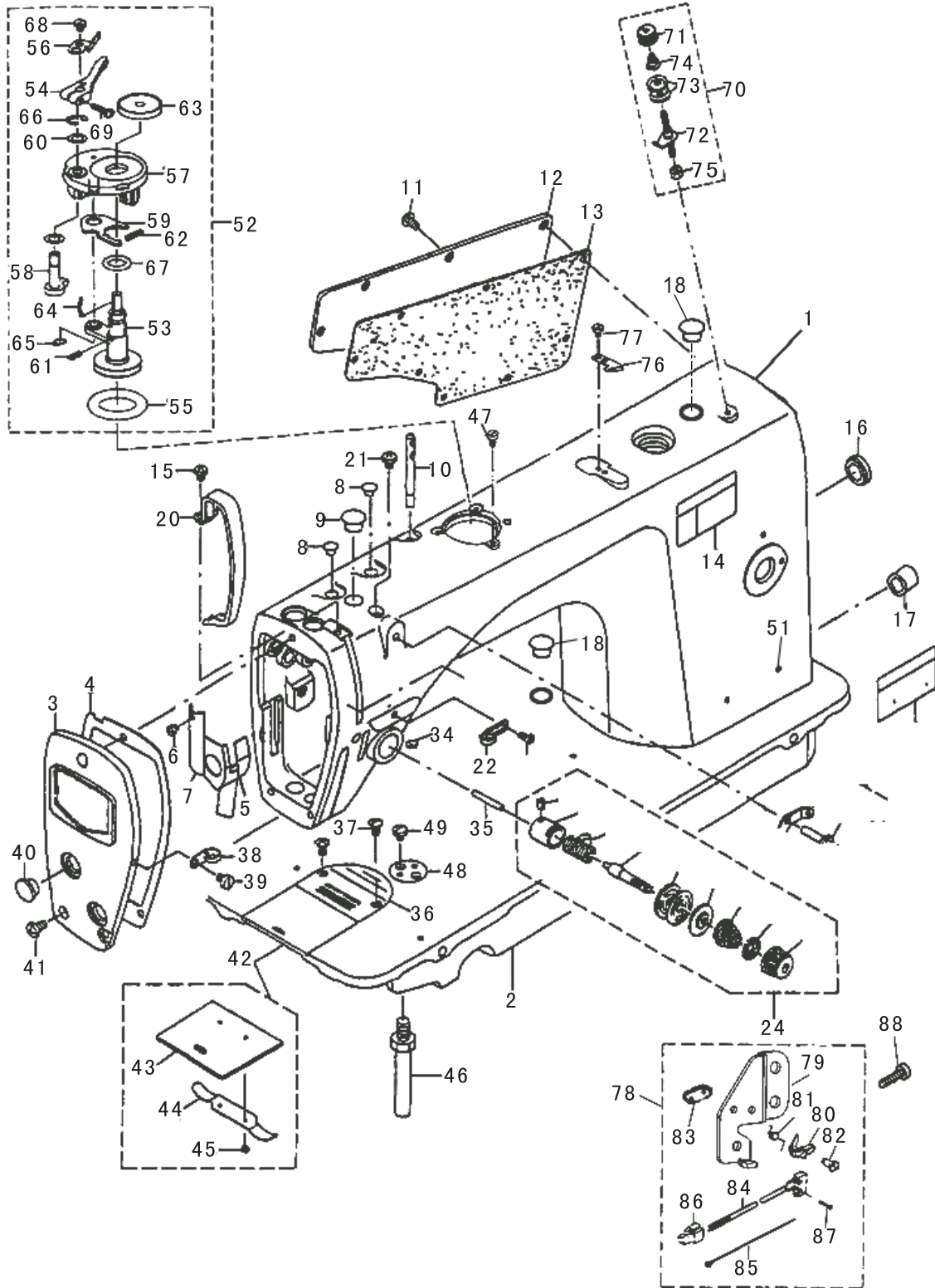
If you notice any of the problems listed below refer to the "Remedy" column for instructions on how to solve the problem. Our dealer or a qualified technician to carry out the necessary adjustment.

Phenomena	Possible cause	Remedy	Page
The thread comes out of the needle hole at the sewing start	① when cut thread, the bobbin is racing	Replace the bobbin	10
	② the length of base line inside bobbin is short and cannot appear base line	Replace the bobbin	10
	③ the pinhole upper line is too short after cutting thread	adjust thread tension	
The needle is broken	① When the needle is bent	Replace the needle	
	② The quality of the needle is poor	Select good quality needle	
	③ the needle is not entirely into the needle bar	Fully insert the needle	
	④ When the needle hits the sewing hook	Adjust the timing and clearance between the needle and the sewing hook and also the position of the needle guard	16
	⑤ The needle is too thin for the thread	Use a suitable needle	
	⑥ The needle hits against the throat plate	adjust needle and needle plate position	
	⑦ The needle hits against the presser foot	adjust needle and press foot position	
needle mark is not consistent in observe feed and reverse feed	① the slope of feed dog cannot adjust well	Adjusting the feed dog incline	15
it is not so good of face line, however the base line is good	① the face line stitch is not good		
	·hook skin and hook case are milled thread slot, the thread still lax after fasten	change new hook skin or rub down hook case thread slot.	
	·the speed is slow when feeding and picking thread	Opening the side cover board of machine top, loosen the eccentric cam in principal axis and fasten bolt, fix up eccentric cam, turn strap	
	·hook case and rotating hook cooperate not good	Replace it with a new bobbin case	
	·the base line is too tight that face line cannot back	release thread tension screw, until make sure base and face line equality	
	② face line appears broke down sometimes but sometimes is ok		
	·there is no elasticity of hook skin, thus cannot press down the thread	use new hook skin instead	
	·hook case and the thread exit of rotating hook cooperate not good	Replace it with a new bobbin case	
base line is not good, but face line is good	① When the needle thread tension is too low	increase spring of thread tension spring and thread take-up spring	
	② the structure interact cooperation not good	Opening the side cover board of machine top, loosen the eccentric cam in principal axis and fasten bolt, fix up eccentric cam, turn strap wheel a little to opposite position by hand, (counter-clockwise) close eccentric screw,	
	③ positioning finger and rotating hook clearance is too small or there is burr	move positioning finger or polishing to solve it	
	④ the arc of rotating or set screw have burr	deal it through polish or burnish	
	⑤ needle is not aim at the middle of poisoning finger and rotating hook	adjust poisoning finger to aim the middle	
	⑥ hook case and rotating hook clearance is too small or there is burr	adjust the clearance of them and polishing	

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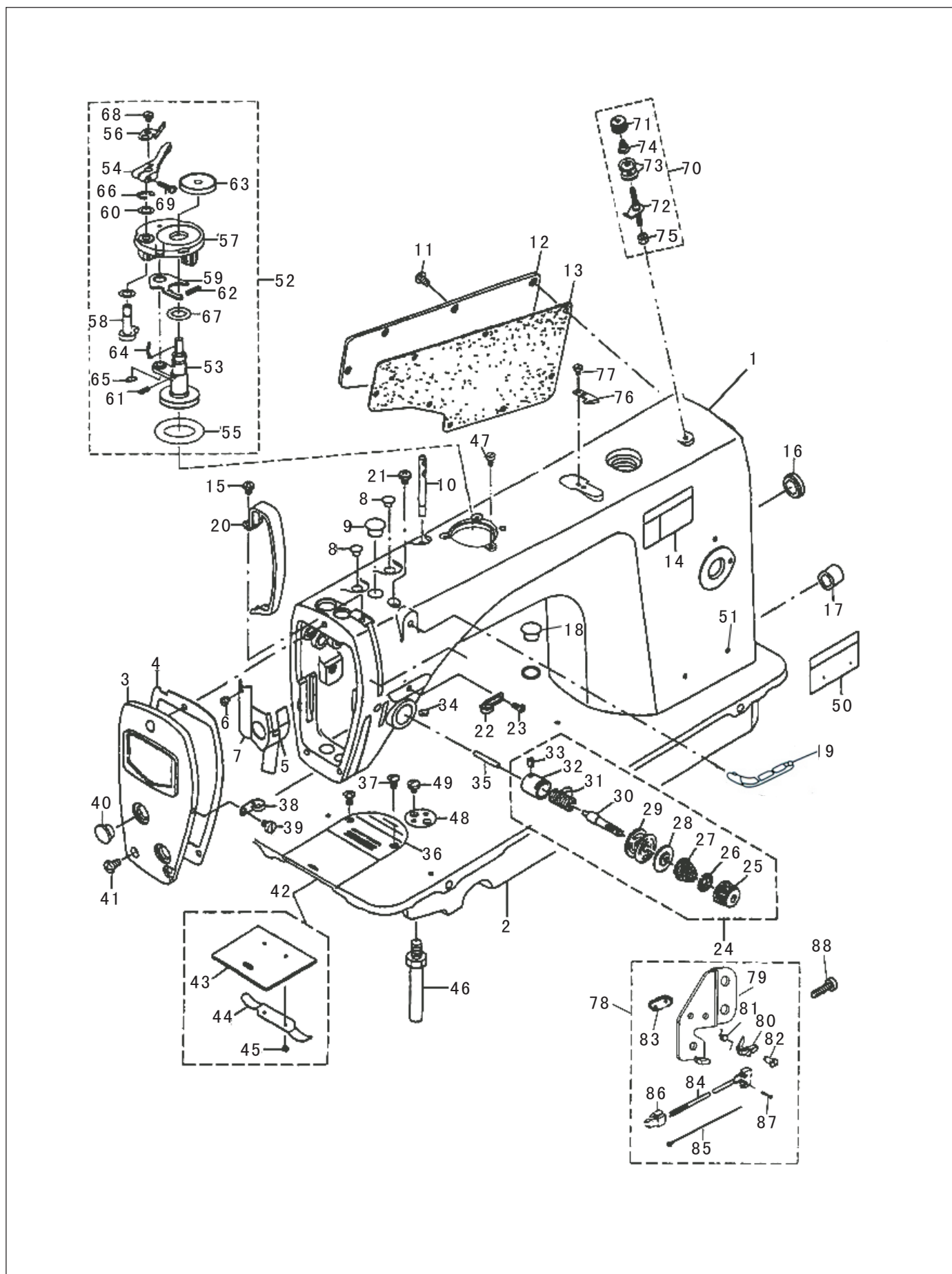
1. 机壳、外露部件 Machine frame & miscellaneous cover components



1. 机壳、外露部件 Machine frame & miscellaneous cover components

序号 NO.	图号 REF NO.	名称	DESCRIPTION	数量 AMT	备注 NOTE
1	1273.01-01	机头	Arm	1	
2	1230.01-01-02	底板	Bed	1	
3	1255.01-02	面板	Face plate arm	1	
4	101.01-09	面板垫	Brand plate gasket	1	
5	43-10250000-00	面部防油板油线Φ2.5×75mm	Oil wick	0.075	
6	11-60080320-01	面部防油板螺钉	Screw SM1/8x44 L=4	1	
7	101.08-34XH	面部防油板	Arm oil shield asm,	1	
8	101.01-12	挑线连杆销螺孔塞	Rubber plug	3	
9	101.01-11	针杆曲柄螺孔塞	Rubber plug	1	
10	101.03-34	小夹线器组件	Needle thread guide pin asm.	1	
11	11-40120925-01	后窗板螺钉	Screw SM3/16x28 L=9	10	
12	1255.01-05	后窗板	Side plate	1	
13	1255.01-06	后窗板垫	Side plate guide	1	
14	44-00000001-00	安全指示牌	Safety indication seal	1	
15	11-40120625-01	挑线杆护罩螺钉	Screw SM3/16x28 L=6	1	
16	101.01-02	送料调节器孔塞	Rubber plug	1	
17	101.01-03	下轴工艺孔塞	Rubber plug	1	
18	279-05-17	橡皮塞	Rubber plug	2	
19	101.03-14	二眼线勾	Two-hole thread eyelet	1	
20	101.02-29	挑线杆护罩	Thread take-up lever cover	1	
21	11-40120925-01	二眼线勾螺钉	Two-hole thread eyelet screw SM3/16x28 L=9	1	
22	101.03-16	右线勾	Arm thread guide (right)	1	
23	11-70110620-02	右线勾螺钉	Arm thread guide screw SM11/64x40 L=6	1	
24	101.03-19-00	大夹线器组件	Pre-tension assy	1	
25	101.03-28	夹线螺母	Tension nut	(1)	
26	101.03-27	夹线制动板	Tension disc stopper	(1)	
27	101.03-26	夹线簧	Tension spring	(1)	
28	101.03-25	松线板	Tension disc holder	(1)	
29	101.03-24	夹线板	Thread guide disc	(2)	
30	101.03-21	夹线螺钉(柱)	Tension post	(1)	
31	101.03-20	挑线簧	Take-up spring	(1)	
32	101.03-19-01	挑线簧调节座	Tension post socket	(1)	
33	11-80090610-01	夹线座紧固螺钉	Screw SM9/64x40 L=6	(1)	
34	11-80150710-01	夹线器螺钉	Screw SM15/64x28 L=7	1	
35	101.03-23	松线钉	Thread release pin	1	
36	109.01-44	针板	Needle plate	1	
37	11-20110920-02	针板螺钉	Screw SM11/64x40 L=9	2	
38	101.03-18	左线勾	Arm thread guide (left)	1	
39	11-70110620-02	左线勾螺钉	Arm thread guide screw SM11/64x40 L=6	1	
40	101.01-10	面板调节螺孔塞	Rubber plug	2	
41	11-40120925-01	面板螺钉	Screw SM3/16x28 L=9	3	
42	101.06-39	推板组件	Slide plate asm	1	
43	101.06-39-01	推板	Slide plate	(1)	
44	101.06-40	推板簧	slide plate spring	(1)	
45	11-60060220-01	推板簧螺钉	Screw SM3/32x56 L=2	(2)	
46	101.01-15	底板支座	Bed screw stud SM15/64x28	4	
47	11-70121020-02	绕线器固定螺钉	Screw SM3/16x28 L=10	3	
48	101.01-17	安装板	Ruler stop seat	1	
49	11-00110620-01	安装板定位螺钉	Screw SM11/64x40 L=5.5	1	
50	1273.01-02	型号牌	Model plate	1	
51	101.01-14	型号牌铆钉	Model plate rivet	2	
52	1194.02-01	绕线器组件	Bobbin winder asm.	1	
53	134.02-01-01	绕线轴组件	Bobbin winder asm.	(1)	
54	134.02-01-02	绕线控制扳手	Bobbing lever	(1)	
55	31-25070000-09	O型圈	Ring	(1)	
56	134.02-01-04	绕线调节板	Bobbing winder adjust plate	(1)	
57	134.02-01-05	绕线座	Bobbin fitting basis compl	(1)	
58	134.02-01-06	绕线凸轮轴组件	Bobbin winder asm.	(1)	

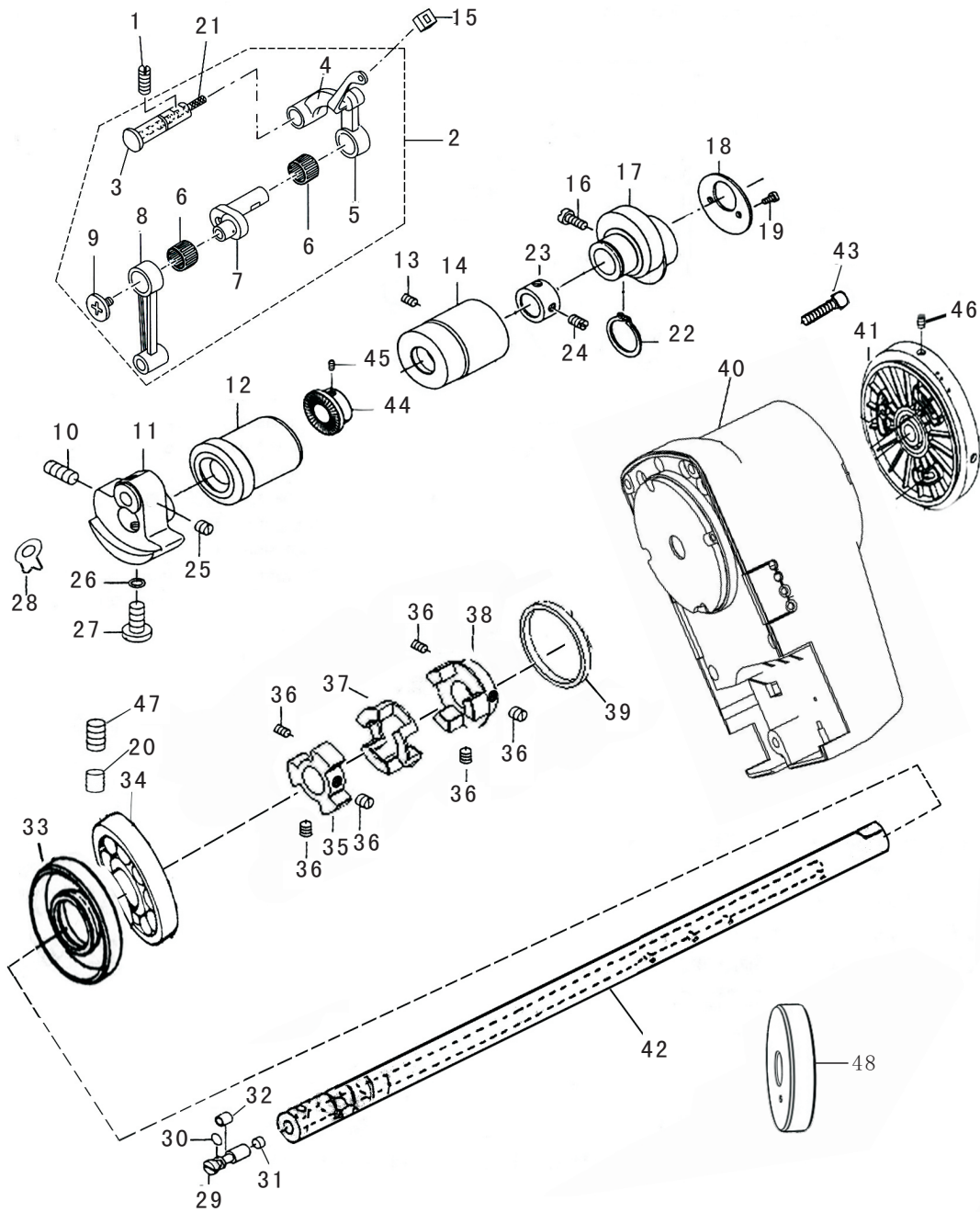
1. 机壳、外露部件 Machine frame & miscellaneous cover components



1. 机壳、外露部件 Machine frame & miscellaneous cover components

序号 NO.	图号 REF NO.	名称	DESCRIPTION	数量 AMT	备注 NOTE
59	134.02-01-07	绕线制动传动板	Adjusting plate	(1)	
60	134.02-01-08	绕线器扳手轴调整垫圈	Vertical roller washer	(2)	
61	134.02-01-09	压紧弹簧	Presser foot spring	(1)	
62	134.02-01-10	弹簧	spring	(1)	
63	134.02-01-11	梭心垫	Bobbin cushion	(1)	
64	134.02-01-12	梭心防转弹簧	latch spring	(1)	
65	24-05000000-08	固定卡簧	Retaining ring	(1)	
66	24-05000000-08	卡簧	e-ring	(1)	
67	31-09428000-09	O型圈	rubber ring	(1)	
68	11-40090625-01	紧定螺钉	screw SM9/64-x40 L=6	(1)	
69	11-60091320-01	固定螺钉	Screw SM9/64x40 L=13	(1)	
70	134.02-02	绕线夹线器组件	Bobbing thread tension asm	1	
71	134.02-02-01	夹线螺母	Thread tension nut	(1)	
72	134.02-02-02	夹线柱组件	Bobbin thread tension rod asm	(1)	
73	134.02-02-03	夹线板	Thread tension disk	(2)	
74	134.02-02-04	夹线簧	Connecting rod spring	(1)	
75	13-60115520-02	锁紧螺母	nut SM11/64x40	(1)	
76	134.02-03	割线刀	Thread cutter	1	
77	11-40090625-01	割线刀固定螺钉	Screw SM9/64x40 L=6	2	
78	1255.01-09	安全开关组件	Safety switch asm.	1	
79	1255.01-09-01	安全开关座	Safety switch base.	(1)	
80	134.01-66-02	开关架	Safety switch arm	(1)	
81	134.01-66-03	开关弹簧	Safety switch spring	(1)	
82	134.01-66-04	开关螺钉	Safety switch arm shaft	(1)	
83	134.01-66-05	螺母(连体)	Safety switch arm nut	(1)	
84	134.01-66-06	开关线组件	Safety switch cord asm	(1)	
85	134.01-66-07	绑带	Cable band	(1)	
86	134.01-66-08	接触器	Housing	(1)	
87	12-40201221-02	螺钉	Screw M2 L=12	(2)	
88	11-40120925-01	螺钉	Screw SM3/16x28 L=9	2	

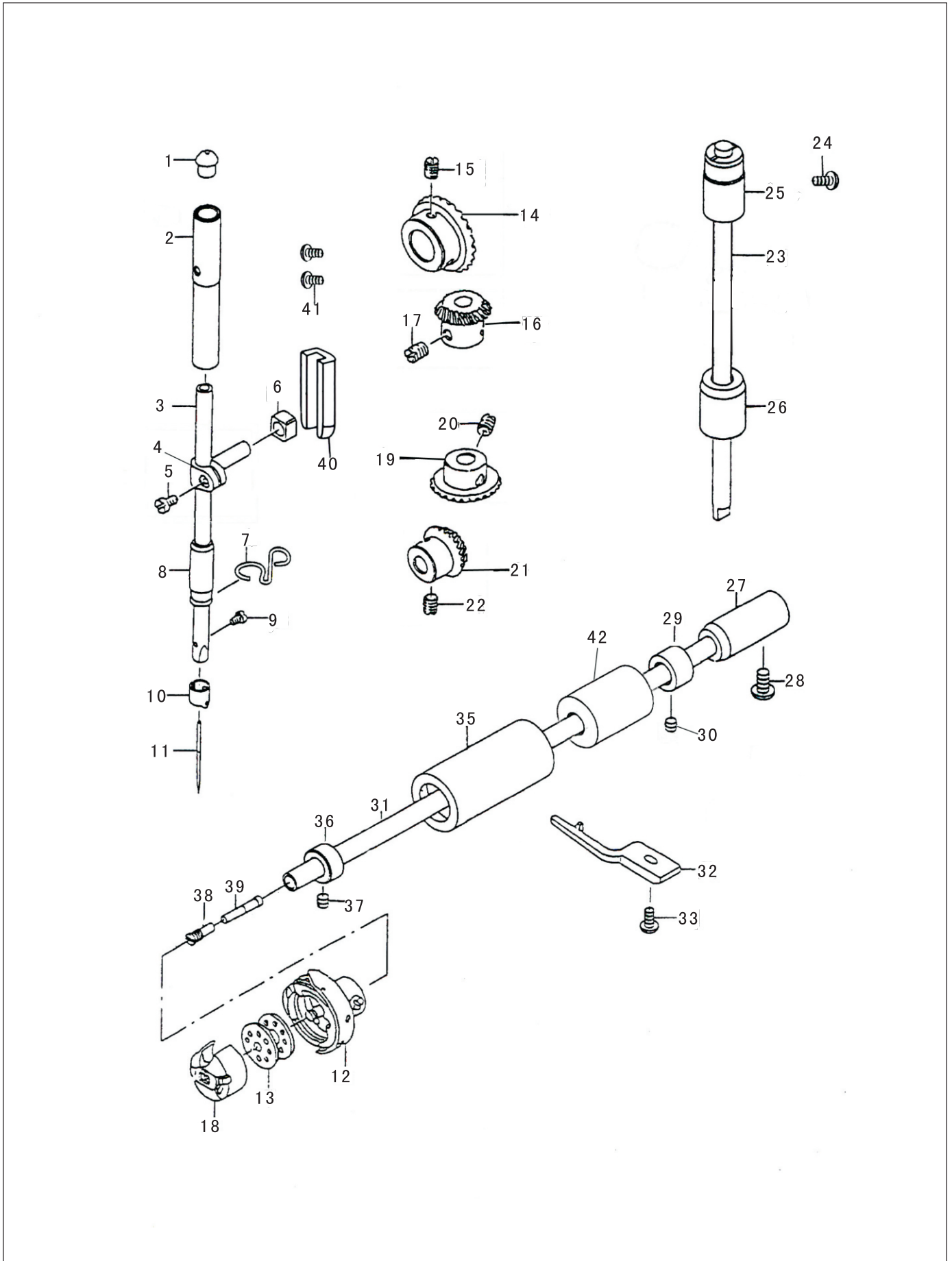
2. 上轴及挑线部件 Main shaft & thread take-up components



2. 上轴及挑线部件 Main shaft & thread take-up components

序号 NO.	图号 REF NO.	名称	DESCRIPTION	数量 AMT	备注 NOTE
1	11-80151150-01	挑线连杆销螺钉	Set screw SM15/64x28 L=11	1	
2	101.02-22	挑线杆组件 (大)	Thread take-up lever asm	1	
3	101.02-25	挑线连杆销	Hinge pin	(1)	
4	101.02-22-05	挑线连杆	Thread take-up lever link	(1)	
5	101.02-22-00	挑线杆组件	Thread take-up lever	(1)	
6	101.02-24	滚针轴承	Needle bearing	(2)	
7	101.02-20-00	挑线曲柄组件	Thread take-up crank	(1)	
8	101.03-01	针杆连杆	Needle bar link	(1)	
9	101.02-28	挑线曲柄左旋螺钉	Set screw (left handed)	(1)	
10	11-80181650-01	针杆曲柄紧固螺钉	Set screw SM9/32x28 L=16	1	
11	101.02-15	针杆曲柄	Needle bar crank	1	
12	101.02-10	上轴前轴套组件	Main shaft bushing (left)	1	
13	11-80150710-01	上轴中轴套螺钉	Main shaft bushing screw SM15/64x28 L=7	1	
14	101.02-08	上轴中轴套	Main shaft bushing (middle)	1	
15	101.02-23	挑线杆防油套	Oil protect bushing	1	
16	11-00161120-01	送料偏心轮螺钉	Screw SM1/4x40 L=11	2	
17	101.06-02	送料偏心轮	Feed drive eccentric cam	1	
18	101.06-04	送料偏心轮盖板	Thrust collar	1	
19	11-10090820-01	送料偏心轮盖板螺钉	Screw SM9/64x40 L=6	2	
20	1255.02-11	尼龙垫Φ7X8	Nylon cushion	1	
21	43-20300000-00	挑线连杆销油线Φ3×50	Oil wick	0.05	
22	25-20000000-08	拾牙连杆轴用挡圈	Snap ring	1	
23	101.02-06	上轴挡圈	Thrust collar D=14.72 W=12	1	
24	11-80160610-01	上轴挡圈螺钉	Screw SM1/4x40 L=6	2	
25	11-80160610-01	针杆曲柄螺钉	Screw SM1/4x40 L=6	2	
26	31-04424000-09	定位螺钉O形圈	Rubber ring	1	
27	11-60181630-01	针杆曲柄定位螺钉	Screw SM9/32x28 L=16	1	
28	101.02-19	针杆曲柄护板	Counter weight protecting plate	1	
29	101.02-12	曲柄油量调节销	Sleeve of oil amount adjusting pin	1	
30	31-02818000-09	曲柄油量调节销O型圈	Rubber ring	1	
31	101.02-11	曲柄油量限制垫	Roller felt	1	
32	101.02-13	油量调节圈	Rubber ring	1	
33	32-14450320-09	上轴油封	Oil seal	1	
34	1255.02-01	轴承6907Z	Ball bearing	1	
35	1255.02-02	联轴器A	Coupling a	1	
36	12-80600812-01	螺钉	Set screw socket M6 L=8	6	
37	1255.02-03	联轴器缓冲器	Coupling buffer	1	
38	1255.02-04	联轴器B	Coupling b	1	
39	1255.02-05	塑料圈	Bearing support	1	
40	1273.02-01	电机组件	Motor assm	1	
41	1255.02-07	手轮	Hand wheel	1	
42	1255.02-08A	上轴	Main shaft	1	
43	12-60501822-01	M5内六角螺栓	Bolt socket M5 L=18	3	
44	1255.02-10	绕线轮	Driving wheel	1	
45	11-80160610-01	螺钉	Screw SM1/4x40 L=6	2	
46	12-80500512-01	螺钉M5	Screw M5 L=5	2	
47	12-80801212-01	螺钉	Screw M8 L=12	1	
48	1255.02-13A	支撑轴套		1	

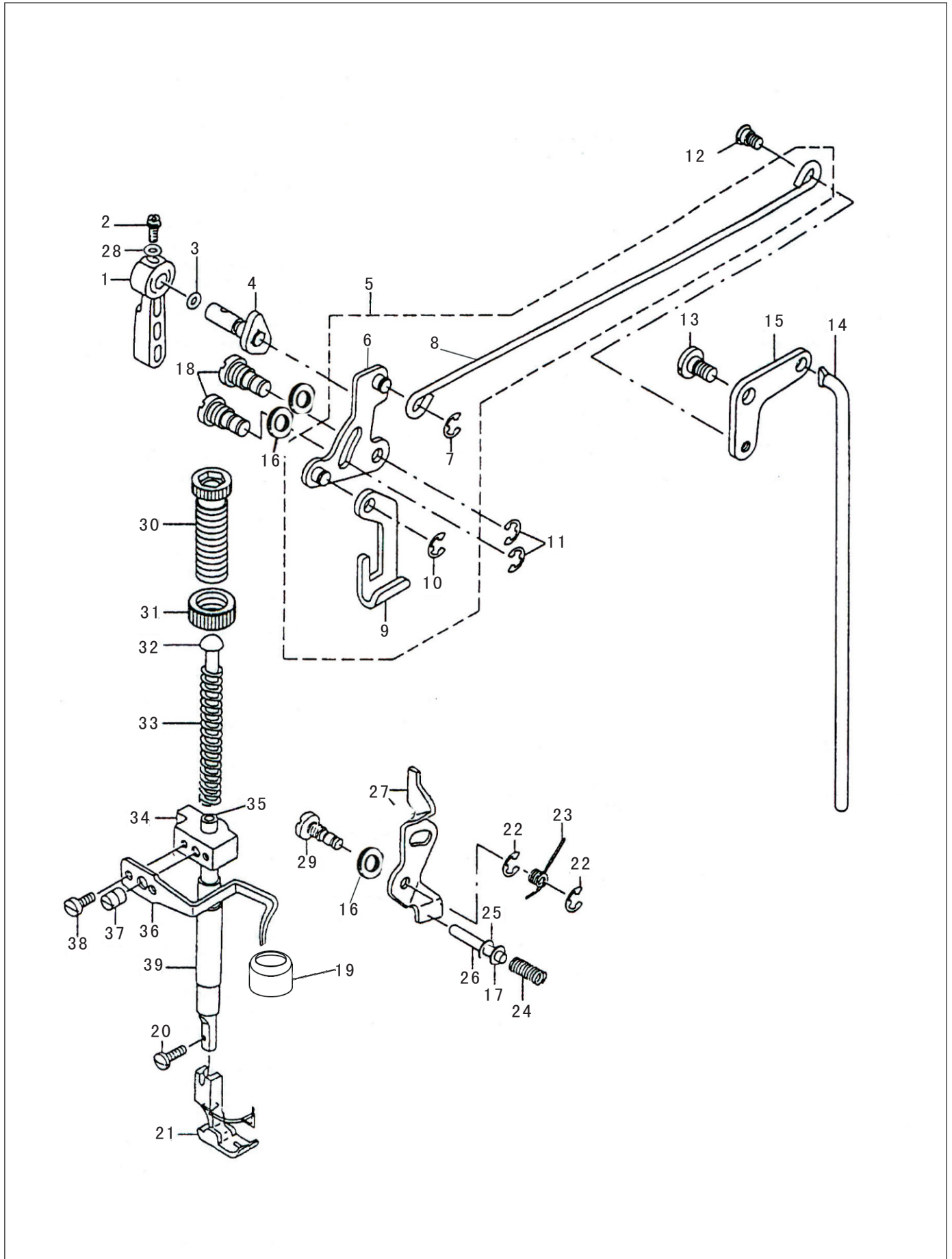
3. 针杆、竖轴、下轴部件 Needle bar, upright shaft & hook driving shaft components



3. 针杆、竖轴、下轴部件 Needle bar, upright shaft & hook driving shaft components

序号 NO.	图号 REF NO.	名称	DESCRIPTION	数量 AMT	备注 NOTE
1	101.03-07	针杆上衬套孔塞	Rubber plug	1	
2	101.03-06	针杆上衬套	Needle bar bushing	1	
3	114.02-30	针杆	Needle bar	1	
4	120.02-07	针杆连接柱	Needle bar connection	1	
5	11-60090620-01	针杆连接柱螺钉	Screw SM9/64x40 L=6	1	
6	120.02-25	针杆连接柱滑块	Slide block	1	
7	101.03-09	针杆下轴套线勾	Needle bar thread guide	1	
8	101.03-08	针杆下轴套	Needle bar bushing lower	1	
9	11-60080520-01	支针螺钉	Screw SM11/8x44 L=5	1	
10	114.02-31	针杆过线环	Needle bar thread guide	1	
11	101.03-13	机针DBX1 14#	Needle	1	
12	101.05-01	旋梭组件	Hook asm	1	
13	109.03-41	梭心	Bobbin	1	
14	101.05-26	上轴伞齿轮	Bevel gear for arm shaft	1	
15	11-80160810-01	伞齿轮螺钉	Screw SM11/4x40 L=8	2	
16	101.05-25	竖轴上伞齿轮	Bevel gear for vertical shaft	1	
17	11-80160810-01	伞齿轮螺钉	Set screw SM1/4x40 L=8	2	
18	101.05-02	梭心套	Bobbin case	1	
19	101.05-20	竖轴下伞齿轮	Bevel gear for vertical shaft	1	
20	11-80160810-01	伞齿轮螺钉	Set screw SM1/4x40 L=8	2	
21	101.05-18	下轴伞齿轮	Bevel gear for hook shaft	1	
22	11-80160810-01	伞齿轮螺钉	Set screw SM1/4x40 L=8	2	
23	101.05-24	竖轴	Vertical shaft	1	
24	11-40120925-01	竖轴上轴套螺钉	Screw SM3/16x28 LI=9	1	
25	101.05-22	竖轴上轴套	Bushing for vertical shaft	1	
26	101.05-21	竖轴下轴套	Bushing for vertical shaft	1	
27	101.05-14	下轴后轴套	Bushing for rotating hook shaft	1	
28	11-60121420-01	下轴后轴套螺钉	Screw SM3/16x28 L=14	1	
29	101.05-10	下轴挡油圈	Thrust collar asm	1	
30	11-80110410-01	下轴挡油圈螺钉	Screw SM11/64x40 L=4	2	
31	101.05-07	下轴	Rotating hook shaft	1	
32	101.05-05	旋梭定位钩	Positioning finger	1	
33	11-40111025-01D	旋梭定位钩螺钉	Screw SM11/64x40 L=10	1	
35	158.05-09	下轴前轴套组件	Hook driving shaft bushing asm.	1	
36	101.05-10	下轴挡油圈	Thrust collar asm	2	
37	11-80110410-01	下轴挡油圈螺钉	Screw SM11/64x40 L=4	4	
38	101.05-08	下轴限油螺钉	Oil seal screw	1	
39	101.05-09	下轴限油芯	Oil wick	1	
40	120.02-23	针杆滑块导轨	Guide for slide block	1	
41	11-40110825-01	螺钉	Screw Sm11/64x40 L=8	2	
42	158.05-19	下轴中轴套	Hook driving shaft bushing (middle)	1	

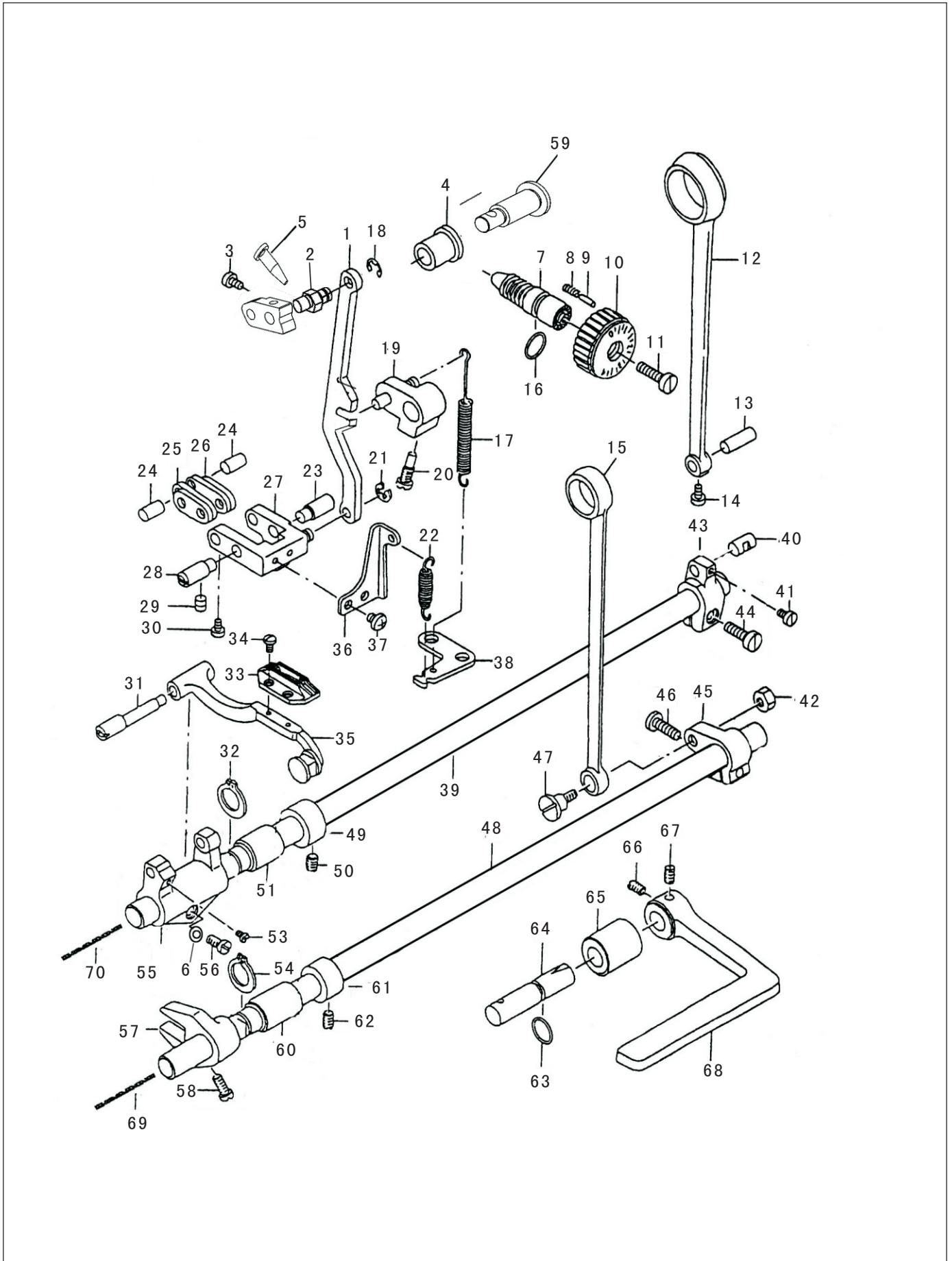
4. 压脚部件 Presser bar components



4. 压脚部件 Presser bar components

序号 NO.	图号 REF NO.	名称	DESCRIPTION	数量 AMT	备注 NOTE
1	101.04-13	压脚扳手	Hand lifter	1	
2	11-30091020-01	压脚扳手螺钉	Screw SM9/64x40 L=10	1	
3	31-04018000-09	压脚扳手轴O形圈	Rubber ring	1	
4	101.04-16-00	压脚扳手凸轮组件	Hand lifter cam asm.	1	
5	101.04-19	抬压脚杠杆部件	Hand lifter link asm.	1	
6	101.04-19-00	抬压脚前杠杆组件	Hand lifter link	(1)	
7	24-05000000-08	开口挡圈	Snap ring	(1)	
8	101.04-28	抬压脚拉杆	Lifting lever connecting rod	(1)	
9	101.04-18	压脚升降板	Lifting lever	(1)	
10	24-05000000-08	开口挡圈	Snap ring	(1)	
11	24-05000000-08	开口挡圈	Snap ring	3	
12	101.04-32	抬压脚拉杆螺钉	Hinge screw SM3/16x32	1	
13	101.04-31	后杠杆轴位螺钉	Hinge screw SM15/64x 28	1	
14	101.04-33	抬压脚顶杆	Connecting rod vertical	1	
15	101.04-30	抬压脚后杠杆	Lifting lever ring	1	
16	101.04-21	螺纹销密封垫圈	Washer plate	3	
17	101.03-32	松线辅钉垫片	Washer plate	1	
18	101.04-20	前杠杆螺纹销	Link shaft SM5/16x24	2	
19	101-04-34	压杆轴套锥形防油套	Rubber bushing	1	
20	11-60091120-01	活压脚螺钉	Presser foot screw SM9/64x40 L=11	1	
21	109.04-41	活压脚组件	Presser foot asm.	1	
22	24-05000000-08	开口挡圈E5	E-ring	2	
23	101.04-27	松线顶板复位簧	Thread tension release wire spring	1	
24	101.03-33	松线辅钉弹簧	Tension release supporting pin spring	1	
25	24-04000000-08	松线辅钉开口挡圈E4	E-ring	1	
26	101.03-30	松线辅钉	Tension release supporting pin	1	
27	101.04-24	松线顶板	Tension release plate	1	
28	21-03810080-01	压脚扳手螺钉垫圈	Washer	1	
29	101.04-25	松线顶板螺纹销	Tension release shaft	1	
30	101.04-01	调压螺钉	Presser regulator screw	1	
31	101.04-02	调压螺母	Presser regulator nut	1	
32	101.04-03	调压导杆	Presser guide bar	1	
33	101.04-04	调压簧	Presser spring	1	
34	101.04-06	压杆导架	Presser bar guide bracket	1	
35	101.04-05	压杆	Presser bar guide bracket	1	
36	1255.04-02	缓线调节钩	Presser bar guide bracket	1	
37	11-80160810-01	压杆导架螺钉	Screw SM1/4x40 L=8	1	
38	11-40090825-01	缓线调节钩螺钉	Screw SM9/64x40 L=9	2	
39	101.04-10	压杆衬套	Presser bar bushing lower	1	

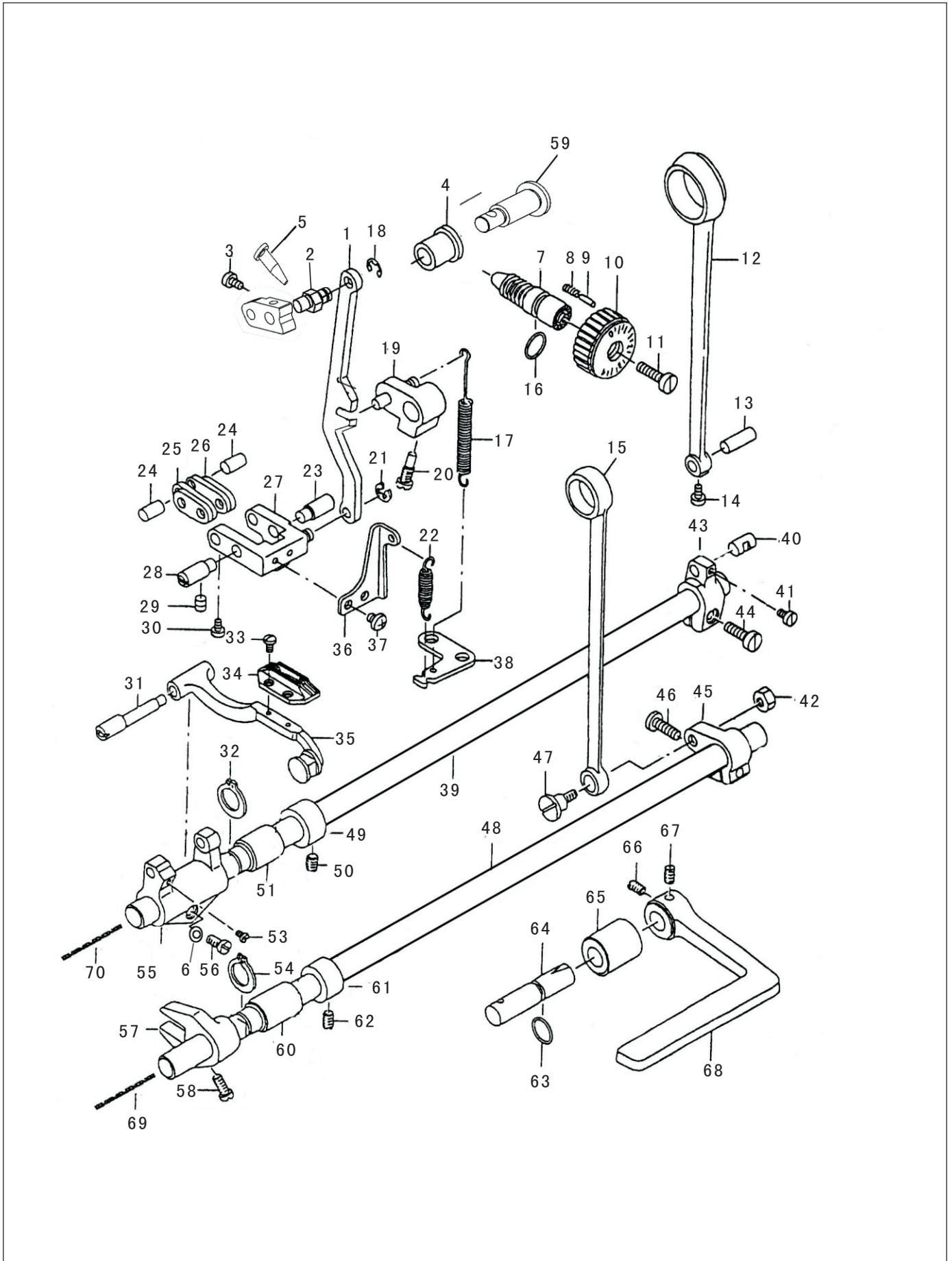
5. 送料部件 Feed mechanism components



5. 送料部件 Feed mechanism components

序号 NO.	图号 REF NO.	名称	DESCRIPTION	数量 AMT	备注 NOTE
1	1273.05-01	倒送料连杆	Feed regulator connecting rod	1	
2	101.07-10	倒送料连杆销	Feed regulator pin	1	
3	11-00090620-01	送料连杆销螺钉	Screw SM9/64x40 L=6	2	
4	1255.05-07	送料调节器轴套	Feed regulator bushing	1	
5	120.03-28	螺钉	Screw SM15/64×28 L=10	1	
6	21-04808080-01	垫圈	Washer	1	
7	1255.05-02	送料调节螺柱	feed regulator screw	1	
8	101.07-06	送料距锁合簧	Spring	1	
9	101.07-05	送料距锁合销	Pin	1	
10	101.07-01	送料距旋钮	Feed deal	1	
11	11-70121820-01	送料距旋钮螺钉	Screw SM3/16x28 L=18	1	
12	101.06-06	送料连杆	Rocker shaft connecting rod	1	
13	101.06-07	送料连杆销	Walking foot pin	1	
14	11-00090620-01	送料连杆销螺钉	Screw SM9/64x40 L=6	1	
15	101.06-49	拾牙连杆	Connecting rod	1	
16	31-09428000-09	送料调节螺柱O形圈	Rubber ring	1	
17	101.07-22	倒送料拉簧	Feed reverse spring	1	
18	24-05000000-08	开口挡圈	Snap ring5	1	
19	1273.05-02	倒送料曲柄组件	Feed reverse asm	1	
20	11-60121420-01	倒送料曲柄螺钉	Feed reverse arm screw SM1/4x40 L=20	1	
21	24-05000000-08	开口挡圈	Snap ring5	1	
22	101.07-26	调整连接弹簧	Adjusting connecting spring	1	
23	1230.06-16	送料摆动板座右销	Adjusting link fulcrum shaft	1	
24	101.06-11	短摆动座连接销	Walking foot link	2	
25	101.06-09	送料长摆动板	Walking foot link	2	
26	101.06-10	送料短摆动板	Connecting link	2	
27	101.06-13-00	送料摆动板座	Walking foot adjusting link	1	
28	101.06-14	送料摆动板座右销	Adjusting link fulcrum shaft	1	
29	11-80151150-01	螺钉	Screw SM15/64 L=11	2	
30	11-60090620-01	连接销螺钉	Screw SM9/64x40 L=6	2	
31	101.06-32	牙架销	Feed bar shaft	1	
32	25-15000000-08	送料轴轴用挡圈	Retaining ring	1	
33	109.05-33	送料牙	Feed dog	1	
34	11-60080620-01	送料牙螺钉	Screw SM1/8x44 L=6	2	
35	101.06-31-00	牙架组件	Feed bar asm	1	
36	101.07-24	摆动摆座弹簧架	Adjusting link spring frame	1	
37	11-40110525-01	摆动板座复位板螺钉	Screw SM11/64x40 L=5	2	
38	101.07-23	拉簧固定板	Feed spring hook	1	
39	101.06-22	送料轴	Feed rocker shaft	1	
40	101.06-19	送料曲柄销	Feed rocker crank pin	1	
41	11-00090620-01	送料曲柄销螺钉	Screw SM9/64x40 L=6	1	
42	13-60184020-01	拾牙连杆轴位螺母	Hinge screw SM9/32x28	1	
43	101.06-18	送料曲柄	Feed rocker shaft crank	1	
44	11-40121425-01	送料曲柄螺钉	Screw SM3/16x28 L=14	1	
45	101.06-47	拾牙曲柄	Feed rocker crank	1	
46	11-40121225-01	拾牙曲柄螺钉	Screw SM3/16x28 L=12	1	
47	101.06-50	拾牙连杆轴位螺钉	Hinge screw	1	
48	101.06-44	拾牙轴	Feed driving shaft	1	
49	101.02-06	送料轴挡圈	Feed rocker shaft collar	1	
50	11-80160610-01	送料轴挡圈螺钉	Screw SM1/4x40 L=6	2	
51	101.06-26	送料轴轴套	Feed rocker shaft bushing	1	
52	1255.05-05	送料调节座	Feed regulator	1	
53	11-40110725-01	牙架轴紧固螺钉	Screw SM11/64×40 L=7	1	
54	25-15000000-08	拾牙轴轴用挡圈	Retaining ring	1	
55	101.06-28	牙架座	Feed rocker asm	1	
56	11-40121425-01	牙架座螺钉	Screw SM3/16×28 L=14	1	
57	101.06-42	拾牙叉形曲柄	Driving shaft crank asm ,front	1	
58	11-40111025-01	拾牙叉形曲柄螺钉	Screw SM11/64×40 L=11	1	

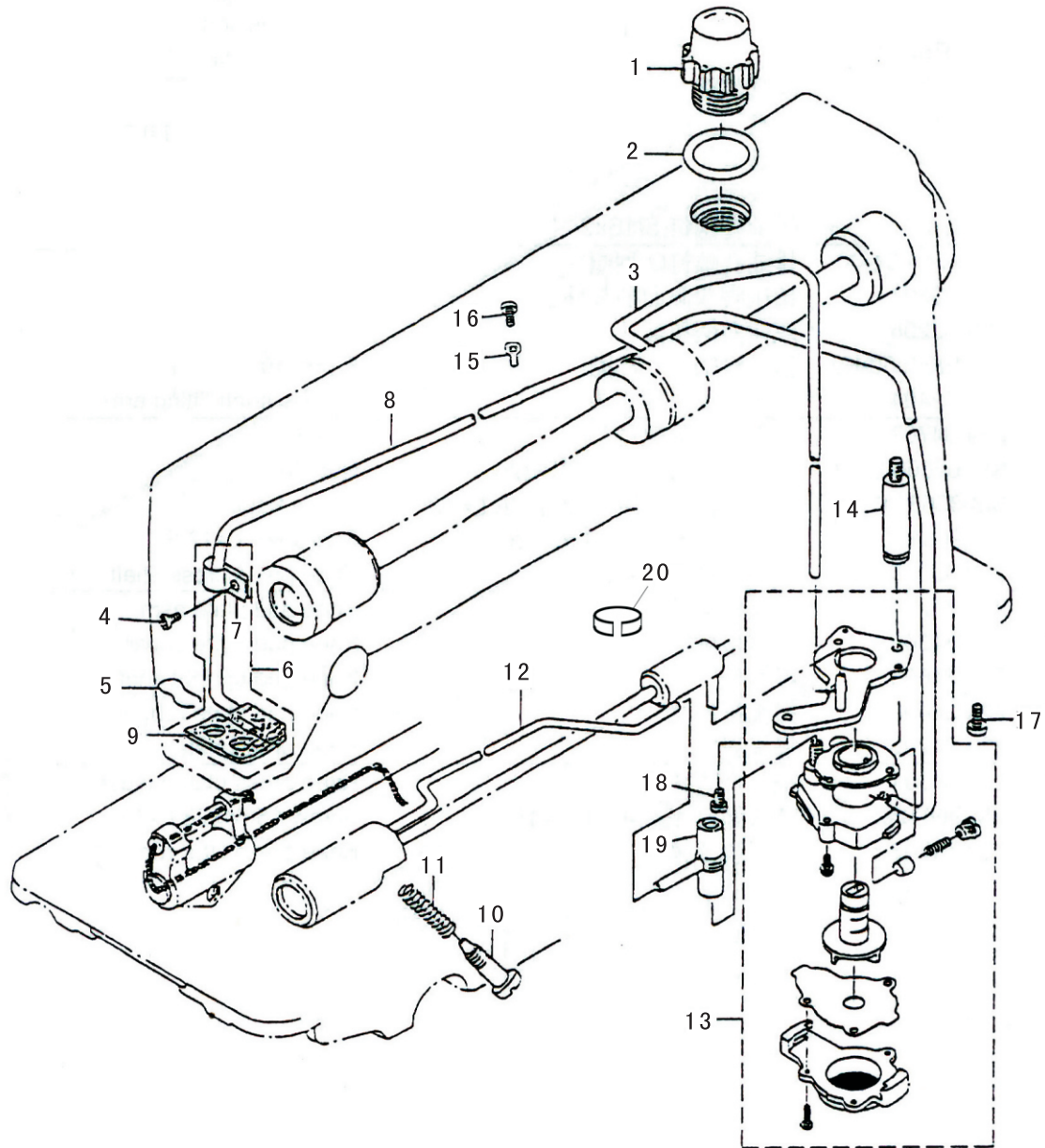
5. 送料部件 Feed mechanism components



5. 送料部件 Feed mechanism components

序号 NO.	图号 REF NO.	名称	DESCRIPTION	数量 AMT	备注 NOTE
59	1255.05-06	针距座销	Hinge pin for regulator	1	
60	101.06-26	拾牙轴轴套	Feed rocker shaft bushing	1	
61	101.02-06	拾牙轴挡圈	Thrust collar asm D=14.72 W=12	1	
62	11-80160610-01	拾牙轴挡圈螺钉	Screw SM1/4×40 L=6	2	
63	31-09018000-09	倒送料轴O形圈	Rubber ring	1	
64	1255.05-04	倒送料轴	Feed reverse shaft	1	
65	1255.05-03	倒送料轴套	Feed reverse bushing	1	
66	11-80150710-01	倒送料扳手紧固螺钉	Screw SM15/64×28 L=7	1	
67	11-80150710-01	倒送料扳手定位螺钉	Screw SM15/64×28 L=7	1	
68	101.07-17	倒送料扳手	Reverse feed control lever	1	
69	43-10250000-00	油线Φ2.5×250mm	Oil wick	0.25	
70	43-10250000-00	油线Φ2.5×720mm	Oil wick	0.72	

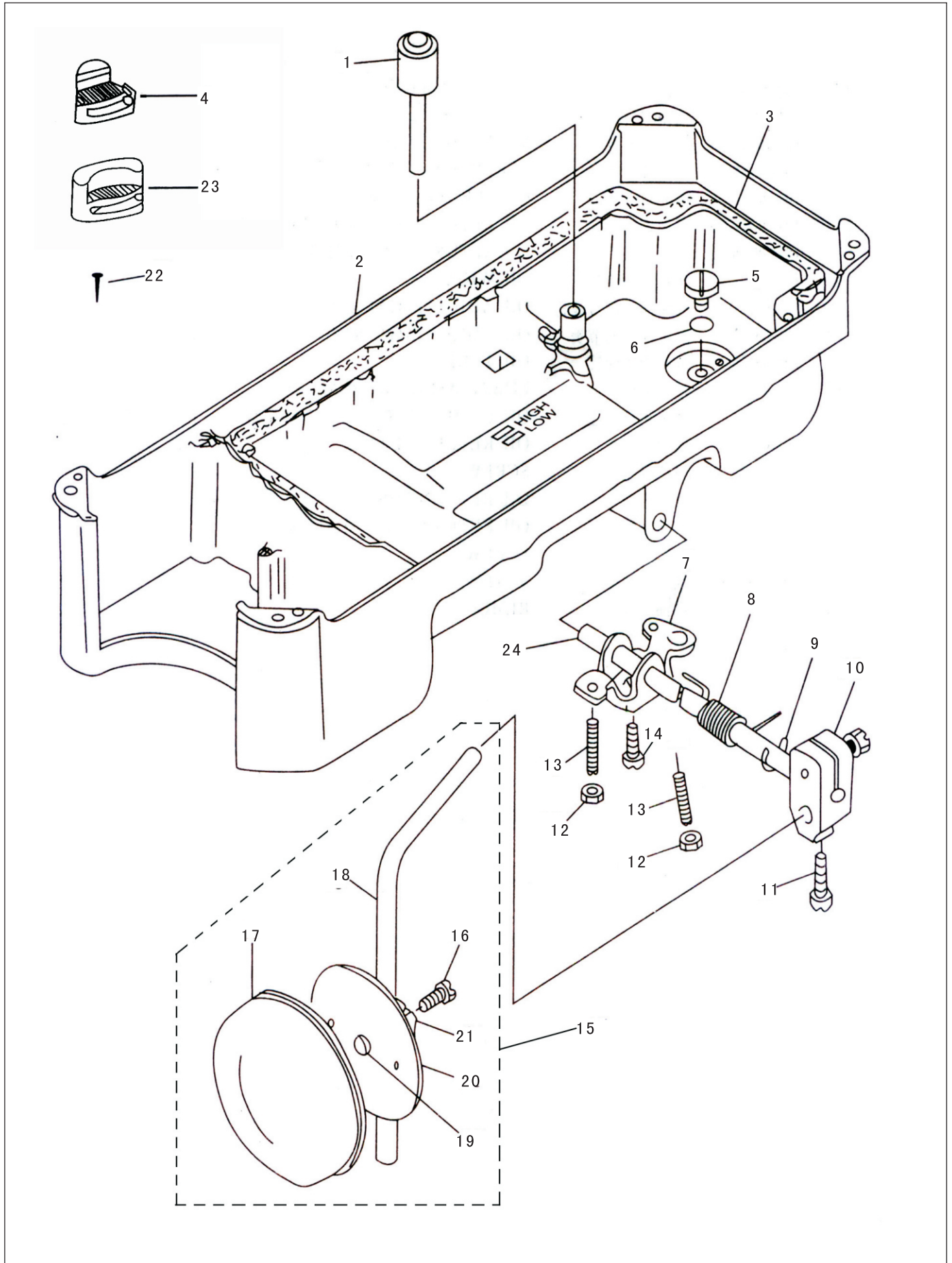
6. 润滑部件 Oil lubrication components



6. 润滑部件 Oil lubrication components

序号 NO.	图号 REF NO.	名称	DESCRIPTION	数量 AMT	备注 NOTE
1	109.09-01	油窗	Oil sight window	1	
2	31-20024000-09	油窗O形圈	Rubber ring	1	
3	101.08-19	上轴供油管	Main shaft oil tube	1	
4	11-40120625-01	回油管夹螺钉	Screw SM3/16x28 L=6	2	
5	101.08-33	回油毡夹	Oil feet presser	1	
6	101.08-28-00	回油管组件	Oil return tube holder asm	1	
7	101.08-28	回油管夹	Oil return tube holder	(1)	
8	42-05003000-00	回油管	Oil return tube	(0.66)	
9	101.08-30	回油毡组件	Oil return tube plate sam	(1)	
10	113.06-21	旋梭油量调节螺钉	Oil adjusting screw	1	
11	113.06-22	旋梭油量调节簧	Oil adjusting spring	1	
12	1230.08-20	旋梭轴供油管	Oil tube	1	
13	101.08-01-00	油泵组件	Lubricating oil pump asm	1	
14	101.08-16	油泵连接螺柱	Oil pump support SM15/64x29	1	
15	101.08-37	回油管压板	Oil return clamp	1	
16	11-40120625-01	回油管压板螺钉	Screw SM3/16x28 L=6	1	
17	11-40111025-01D	螺柱连接螺钉	Screw SM11/64x40 L=10	1	
18	11-40150925-01	油泵安装螺钉	Screw SM15/64x28 L=9	1	
19	101.08-18	供油管接头	Rubber joint	1	
20	124.09-44	毛线夹	Holder	1	

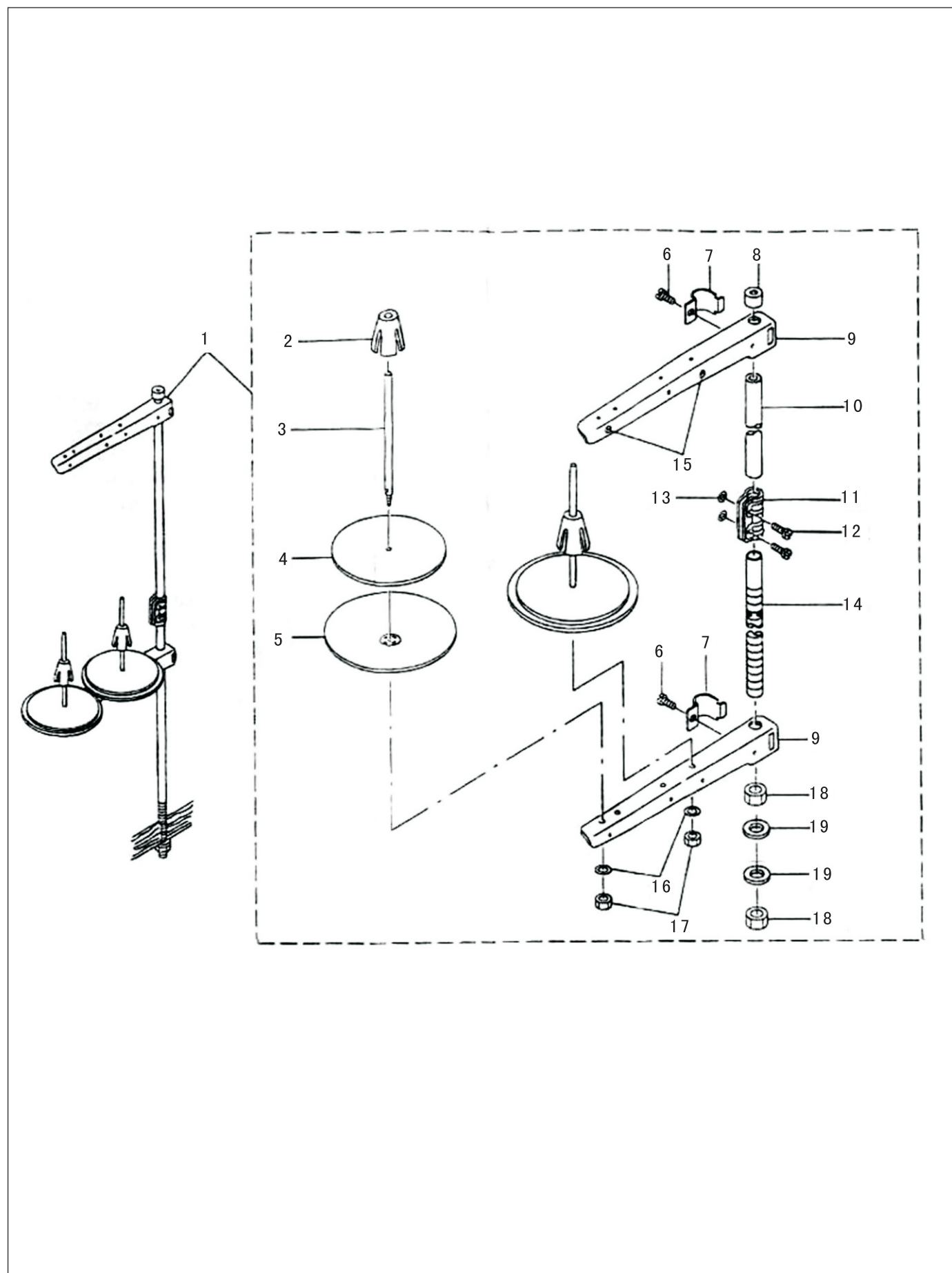
7. 油盘、抬压脚部件 Oil reservoir & knee lifter components



7. 油盘、抬压脚部件 Oil reservoir & knee lifter components

序号 NO.	图号 REF NO.	名称	DESCRIPTION	数量 AMT	备注 NOTE
1	101.09-02	抬压脚顶销	Knee press lifter rod	1	
2	101.09-01	油盘	Oil reservoir	1	
3	101.09-03	油盘衬垫	Gasket	1	
4	120.09-05	油盘支座（小）	Rubber cushion (small)	2	
5	11-70200720-01	排油孔螺钉	Screw SM5/16x24 L=7	1	
6	31-06224000-09	油塞螺钉O形密封圈	Rubber ring	1	
7	101.09-07	抬压脚双向曲柄	Connecting rod vertical	1	
8	101.09-08	抬压脚曲柄簧	Spring	1	
9	24-10000000-09	抬压脚轴开口挡圈	E- ring 10	1	
10	101.09-10	抬压脚操纵杆接头	Knee press rod bearing bracket	1	
11	12-90801423-02	抬压脚操纵接头螺钉	Screw M8x14	2	
12	14-60603320-02	限位调节螺母	Nut M6	2	
13	12-80603050-02	限位调节螺钉	Screw M6x30	2	
14	12-90601633-02	抬压脚双向曲柄螺钉	Screw M6x16	1	
15	101.09-15-00	操纵杆组件	Knee lifter plate rod asm.	1	
16	11-90151520-01	操纵杆夹头螺钉	Screw SM15/64x28 L=15	1	
17	101.09-20	操纵板软垫	Knee press plate asm	1	
18	101.09-15	操纵杆	Knee lifter plate rod	1	
19	101.09-18	操纵杆垫块	Rubber	1	
20	101.09-19	操纵板	Knee press plate	1	
21	101.09-17	操纵杆夹头	Knee press plate holder	1	
22	101.12-03	油盘座钉	Nail	8	
23	120.09-04	油盘支座（大）	Rubber cushion (big)	2	
24	101.09-06	膝抬压脚轴	Knee press rod	1	

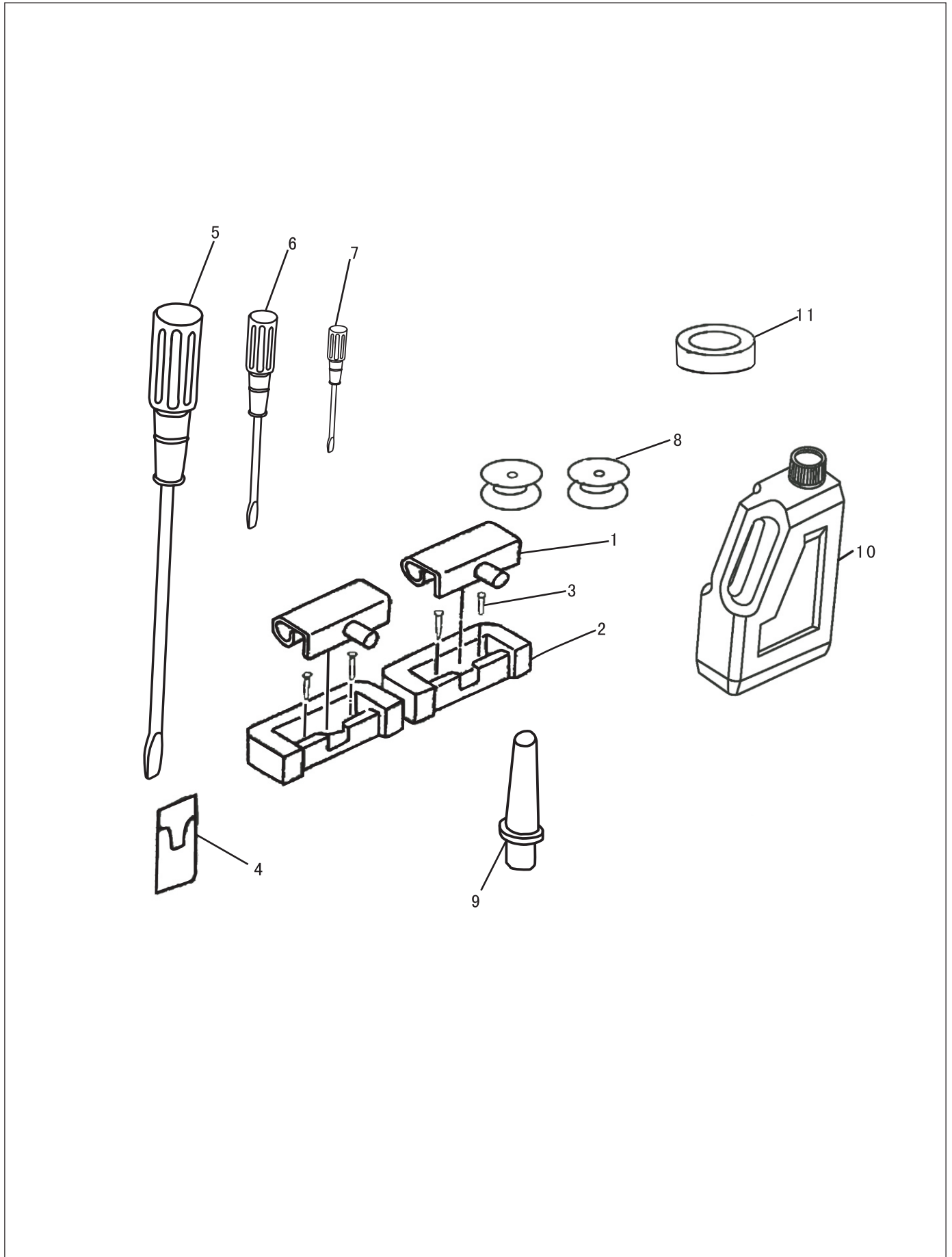
8. 线架部件 Thread stand components



8. 线架部件 Thread stand components

序号 NO.	图号 REF NO.	名称	DESCRIPTION	数量 AMT	备注 NOTE
1	101.11-01	线架组件	Thread stand asm	1	
2	279.12-00-22	线盘芯	Spool retainer	(2)	
3	279.12-00-23	线盘钉	Spool pin	(2)	
4	279.12-00-24	线盘垫	Spool rest cushion	(2)	
5	279.12-00-25	线圈托盘	Spool rest	(2)	
6	279.12-00-04	螺钉	Screw M6 L=18	(2)	
7	279.12-00-03	线臂抱攀	Thread guide arm joint	(2)	
8	279.12-00-01	上直管盖帽	Spool rest rod rjbber cap	(1)	
9	279.12-00-08	短固线臂	Spool rest arm	(2)	
10	279.12-00-02	线架上直管	Spool rest rod ,upper	(1)	
11	279.12-00-15	直管接头	Spool rest rod joint	(1)	
12	279.12-00-16	紧固螺钉	Screw M5 L=16	(2)	
13	279.12-00-14	紧固螺母	Nut M5	(2)	
14	279.12-00-19	下直管	Spool rest rod ,lower	(1)	
15	279.12-00-07	引线圈	Thread guide	(2)	
16	279.12-00-26	弹性垫圈	Spring washer	(2)	
17	279.12-00-27	螺帽	Nut M5	(2)	
18	279.12-00-20	螺帽	Nut M16x1.5	(2)	
19	279.12-00-21	防震垫	Washer 16.1x30x2.6	(2)	

9. 附件 Accessories



9. 附件 Accessories

序号 NO.	图号 REF NO.	名称	DESCRIPTION	数量 AMT	备注 NOTE
1	101.12-01	机头连接钩部件	Head connecting hook	2	
2	120.09-02	机头连接钩座	Head connecting hook socket	2	
3	101.12-03	机头连接钩座钉	Head connecting hook nail	4	
4	101.03-13	机针 DBX1 14#	Needles	1包	
5	101.12-15	螺丝刀 (大)	Screw driver (L)	1	
6	101.12-16	螺丝刀 (中)	Screw driver (M)	1	
7	101.12-17	螺丝刀 (小)	Screwdriver (S)	1	
8	109.03-41	梭心	Bobbin	2	
9	101.12-19	机头支柱	Head pole	1	
10	101.12-21	油箱	Oil bottle with oil	1	
11	101.09-22	油盘磁铁	Oil reservoir magnet	1	

10. 索引 Index

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1/16	101.01-02	1
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5/61	101.02-06	1
2/14	101.02-08	1
2/12	101.02-10	1
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2/5	101.02-22-00	(1)
2/4	101.02-22-05	(1)
2/15	101.02-23	1
2/6	101.02-24	(2)
2/3	101.02-25	(1)
2/9	101.02-28	(1)
1/20	101.02-29	1
2/8	101.03-01	(1)
3/2	101.03-06	1
3/1	101.03-07	1
3/8	101.03-08	1
3/7	101.03-09	1
3/11	101.03-13	1
9/4	101.03-13	1包
1/19	101.03-14	1
1/22	101.03-16	1
1/38	101.03-18	1
1/24	101.03-19-00	1
1/32	101.03-19-01	(1)
1/31	101.03-20	(1)
1/30	101.03-21	(1)
1/35	101.03-23	1
1/29	101.03-24	(2)
1/28	101.03-25	(1)
1/27	101.03-26	(1)
1/26	101.03-27	(1)
1/25	101.03-28	(1)
4/26	101.03-30	1
4/17	101.03-32	1
4/24	101.03-33	1
1/10	101.03-34	1
4/30	101.04-01	1
4/31	101.04-02	1
4/32	101.04-03	1
4/33	101.04-04	1
4/35	101.04-05	1
4/34	101.04-06	1
4/36	101.04-08	1
4/39	101.04-10	1
4/21	101.04-11-00	1

序号 NO.	图号 REF NO.	数量 AMT.
4/12	101.04-32	1
4/17	101.04-33	1
3/12	101.05-01	1
3/18	101.05-02	1
3/32	101.05-05	1
3/31	101.05-07	1
3/38	101.05-08	1
3/39	101.05-09	1
3/29	101.05-10	1
3/36	101.05-10	2
3/27	101.05-14	1
3/21	101.05-18	1
3/19	101.05-20	1
3/26	101.05-21	1
3/25	101.05-22	1
3/23	101.05-24	1
3/16	101.05-25	1
3/14	101.05-26	1
2/17	101.06-02	1
2/18	101.06-04	1
5/12	101.06-06	1
5/13	101.06-07	1
5/25	101.06-09	2
5/26	101.06-10	2
5/24	101.06-11	2
5/27	101.06-13-00	1
5/28	101.06-14	1
5/43	101.06-18	1
5/40	101.06-19	1
5/39	101.06-22	1
5/51	101.06-26	1
5/60	101.06-26	1
5/55	101.06-28	1
5/35	101.06-31-00	1
5/31	101.06-32	1
1/42	101.06-39	1
1/43	101.06-39-1	(1)
1/44	101.06-40	(1)
5/57	101.06-42	1
5/48	101.06-44	1
5/45	101.06-47	1
5/15	101.06-49	1
5/47	101.06-50	1
5/10	101.07-01	1
5/9	101.07-05	1
5/8	101.07-06	1
5/2	101.07-10A	1
5/68	101.07-17	1
5/17	101.07-22	1
5/38	101.07-23	1
5/36	101.07-24	1
5/22	101.07-26	1
6/13	101.08-01-00	1
6/14	101.08-16	1
6/19	101.08-18	1
6/3	101.08-19	1
6/7	101.08-28	(1)
6/6	101.08-28-00	1
6/9	101.08-30	(1)
6/5	101.08-33	1
1/7	101.08-34	1
6/15	101.08-37	1

序号 NO.	图号 REF NO.	数量 AMT.
5/68	101.07-17	1
5/17	101.07-22	1
5/38	101.07-23	1
5/36	101.07-24	1
5/22	101.07-26	1
6/13	101.08-01-00	1
6/14	101.08-16	1
6/19	101.08-18	1
6/3	101.08-19	1
6/7	101.08-28	(1)
6/6	101.08-28-00	1
6/9	101.08-30	(1)
6/5	101.08-33	1
1/7	101.08-34	1
6/15	101.08-37	1
7/2	101.09-01	1
7/1	101.09-02	1
7/3	101.09-03	1
7/24	101.09-06	1
7/7	101.09-07	1
7/8	101.09-08	1
7/10	101.09-10	1
7/18	101.09-15	1
7/15	101.09-15-00	1
7/21	101.09-17	1
7/19	101.09-18	1
7/20	101.09-19	1
7/17	101.09-20	1
9/11	101.09-22	1
8/1	101.11-01	2
9/1	101.12-01	2
7/22	101.12-03	8
9/3	101.12-03	4
9/5	101.12-15	1
9/6	101.12-16	1
9/7	101.12-17	1
9/9	101.12-19	1
9/10	101.12-21	1
4/19	101-04-34	1
1/36	109.01-44	1
3/13	109.03-41	1
9/8	109.03-41	2
5/33	109.05-33	1
6/1	109.09-01	1
2/19	11-60090620-01	2
5/3	11-00090620-01	2
5/14	11-00090620-01	1
5/30	11-60090620-01	2
5/41	11-00090620-01	1
1/49	11-00110620-01	1
2/16	11-00161120-01	2
1/37	11-20110920-02	2
6/10	113.06-21	1
6/11	113.06-22	1
4/2	11-30091020-01	1
3/3	114.02-30	1
3/10	114.02-31	1
1/68	11-40090625-01	(1)
1/77	11-40090625-01	2
4/38	11-40090825-01	2

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序号 NO.	图号 REF NO.	数量 AMT.
5/37	11-40110525-01	2
5/53	11-40110725-01	1
3/41	11-40110825-01	2
5/58	11-40111025-01	1
3/33	11-40111025-01D	1
6/17	11-40111025-01D	1
1/15	11-40120625-01	1
6/4	11-40120625-01	2
6/16	11-40120625-01	1
1/11	11-40120925-01	10
1/21	11-40120925-01	1
1/41	11-40120925-01	3
1/88	11-40120925-01	2
3/24	11-40120925-01	1
5/46	11-40121225-01	1
5/44	11-40121425-01	1
5/56	11-40121425-01	1
6/18	11-40150925-01	1
1/45	11-60060220-01	(2)
1/6	11-60080320-01	1
3/9	11-60080520-01	1
5/34	11-60080620-01	2
3/5	11-60090620-01	1
4/20	11-60091120-01	1
1/69	11-60091320-01	(1)
3/28	11-60121420-01	1
5/20	11-60121420-01	1
2/27	11-60181630-01	1
1/23	11-70110620-02	1
1/39	11-70110620-02	1
1/47	11-70121020-02	3
5/11	11-70121820-01	1
7/5	11-70200720-01	1
1/33	11-80090610-01	(1)
3/30	11-80110410-01	2
3/37	11-80110410-01	4
1/34	11-80150710-01	1
2/13	11-80150710-01	1
5/66	11-80150710-01	1
5/67	11-80150710-01	1
2/1	11-80151150-01	1
5/29	11-80151150-01	2
2/24	11-80160610-01	2
2/25	11-80160610-01	2
2/45	11-80160610-01	2
5/50	11-80160610-01	2
5/62	11-80160610-01	2
3/15	11-80160810-01	2
3/17	11-80160810-01	2
3/20	11-80160810-01	2
3/22	11-80160810-01	2
4/37	11-80160810-01	1
2/10	11-80181650-01	1
7/16	11-90151520-01	1
3/4	120.02-07	1
3/40	120.02-23	1
3/6	120.02-25	1
5/5	120.03-28	1
9/2	120.09-02	2
7/23	120.09-04	2

序号 NO.	图号 REF NO.	数量 AMT.
7/4	120.09-05	2
1/2	1230.01-01-02	1
5/23	1230.06-16	1
6/12	1230.08-20	1
6/20	124.09-44	1
1/87	12-40201221-02	(2)
1/3	1255.01-02	1
1/12	1255.01-05	1
1/13	1255.01-06	1
1/78	1255.01-09	1
1/79	1255.01-09-01	(1)
2/34	1255.02-01	1
2/35	1255.02-02	1
2/37	1255.02-03	1
2/38	1255.02-04	1
2/39	1255.02-05	1
2/41	1255.02-07	1
2/42	1255.02-08	1
2/44	1255.02-10	1
2/20	1255.02-11	1
5/7	1255.05-02	1
5/65	1255.05-03	1
5/64	1255.05-04	1
5/52	1255.05-05	1
5/59	1255.05-06	1
5/4	1255.05-07	1
2/43	12-60501822-01	3
1/1	1273.01-01	1
1/50	1273.01-02	1
2/40	1273.02-01	1
5/1	1273.05-01	1
5/19	1273.05-02	1
2/46	12-80500512-01	2
2/36	12-80600812-01	6
7/13	12-80603050-02	2
2/47	12-80801212-01	1
7/14	12-90601633-02	1
7/11	12-90801423-02	2
1/80	134.01-66-02	(1)
1/81	134.01-66-03	(1)
1/82	134.01-66-04	(1)
1/83	134.01-66-05	(1)
1/84	134.01-66-06	(1)
1/85	134.01-66-07	(1)
1/86	134.01-66-08	(1)
1/52	134.02-01	1
1/53	134.02-01-01	(1)
1/54	134.02-01-02	(1)
1/56	134.02-01-04	(1)
1/57	134.02-01-05	(1)
1/58	134.02-01-06	(1)
1/59	134.02-01-07	(1)
1/60	134.02-01-08	(2)
1/61	134.02-01-09	(1)
1/62	134.02-01-10	(1)
1/63	134.02-01-11	(1)

序号 NO.	图号 REF NO.	数量 AMT.
1/73	134.02-02-03	(2)
1/74	134.02-02-04	(1)
1/76	134.02-03	1
1/75	13-60115520-02	(1)
5/42	13-60184020-01	1
7/12	14-60603320-02	2
3/35	158.05-09	1
3/42	158.05-19	1
4/28	21-03810080-01	1
5/6	21-04808080-01	1
4/25	24-04000000-08	1
1/65	24-05000000-08	(1)
1/66	24-05000000-08	(1)
4/7	24-05000000-08	(1)
4/10	24-05000000-08	(1)
4/11	24-05000000-08	3
4/22	24-05000000-08	2
5/18	24-05000000-08	1
5/21	24-05000000-08	1
7/9	24-10000000-09	1
5/32	25-15000000-08	1
5/54	25-15000000-08	1
2/22	25-20000000-08	1
9/12	279.11-18	1
8/8	279.12-00-01	(1)
8/10	279.12-00-02	(1)
8/7	279.12-00-03	(2)
8/6	279.12-00-04	(2)
8/15	279.12-00-07	(2)
8/9	279.12-00-08	(2)
8/13	279.12-00-14	(2)
8/11	279.12-00-15	(1)
8/12	279.12-00-16	(2)
8/14	279.12-00-19	(1)
8/18	279.12-00-20	(2)
8/19	279.12-00-21	(2)
8/2	279.12-00-22	(2)
8/3	279.12-00-23	(2)
8/4	279.12-00-24	(2)
8/5	279.12-00-25	(2)
8/16	279.12-00-26	(2)
8/17	279.12-00-27	(2)
1/18	279-05-17	1
2/30	31-02818000-09	1
4/3	31-04018000-09	1
2/26	31-04424000-09	1
7/6	31-06224000-09	1
5/63	31-09018000-09	1
1/67	31-09428000-09	(1)
5/16	31-09428000-09	1
6/2	31-20024000-09	1
1/55	31-25070000-09	(1)
2/33	32-14550550-09	1
6/8	42-05003000-00	(0.66)
1/5	43-10250000-00	0.075
5/69	43-10250000-00	0.25
5/70	43-10250000-00	0.72
2/21	43-20300000-00	0.05
2/31	43-20650000-00	0.008
1/14	44-00000001-00	1

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