

# 电子花样机

COMPUTER-CONTROLLED PATTERN SEWING MACHINE WITH INPUT FUNCTION

## 使用说明书

OPERATION MANUAL

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## I、规格

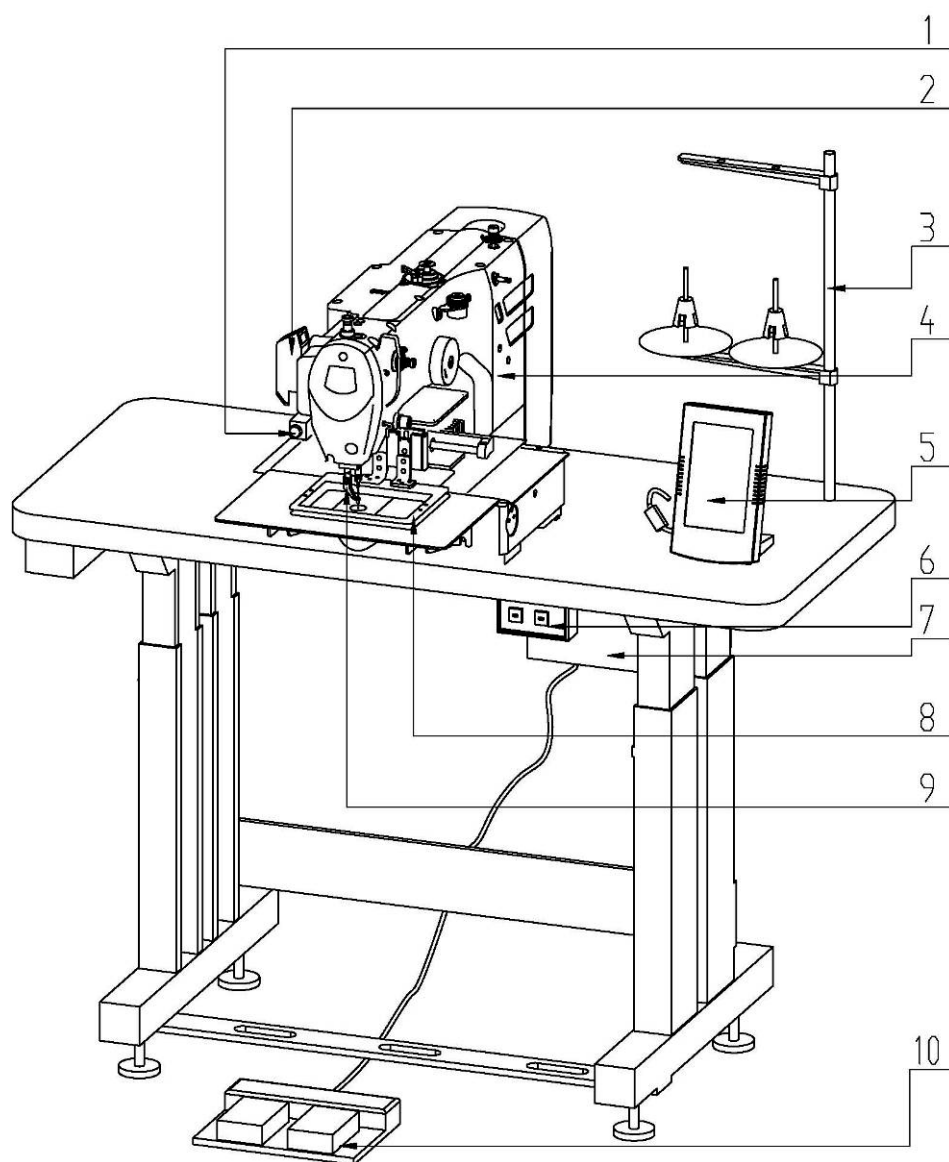
1	缝制范围	ZJ5770A-1510: 150mm×100mm
2	最高缝纫速度	2800rpm (间距在 3.5mm 以内)
3	缝迹长度	0.1-12.7mm
4	压脚送布	间断送布(脉冲马达双轴驱动方式)
5	针杆行程	41.2mm
6	使用机针	DP×17 18#
7	外压脚上升量	最大 25mm
8	中压脚行程	标准 4mm
9	中压脚上升量	20mm
10	可以变更中压脚上下位置	最大 0-7mm
11	旋梭	半旋转倍旋梭
12	使用机油	白油 18#
13	花样数据记忆	最大可存储 999 图案
14	暂停功能	在缝制过程中可以让缝纫机停止
15	放大、缩小功能	在选择缝迹缝制图案时,可以独立的放大、缩小 X、Y 轴
16	放大、缩小方式	可以选择增减缝迹长度、增减针数
17	缝纫速度限制	200-2800rpm
18	花样选择功能	图案 NO.选择方式 (1~999)
19	底线计数器	加数计数/减数计数方式 (0-9999)
20	缝制计数器	加数计数/减数计数方式 (0-9999)
21	存储器后备	切断电源时,自动地记忆使用的图案
22	第 2 原点的设定	用微动开关可以把缝制后的针位置移动到缝制范围内的任意位置设定为第 2 原点。此设定也可被记忆。
23	缝纫机马达	550 W 伺服马达
24	外形尺寸	机头包装: 940×630×500 电控包装: 570×480×250
25	重量	120Kg
26	消费电力	0.5Kw
27	使用温度范围	5℃-40℃
28	使用湿度范围	20%~80% (无结露)
29	电源电压	额定电压±10% 50 / 60 Hz
30	使用空气压力	0.5~0.55 MPa
31	空气消费量	1.8dm <sup>3</sup> /min
32	针杆上死点停止功能	缝制结束后,可以让针杆回到上死点位置

## I、SPECIFICATIONS

1	Sewing area	ZJ5770A-1510: 150mm×100mm
2	Max. sewing speed	2800 sti/min (when sewing pitch is 3.5 mm or less)
3	Stitch length	0.1 to 12.7 mm
4	Feed motion of feeding frame	Intermittent feed (2-shaft drive by stepping motor)
5	Needle bar stroke	41.2 mm
6	Needle	ORGAN needle DP×17 18#
7	Lift of feeding frame	Max. 30 mm
8	Intermediate presser stroke	4 mm (Standard)
9	Lift of intermediate presser	20 mm
10	Intermediate presser down position variable	Max. 0-7 mm
11	Shuttle	Double-capacity semi-rotary hook
12	Lubricating oil	Oil 18#
13	Memory of pattern date	Max. 999 patterns
14	Temporary stop facility	Used to stop machine operation during a stitching cycle
15	Enlarging/Reducing facility	Allows a pattern to be enlarged or reduced on the X axis and Y axis independently when sewing a pattern
16	Enlarging/Reducing method	Pattern enlargement /reduction can be done by increasing/ decreasing either stitch length or the number of stitches.
17	Max. sewing speed limitation	200 to 2800 sti/min
18	Pattern selection facility	Pattern No. selection method (1 to 999)
19	Bobbin thread counter	UP/DOWN method (0 to 9999)
20	Sewing counter	UP/DOWN method (0 to 9999)
21	Memory back up	In case of a power interruption, the pattern being used will automatically be stored in memory
22	2nd origin setting facility	Using jog keys, a 2nd origin can be set in the desired position within the sewing area. The set 2nd origin is also stored in memory
23	Sewing machine motor	550W Servo-motor
24	Dimensions	Head box: 940×630×500 Control box: 570×480×250
25	Weight	120Kg
26	Power consumption	0.5Kw
27	Operating temperature range	5°C-40°C
28	Operating humidity range	20%~80% (No dew condensation)
29	Line voltage	Rated voltage ±10% 50 / 60 Hz
30	Air pressure used	0.5 to 0.55 MPa
31	Air consumption	1.8dm <sup>3</sup> /min
32	Needle highest position stop facility	After the completion of sewing, the needle can be brought up to its highest position.

## II、各部的名称

### CONFIGURATION



1、暂停开关	Temporary stop switch	2、拨线开关	Wiper switch
3、线架	Thread stand	4、缝纫机机头	Machine head
5、操作盒	Operation panel	6、电源开关	Power switch
7、控制箱	Control box	8、外压脚	Feeding frame
9、中压脚	Intermediate presser	10、脚踏板	Foot pedal

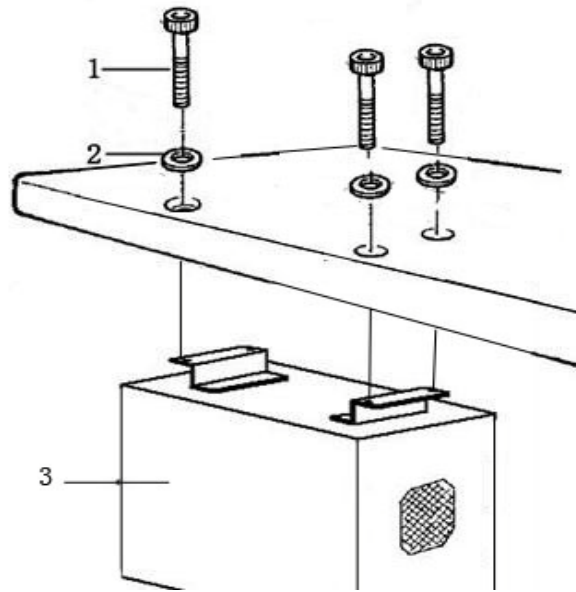
### III、安装

#### INSTALLATION

##### 1、电控箱的安装/Installing the electrical box

如图所示，把电控箱 3 用螺钉 1、垫圈 2 固定在台板上。

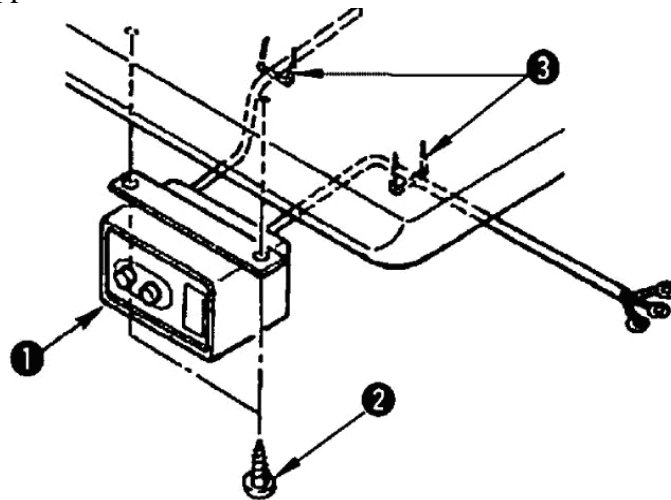
Install the electrical box 3 on the underside of the table at the location illustrated using bolt having hexagonal indentation on the head 1 and plain washer 2 supplied with the machine.



##### 2、电源开关的安装、连接/ Installing and connecting the power switch

把电源开关 1 用木螺钉 2 固定到台板下面，用附件中的电线夹 3 固定好电源线。

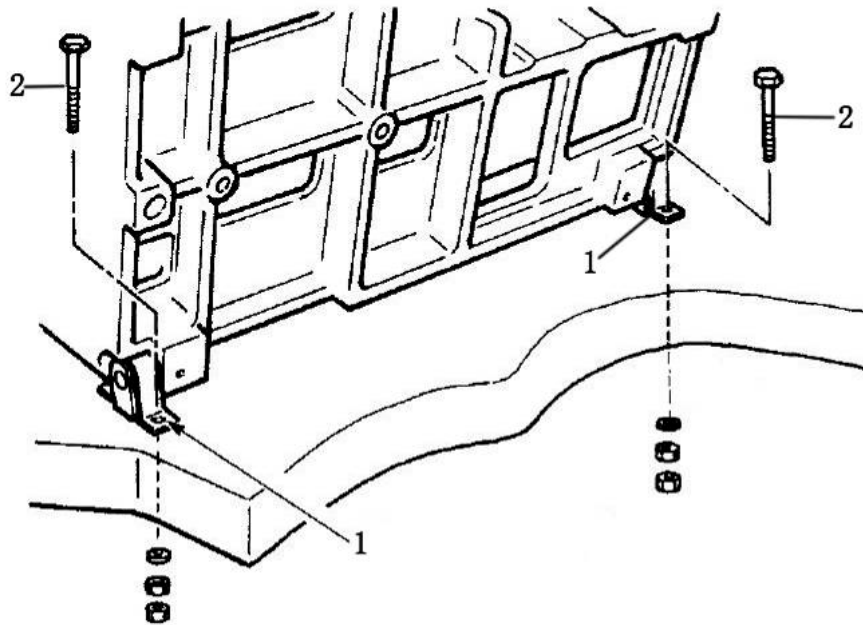
Fix power switch 1 under the machine table with wood screws 2. Fix the cable with staples 3 supplied with the machine as accessories in accordance.



### 3、缝纫机机头的安装/Installation of the sewing machine head

如图所示：把铰链 1 对准台板，用螺钉 2 固定。

Fix the holes of hinges 1 to the holes of table with screw 2 and fix as shown in the figure.

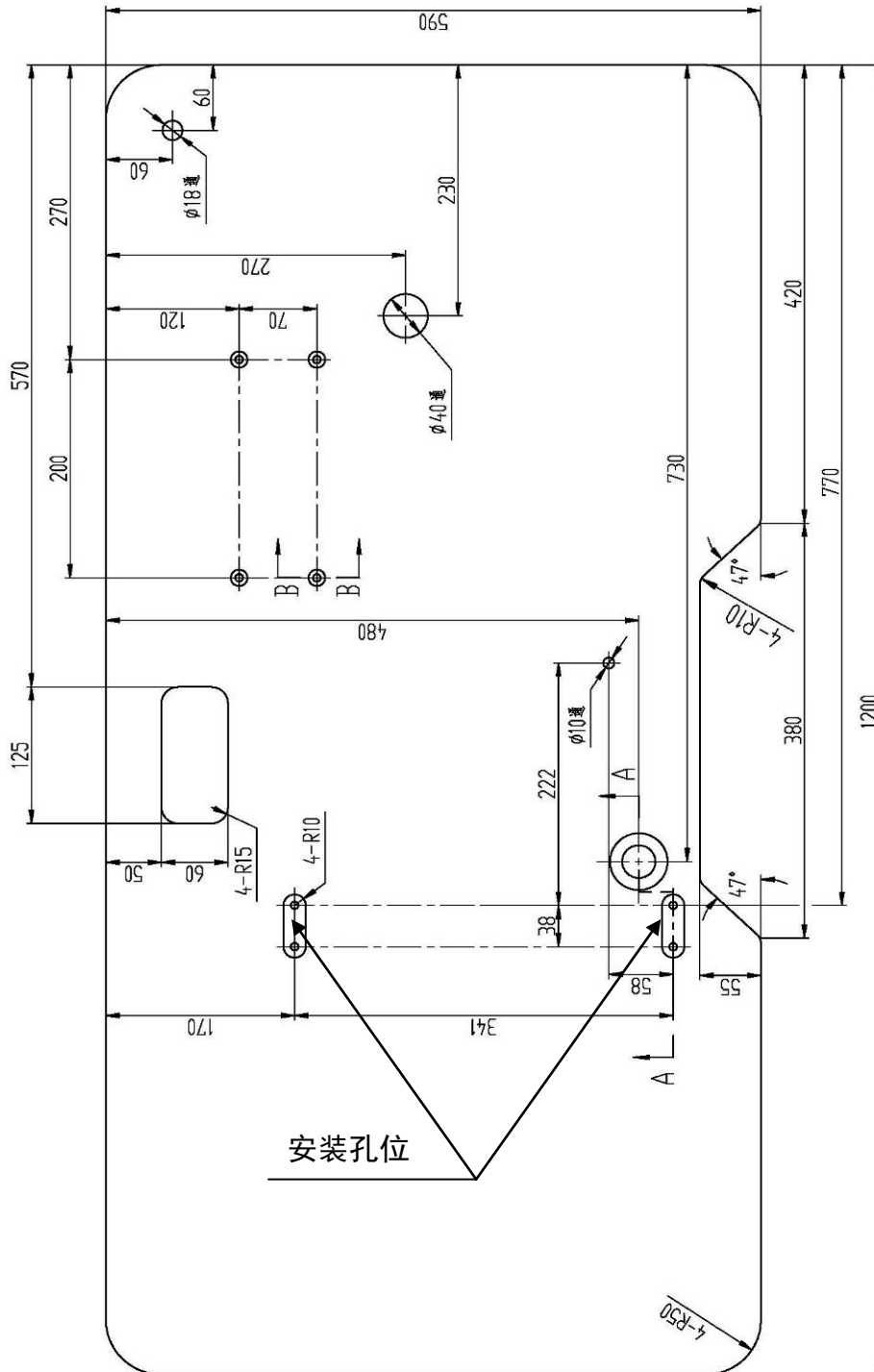


\*注意：搬运机器时，请一定要 2 人以上进行。

**\*WARNING:** To prevent possible accidents caused by the full of sewing machine, perform the work by two persons or more when the machine is moved.



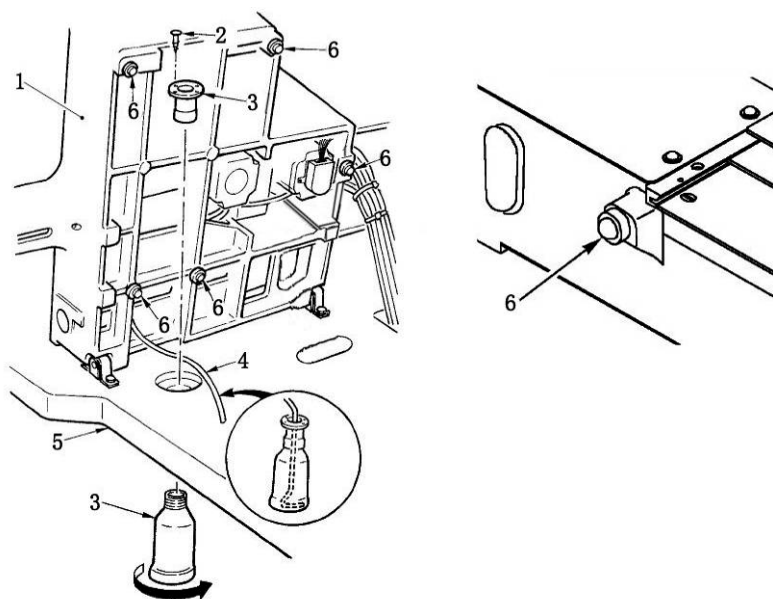
#### 4、台板图纸/Drawing of the table



## 5、油杯和机头座垫的安装

### Installing the drain receiver and the head support rubber

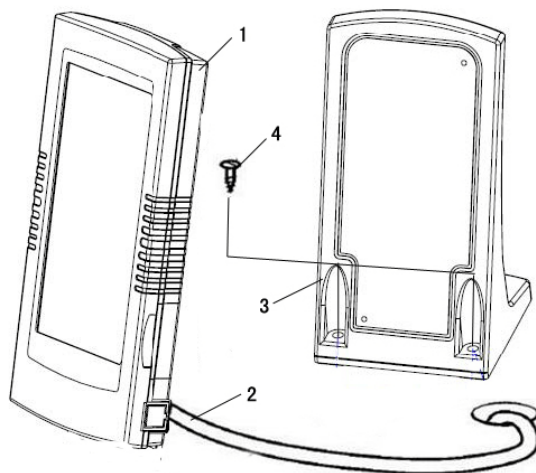
- 1) 用木螺钉 2 将油杯 3 固定在台板 5 上；
  - 2) 将油管 4 插入到油杯 3 里面；
  - 3) 将机头座垫 6 装到机器 1 上。
- 1) Fix drain receiver 3 in the installing hole of table 5 with setscrews 2.
  - 2) Insert sewing machine drain pipe 4 into drain bin 3.
  - 3) Insert head support rubbers 6 to machine bed.



## 6、操作盘的安装/Installing the panel

用木螺钉 4 将操作盒底座 3 装在台板上。

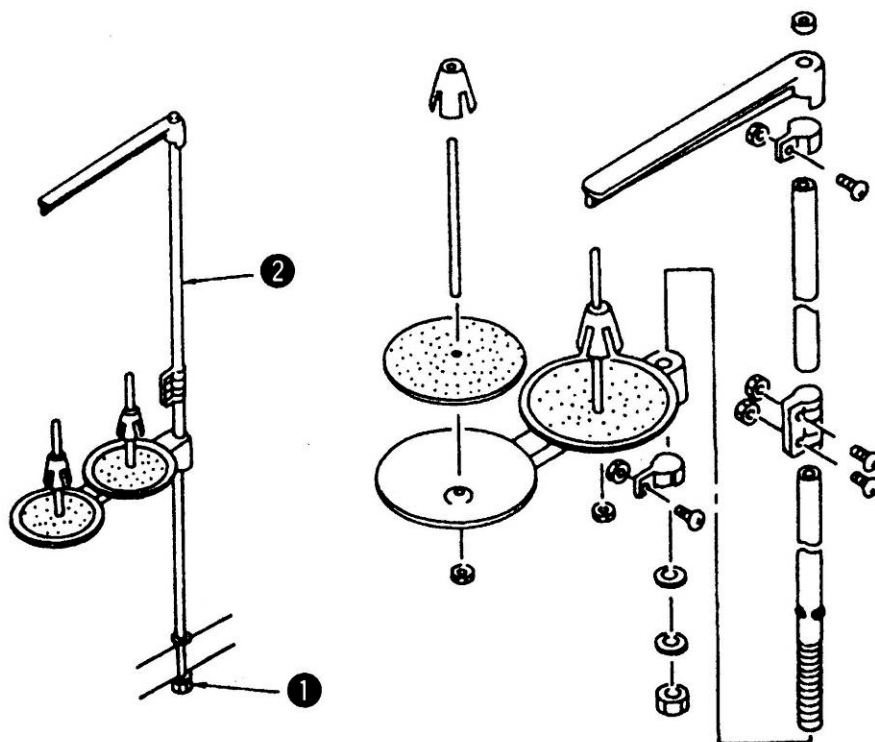
Fix operation panel installing plate 3 to and optional place on the table with two wood screws 4.



### 7、线架装置的安装方法/Installing the thread stand

组装线架装置，将它安装在台板的右上方的孔内。

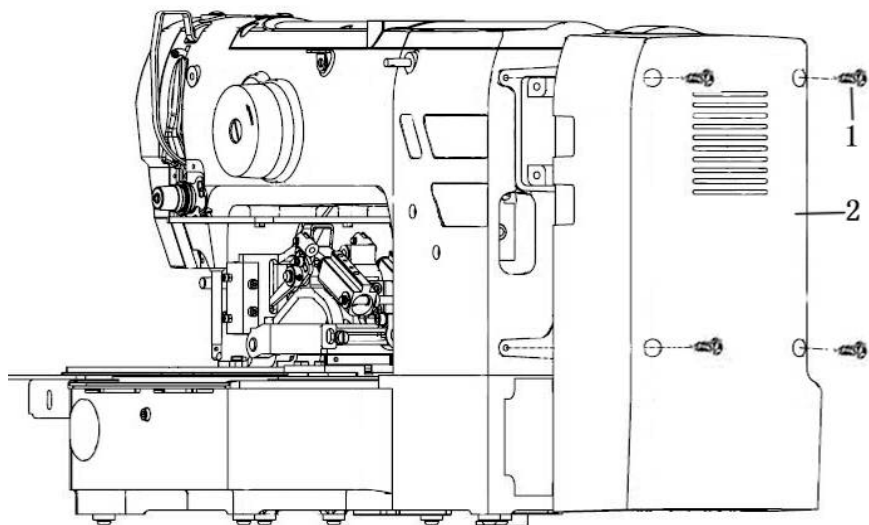
Assemble the thread stand, and put it in the hole in the top left corner of the machine table.



### 8、马达护罩的安装/Installing the motor cover

将后罩 2 用螺钉 1 固定在机器上。

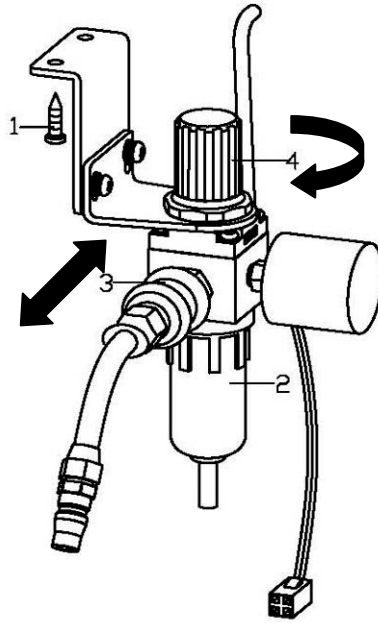
Install motor cover 2 on the machine with screw 1.



### 9、调压阀的安装/Installing the regulator

将调压阀 2 用木螺钉 1 装在台板上。打开空气栓 3，向上拉空气调整旋钮 4，旋转旋钮，把空气压力计 2 调整到 0.5~0.55MPa(5~5.5kgf / cm<sup>2</sup>),再按下旋钮固定。

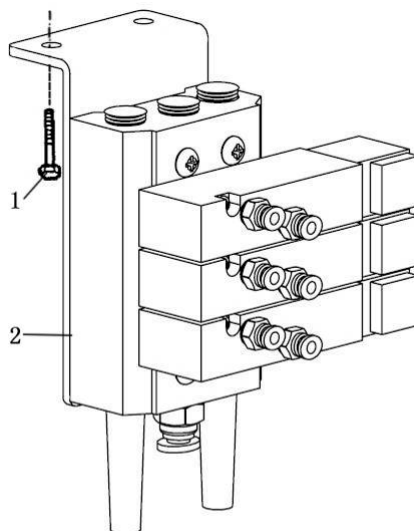
Install regulator 2 on the table with two wood screws 1. Open air cock 3. pull up the knob 4 of air regulator and turn it to adjust so that the air pressure gauge 2 indicates 0.5 to 0.55MPa (5 to 5.5kgf / cm<sup>2</sup>). Then press the knob to maintain the pressure value.



### 10、电磁阀组件的安装/Installing the solenoid valve asm.

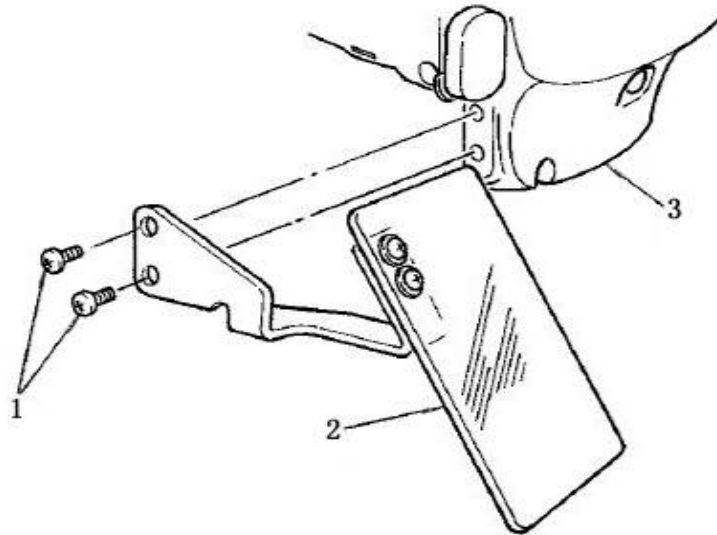
将电磁阀 2 用木螺钉 1 装在台板上。

Install the solenoid valve asm. with two wood screws 1.



## 11、 眼睛防护罩的安装/Installing the eye protection cover

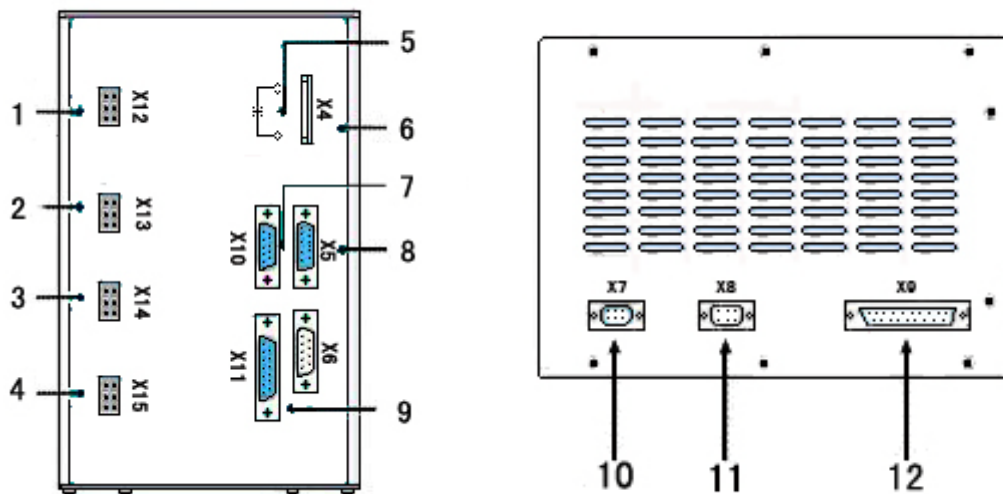
请一定要用螺钉 1 将眼睛防护罩 2 安装到缝纫机面板 3 之后再使用缝纫机。  
Use eye protection cover 2 after securely attaching it on face plate cover 3 with screw 1.



## 12、 电线的连接/Connecting the cord

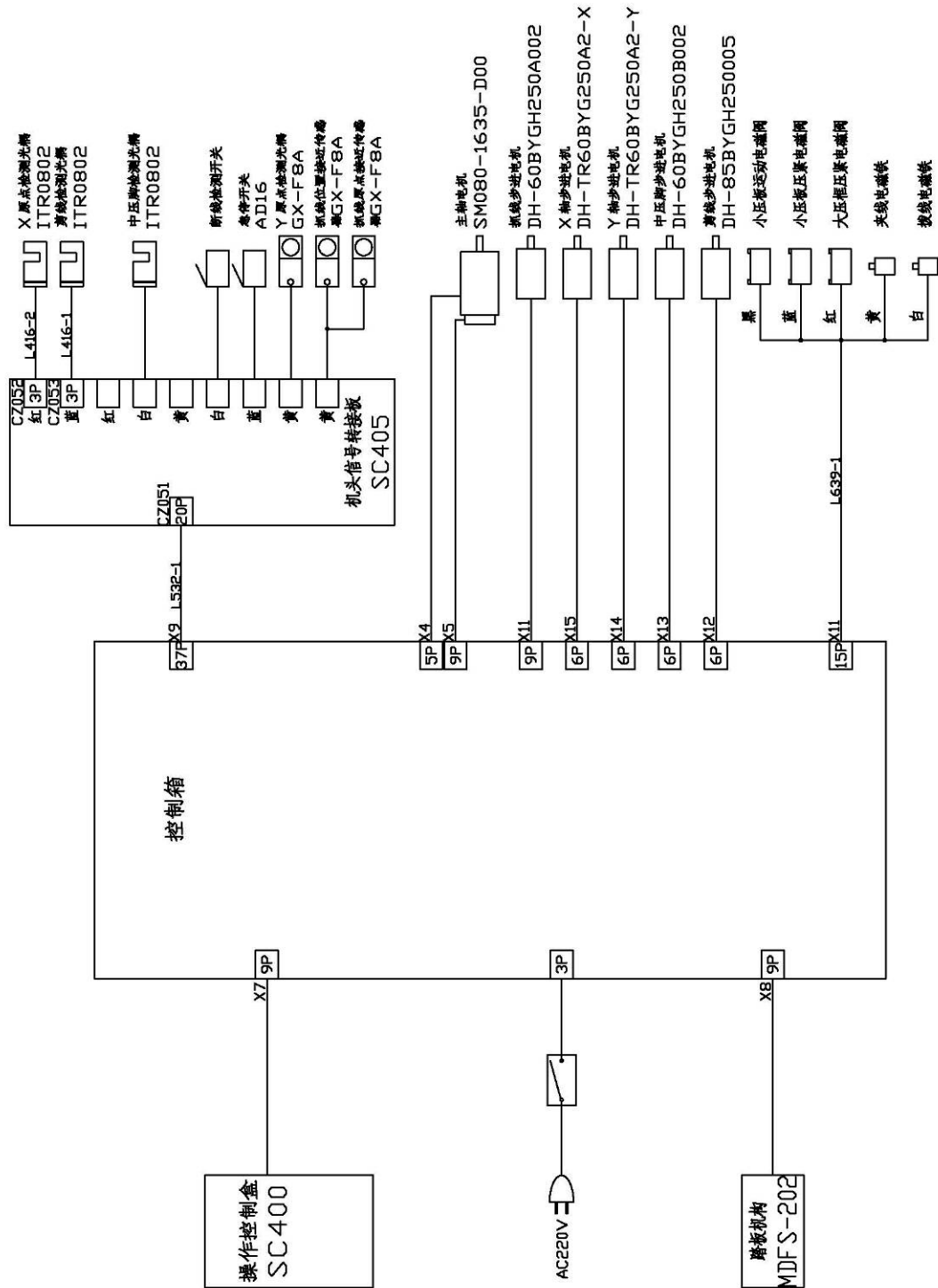
请将机头上的电机线、信号线按照线上字母标识与电控箱连接，确保连接正确，没有遗漏。

Please let the motor cable, the signal line of the machine head connect with the electronic control box according to online identity, make sure the connection is correct, there is no omission.



1.剪线电机 X12	Shear line motor X12
2.中压脚步进电机 X13	Foot step motor X13
3.Y 向步进电机 X14	Y motor X14
4.X 向步进电机 X15	X motor X14
5.接地线缆	Safe line
6.主轴电机 X4	Main motor X4
7.抓线步进电机 X10	Grasp line motor X10
8.主轴电机编码器 X5	Main motor coder X5
9.电磁铁连接线缆 X11	Electromagnet
10.面板 X7	Control plank X7
11.脚踏板 X8	Pedal switch X8
12.信号转接接口 X9	Signal connects X9

### 13、 系统框图/System diagram



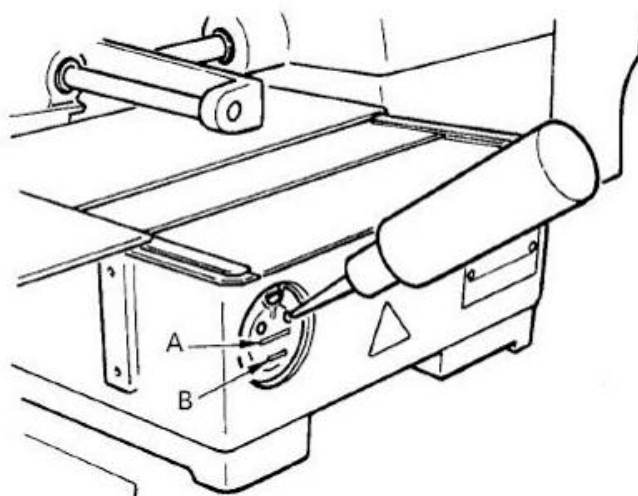
## IV、缝纫机的准备

### PREPARATION OF THE SEWING MACHINE

#### 1、加油方法/Lubrication

在缝纫前请确认机油在油窗的上刻度 A 与下刻度 B 之间。如果机油过少，请用油壶进行加油。

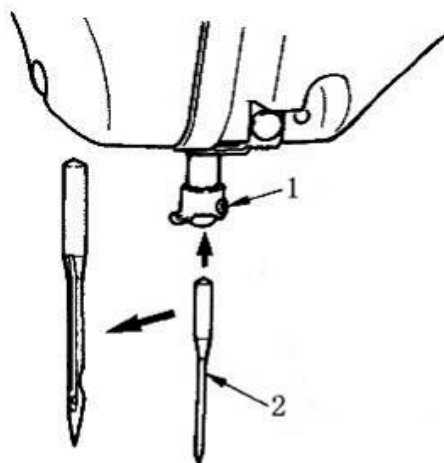
Check that the place between lower line B and upper line A is filled with oil. Fill there with oil using the oiler supplied with the machine as accessories when oil is short.



#### 2、机针的安装方法/ Attaching the needle

松开螺钉 1，把机针 2 的长沟朝向面前，放进针杆的深处，然后拧紧固定螺钉 1。

Loosen setscrew 1 and hold needle 2 with the long groove facing toward you. Then fully insert it into the hole in the needle bar, and tighten setscrew 1.





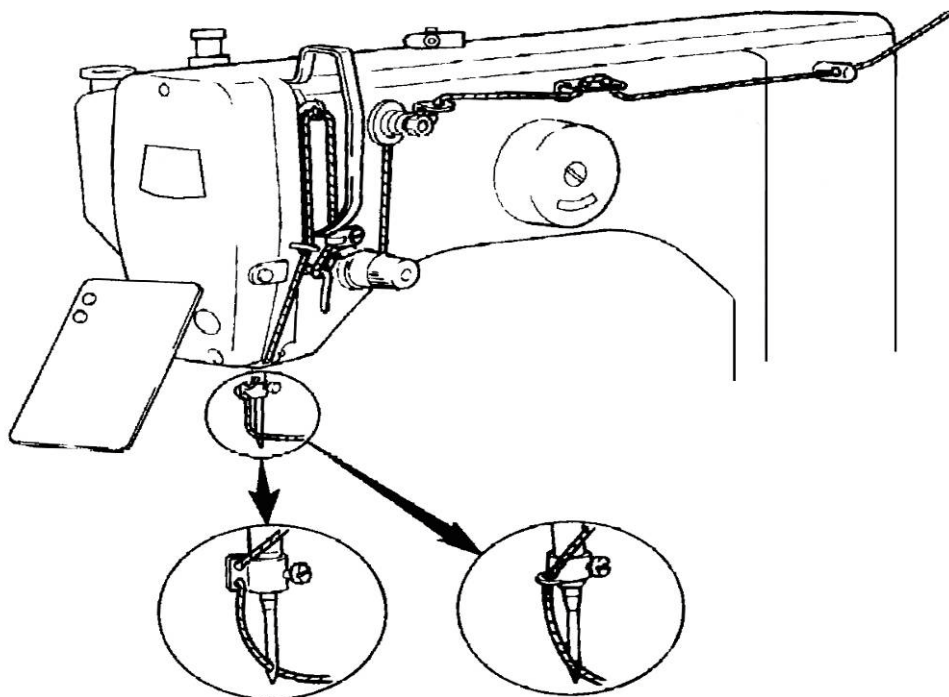
**\*注意：**为了防止机器突然启动造成人身事故，请一定关掉电源后进行操作。

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

### 3、上线的穿线方法/ Threading the machine head

缝纫前请按图所示穿好线。

Before the machine work thread the machine head as shown in the figure.



**\*注意：**为了防止机器突然启动造成人身事故，请一定关掉电源后进行操作。

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

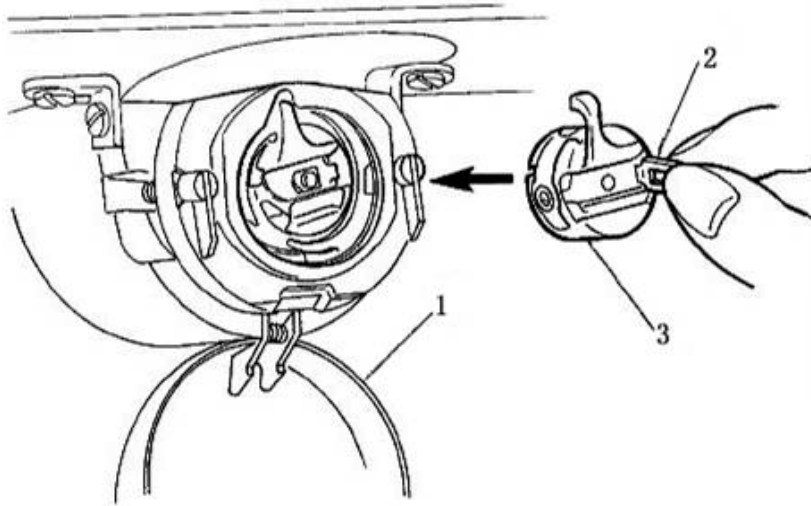
### 4、梭壳的取下及插入/Installing and removing the bobbin case

- 1) 打开梭床罩 1。
- 2) 拨起梭壳 3 上的抓脚 2，取出梭壳。
- 3) 放入时，按图示的方向装入梭壳，直到发出“咔嚓”的声音。

**\*注意：**若梭壳没有装到位，在缝制过程中梭壳就会有可能会脱落。

- 1) Open hook cover 1.
- 2) Raise latch 3 of bobbin case 2, and remove the bobbin case.
- 3) When entering bobbin case, insert it with the latch tilted until “click” sounds.

**\*Caution:** If it is not fully inserted, bobbin case 2 may slip off during sewing.



**\*注意：** 为了防止机器突然启动造成人身事故，请一定关掉电源后进行操作。

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

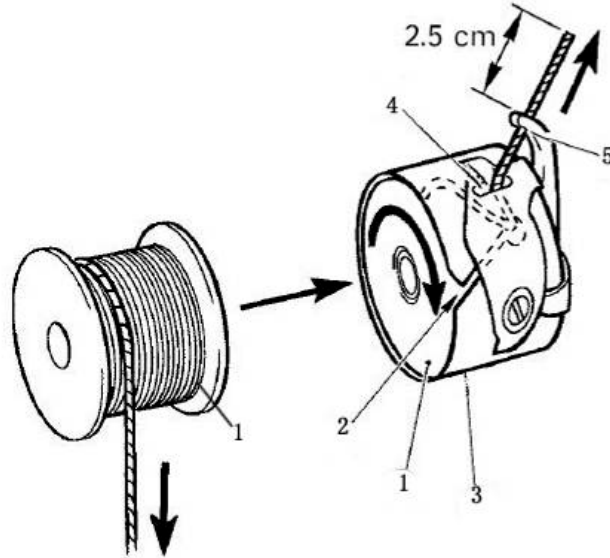
#### 5、旋梭的安装方式/Installing the bobbin

- 1) 把梭心 1 按图示的方向装入梭壳 3 中。
- 2) 把线穿过梭壳 3 的穿线口 2，然后拉线，把线从线张力弹簧下面的过线口 4 穿出来。
- 3) 把线从角部的线孔 5 穿出约 2.5cm。

**\*注意：** 若梭心装入的方向相反，缝制过程中底线会不稳定。

- 1) Set the bobbin 1 into bobbin case 3 in the direction shown in the figure.
- 2) Pass the thread through thread slit 2 of the bobbin case 3, and pull the thread as it is. By so doing, the thread will pass under the tension spring and be pulled out from thread hole 4.
- 3) Pass the thread through thread hole 5 of the horn section about 2.5 cm from the thread hole.

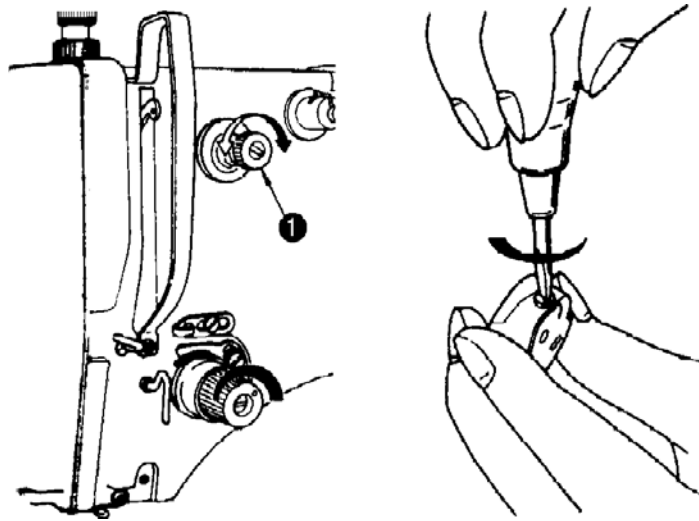
**\*Caution:** If the bobbin is installed in the bobbin case orienting the reverse direction, the bobbin thread pulling out will result in an inconsistent state




### 6、线张力的调整方法/Adjusting the thread tension


用 1 调节面线张力，用 2 调节底线张力。

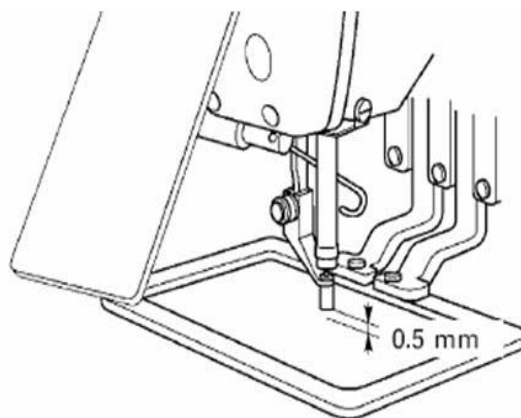
Adjust needle thread tension with 1 and bobbin thread tension with 2.



### 7、中压脚高度的设置/Intermediate presser height

按中压脚设定按钮，使机针到达最下点时，请用十数字键把中压脚下端与布料的间隙调整为 0.5mm。(中压脚的设定最大范围标准为 7mm。)

Press INTERMEDIATE PRESSER SETTING button  and adjust with TEN keys so that the clearance between the bottom end of intermediate presser and the cloth is 0.5 mm (max. 7 mm).



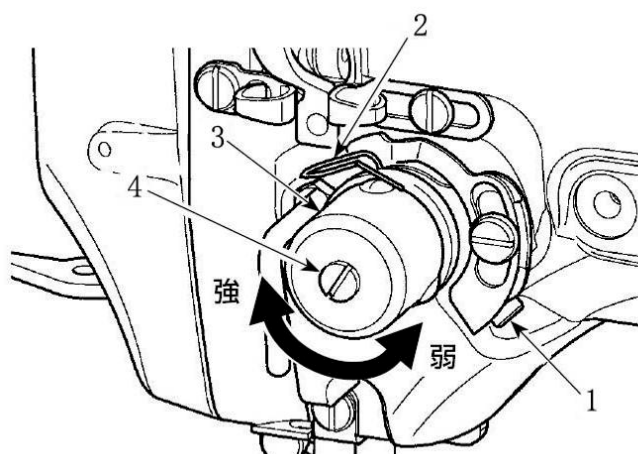
**\*注意：** 在调节过程中请不要让外压脚、中压脚夹到手或手指。

**\*Caution:** Take care not to get your hands and fingers caught in the feeding frame or intermediate presser.

### 8、挑线弹簧的调节/Adjusting the thread take-up spring

1) 移动量的调节  
1, 转动夹线器向右转动, 动作量变大, 拉线量变多。

3) 强度的调节  
改变挑线弹簧 3 的强度时, 请在螺钉 1 在锁紧的状态下, 用螺丝刀调节线张力杆 4, 向右转动, 挑线簧强度变强, 向左转动之后, 强度变弱。



#### 1) Adjusting the stroke

Loosen setscrew 1, and turn thread tension asm. 2. Turning it clockwise will increase the moving amount and the thread drawing amount will increase.

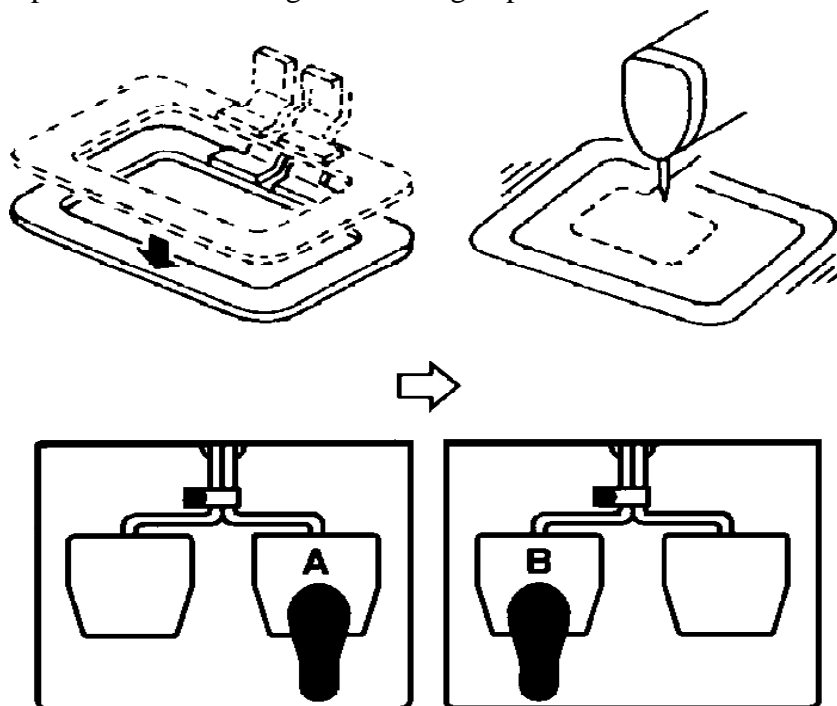
#### 2) Adjusting the pressure

To change the pressure of the thread take-up spring 3, insert a thin screwdriver into the slot of thread tension post 4 while screw 1 is tightened, and turn it. Turning it clockwise will increase the pressure of the thread take-up spring. Turning it counterclockwise will decrease the pressure.

## V、缝纫机的操作

### OPERATION OF THE SEWING MACHINE

- 1) 把缝料放到缝纫机上。
  - 2) 踩踏板 A，压脚下降，再次踩踏板 A，压脚上升。
  - 3) 放下压脚后，踩踏板 B，开始缝制。
  - 4) 缝制结束后，机针返回到缝制开始的位置，压脚上升。
- 1) Set a workpiece on the sewing machine.
  - 2) Depress the pedal switch A, and the feeding frame will come down. Depress it again, and the feeding frame will go up.
  - 3) Depress the pedal switch B after the feeding frame has come down and the sewing machine will start sewing.
  - 4) After the sewing machine completes sewing, the needle point will return to the start point and the feeding frame will go up.



**\*注意：**请不要让外压脚、中压脚夹到手或手指。另外，压脚在高速移动过程中，注意不要碰到手或手指。

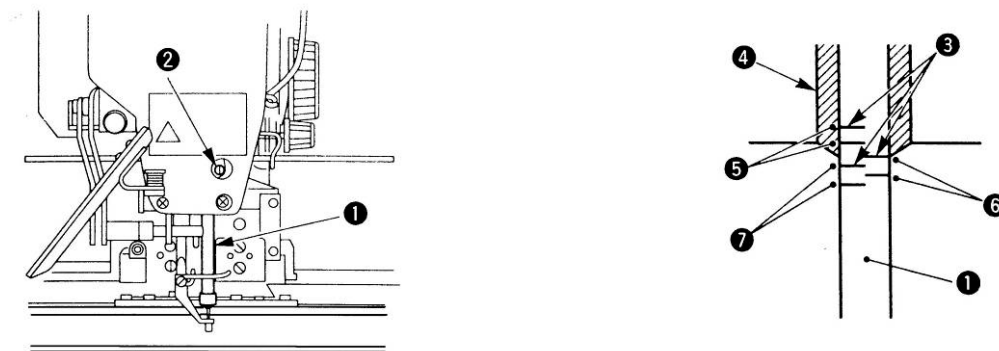
**\*Caution:** Take care not to get your hands and fingers caught in the feeding frame or intermediate presser when they are in operation.  
In addition, be careful not to allow your hands and fingers to hit against the work clamp since it moves at a high speed.

## VI、维修

### MAINTENANCE

#### 1、针杆高度（改变机针长度）

##### Adjusting the height of the needle bar (Changing the length of the needle)



⑤: DPX5 用刻线 / Marker line for DPX5

⑥: DPX17 用刻线(#22 以上) / Market line for DPX17(with needle count higher than #22)

⑦: DPX17 用刻线(#22 以下) / Marker line for DPX17(with needle count lower than #22)

- 1) 把针杆①降到最下点，拧松针杆套筒固定螺丝②，把针杆上刻线③调整对准针杆下端块④的下端。
- 2) 如上图所示，根据机针尺寸改变调节位置。  
(注意) 调整后请一定确认扭矩不要松弛。

- 1) Bring needle bar ① down to the lowest position of its stroke. Loose needle bar connection screw ② and adjust so that the upper marker line ③ engraved on the needle bar aligns with the bottom end of the needle bar bushing lower ④.
- 2) As illustrated in the above figure, change the adjusting position in accordance with the needle count.

**(Caution) After the adjustment, turn the pulley to check for an extra load.**

#### 2. 机针与旋梭/ Adjusting the needle-to-shuttle relation

- 1) 用手转动皮带轮，针杆①上升时，把下刻线②对准针杆下挡块下端。
- 1) Turn handwheel by hand to ascend the needle bar ①. Adjust so that lower marker line ② on the ascending needle bar aligns with the bottom end of the needle bar bushing lower.

④: DPX5 用刻线

Marker line for DPX5 needle

⑤: DPX17 用刻线 (#22 以上)

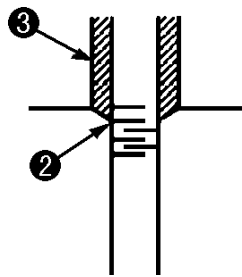
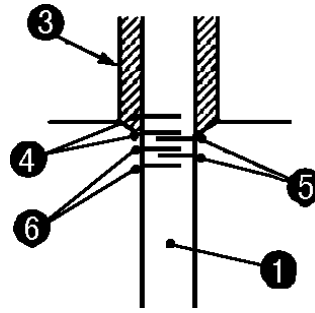
Marker line for DPX17 needle

(With needle count higher than #22)

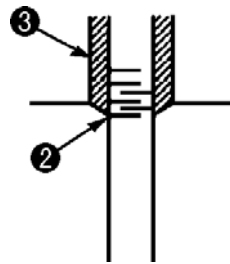
⑥: DPX17 用刻线 (#22 以下)

Marker line for DPX17 needle

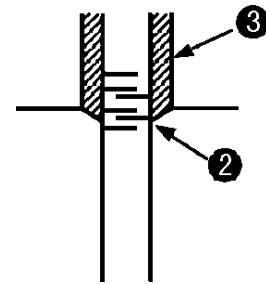
(With needle count lower than #22)



使用 DPX5 时  
When a DPX5  
Needle is used.



DPX17(#22 以下)时  
When DP x 17needle  
(Of which needle count  
is lower than#22) is used.



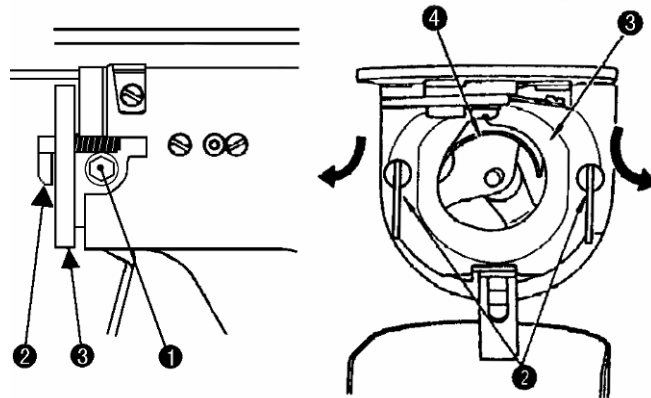
DPX17(#22 以上)时  
When DPx17 needle  
(of which needle count  
is higher than is used.

2) 拧松驱动固定螺钉①，左右打开中旋梭压片②，卸下中旋梭压脚③。

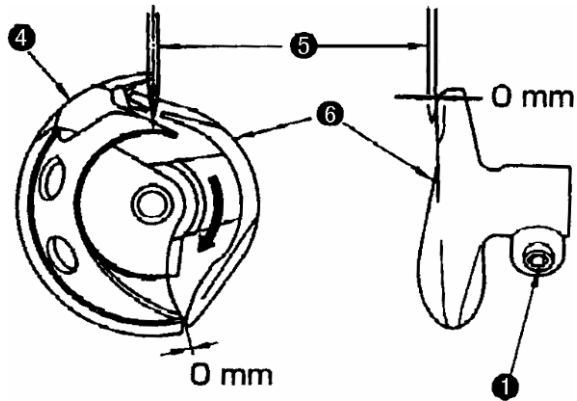
(注意) 此时，要注意不要让中旋梭④掉下来。

2) Loosen setscrew ① in the driver. Drawing bobbin case opening lever hook ② toward you, open it to the right and left until bobbin case opening lever ③ comes off.

(Caution) At this time, be careful not to let shuttle ④ come off and fall.

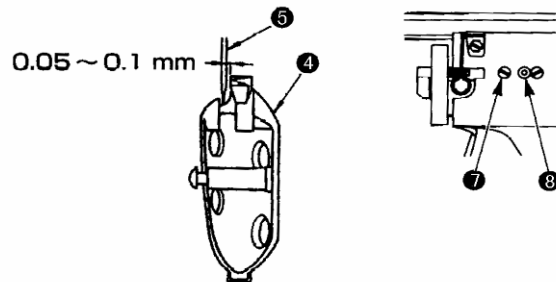


- 3) 为了让中旋梭④的梭尖与针⑤的中心一致，同时让驱动器⑥的前端面接针，防止机针弯曲。因此，把机针和驱动器前端面的间隙调节为 0mm，然后拧紧驱动器固定螺丝①。

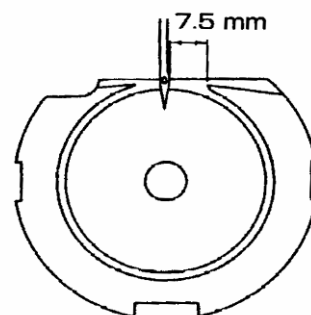


- 3) Adjust so that the point of shuttle ④ meets the center of needle ⑤, and that a clearance of 0 mm is provided between the front end face of driver ⑥ and needle as the front end face of driver receives needle to prevent the needle from being bent. Then tighten setscrew ①.

- 4) 拧松大旋梭固定螺丝⑦，左右转动大旋梭调节轴⑧，调节大旋梭的前后位置，把机针⑤和中旋梭④的梭尖的间隙调整为 0.05~0.1mm。



- 5) 调节完大旋梭的前后位置后，机针和大旋梭的间隙应为 7.5mm，然后拧紧大旋梭固定螺丝⑦。



- 4) Loosen shuttle race screw ⑦, and adjust the longitudinal position of the shuttle race. To do this adjustment, turn shuttle race adjusting shaft ⑧ clockwise or counterclockwise to provide a 0.05 to 0.1 mm clearance between needle ⑤ and the blade point of shuttle ④.
- 5) After adjusting the longitudinal position of shuttle race, further adjust to provide a 7.5 mm clearance between the needle and the shuttle race. Then, tighten screw ⑦ of shuttle race .



### 3. 压脚的高度/Adjusting the height of the feeding frame

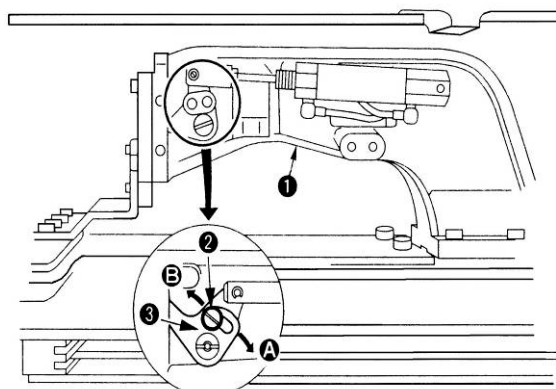
1) 拧松送布台①左右的固定螺丝

②，把布压脚挡块③拨到 B 方向，压脚的高度变高。

2) 调整了高度后，拧紧固定螺丝②。

1) Loosen screws ② located on the right and left sides of feed bracket ①. Moving cloth presser stopper ③ to the direction B will increase the height of feeding frame.

2) After the adjustment of the height of the feeding frame, securely tighten the screws ②.

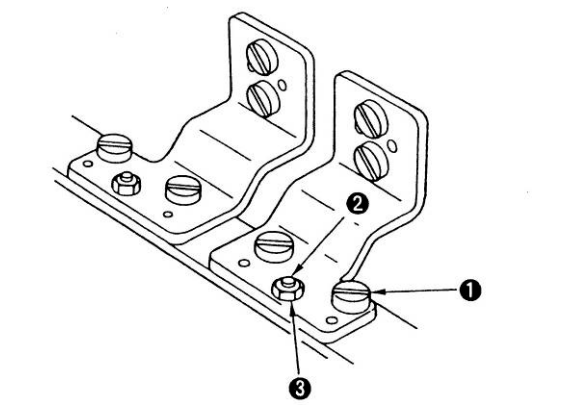


### 4. 压脚的角度/Inclination of the feeding frame

外压脚与平板平行之后，外压脚前方的压脚压力会不足，请把外压脚的前方调节成稍稍向下的角度。

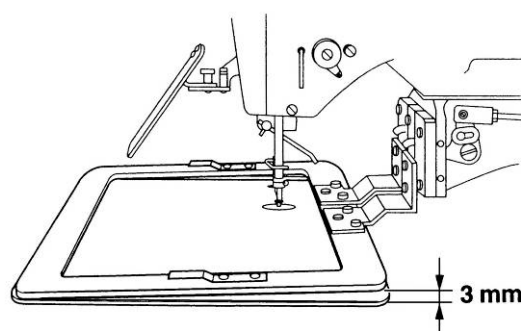
1) 拧松固定螺丝①和螺母③，顺时针转动调节螺丝②之后，外压脚前方下降。

2) 角度调节后，拧紧固定螺丝①和螺母③。



(注意) 外压脚倾斜得过大时，外压脚有可能上升不了。外压脚前端与针板面一致时，后端应高出针板面 3mm。

If the feeding frame is in parallel to the throat plate, the pressure of the front side of the feeding frame is likely to drop. Consequently, be sure to adjust the inclination of the feeding frame so that the front side of the feeding frame is slightly lower than its rear side.



- 1) Loosen screw and nut. Turning adjustment screw clockwise will lower the front side of the feeding frame.
- 2) After the adjustment of the degree of angle, tighten screw and nut.

**(Caution)If the feeding frame is excessively tilted, troubles may result such as the feeding frame fails to go up.**

**As reference of the adjustment, the rear end of the feeding frame should be approximately 3mm above the throat plate surface when the front end of the feeding frame meets the throat plate surface.**

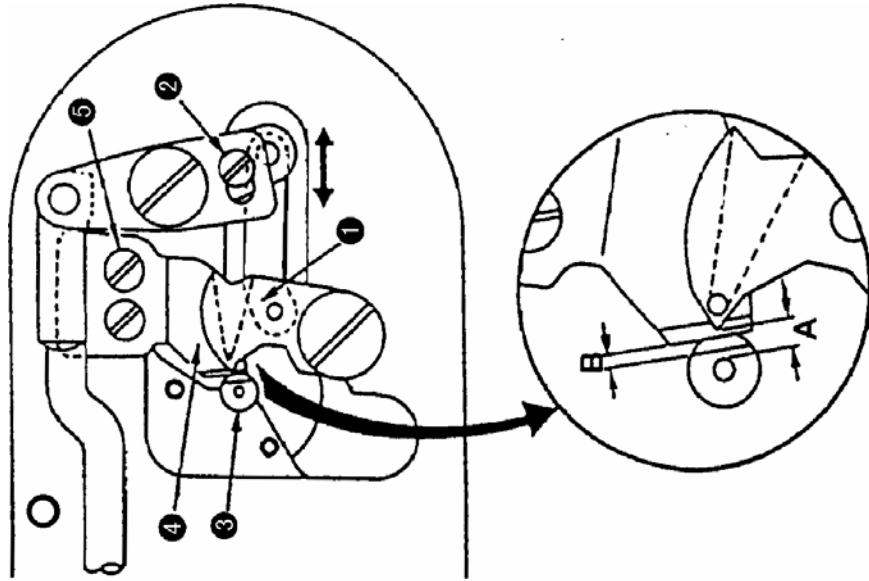
### 5. 动刀和固定刀 / Adjusting the moving knife and counter knife

- 1) 上停止时，拧松调节螺丝②，调节动刀①的勾线部分和针孔端的间隙 A。
- 2) 调节后，用手转动确认切线位置。
- 3) 拧松固定螺丝⑤，调节针孔导向器③和固定刀④之间的间隙 B。

调整地点 缝制分类	A	B
S	4.5mm	0.8mm
H	5.3mm	0.8mm

- 1) When the sewing machine stops in the upper stop position, loosen adjusting screw ② and adjust clearance A provided between the thread handing section of moving knife ① and the edge of needle eyelet.
- 2) After the adjustment, manually actuate the thread trimmer to check for proper positioning.
- 3) Loosen screw ⑤, and adjust clearance B provided between the needle hole guide ③ and the counter knife ④.

Section to be Sewing specification adjusted	A	B
S	4.5mm	0.8mm
H	5.3mm	0.8mm



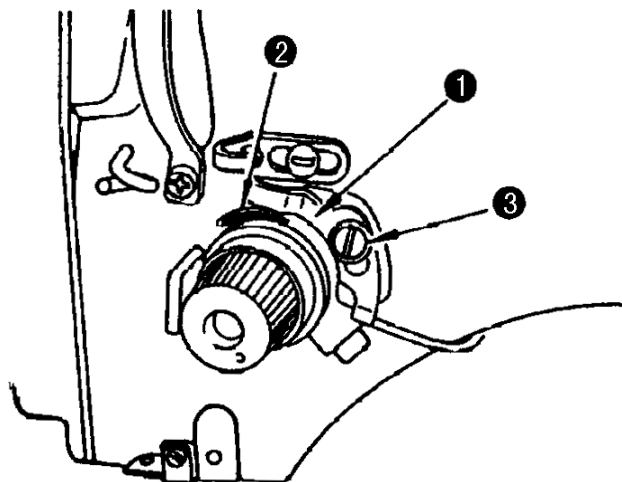
## 6. 断线检测板 / Thread breakage detector plate

- 1) 没有穿线时，把断线检测板①和挑线弹簧②调整成相接触（垂度为 0.5 mm）。
- 2) 改变了挑线弹簧②的行程后，请拧松螺丝③，再次调整断线检测板①。

（注意）断线检测板①除挑线弹簧②以外不能与其他金属部件相接触。

- 1) Adjust so that thread breakage detector plate ① is always in contact with thread take-up spring ② in the absence of needle thread. (Slack: approx. 0.5mm)
- 2) Whenever the stroke of thread take-up spring ② has been changed, be sure to readjust thread breakage detector plate ①. To make this adjustment, loosen screw ③.

**(Caution)** Adjust so that thread breakage detector plate ① does not touch any adjacent metallic parts other than thread take-up spring ②.



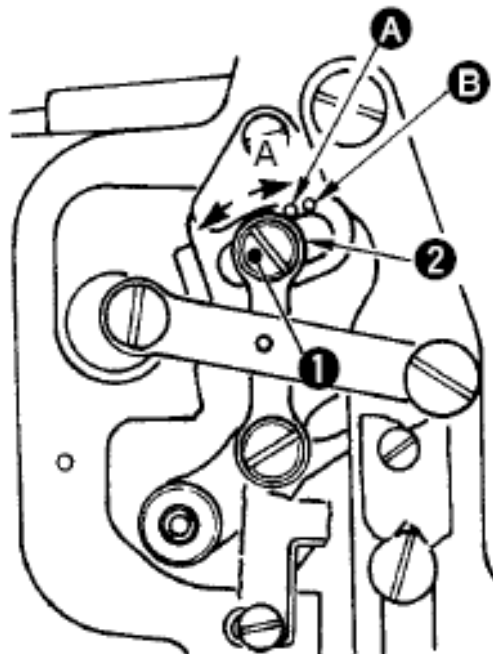
## 7. 中压脚的上下行程调节

### Adjusting the vertical stroke of the intermediate presser

- 1) 取下面罩。
- 2) 转动皮带轮，把针杆移动到下死点。
- 3) 拧松平头螺丝①，把平头螺丝①的位置向 A 方向移动，行程变大。
- 4) 刻点 A 与垫片②的外周右侧一致时行程为 4mm，与刻点 B 一致时行程为 7mm。  
(工厂出货时调节为 4mm。)

- 1) Remove face cover.
- 2) Turn handwheel to make the needle bar come down to its lowest point.
- 3) Loosen hinge screw ① and move it to the direction A to increase the stroke.
- 4) When marker dot A is aligned with the right side of the outer periphery of washer ②, the vertical stroke of the intermediate presser becomes 4 mm. And, when marker dot B is aligned with the right side of the outer periphery of the washer, it becomes 7 mm.

(The vertical stroke of the intermediate presser is factory-set to 4 mm at the time of delivery.)



## VII、保养方法

### Maintenance Method

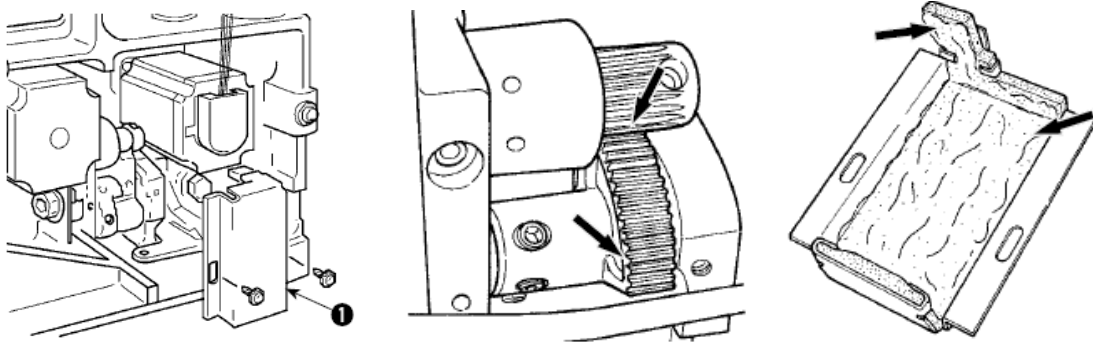
请定期（建议不超过 3 个月）向指定部位补充润滑脂。由于清扫缝纫机等原因造成润滑脂减少时，请立即加以补充。

Regularly add grease to the designated site (usually no more than three months). Reduced grease which is caused by cleaning sewing machines, please supplemented immediately.

#### 1、摆动齿轮部润滑脂补充/The wobble gear portion grease replenishing

翻开缝纫机，卸下润滑脂盒①。向摆动齿轮部和下轴齿轮齿面上涂抹润滑脂。然后再向润滑脂盒①内部的毛毡垫面上也涂抹上润滑脂。

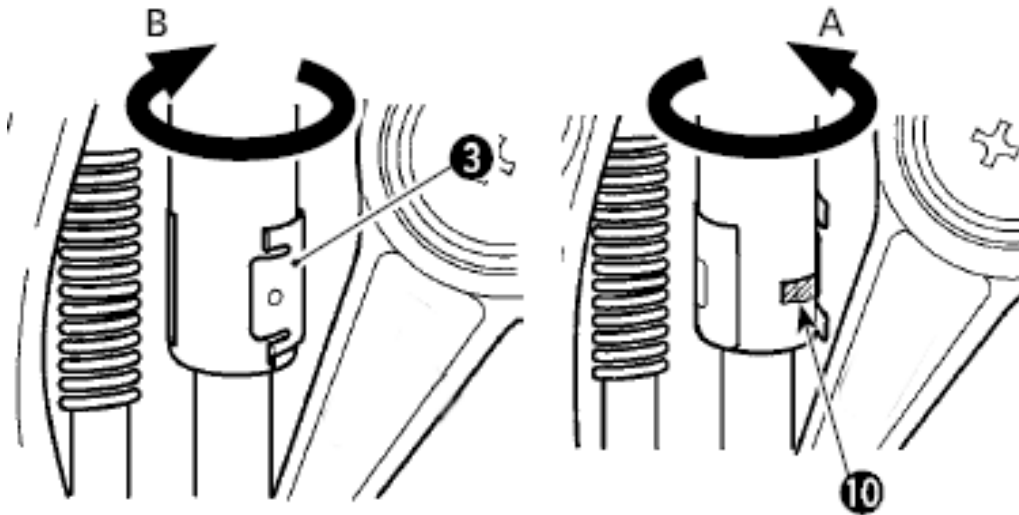
Open sewing machine, remove grease box①. Apply grease to the tooth surface of wobble gear and lower shaft gear. And also for the inner felt pad surface of grease box ①.



#### 2、针杆、压杆部润滑脂补充/Needle bar, pressure lever grease replenishing

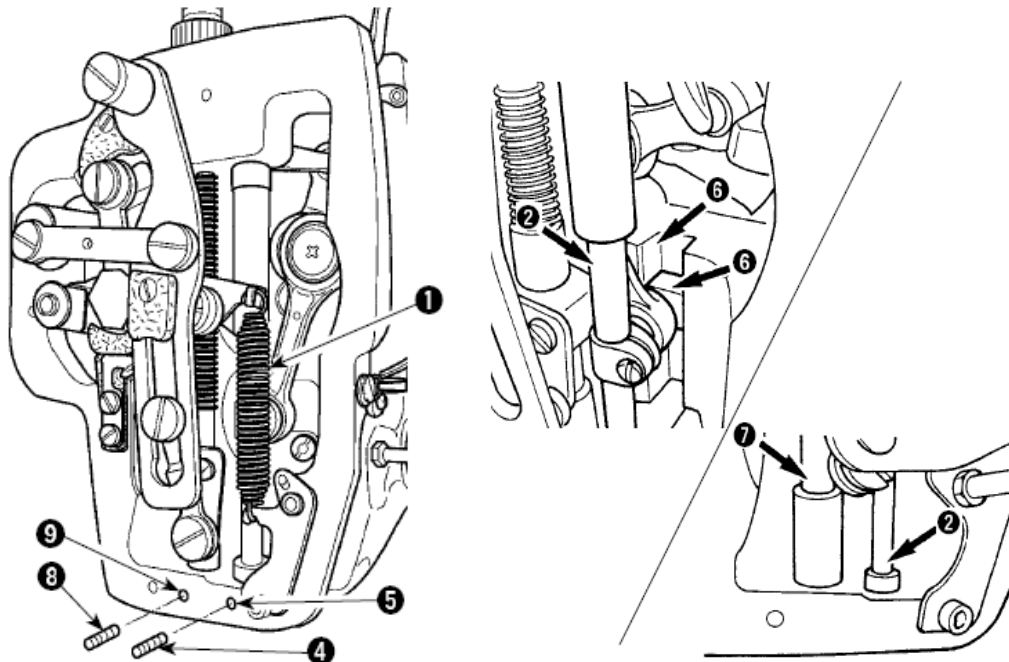
打开面板，拆下中压脚辅助弹簧 1。向针杆 2 四周涂抹润滑脂。然后请用手转动手轮让润滑脂涂满整个针杆四周。向箭头 A 方向转动针杆上轴套润滑脂护罩 3，从注入口充填润滑脂。充填完毕后，向箭头 B 方向转动针杆上金属部润滑脂护罩，返回到原来的位置。

Open the panel; remove the medium presser foot auxiliary spring 1. Apply grease to the needle bar 2. Then please turn the hand-wheel to grease all the needle bar. Roll the cover 3 on needle bar axis guide in the direction A, filling grease from the sprue. After the completion of filling, Roll the cover on needle bar axis guide in the direction B, returning to its original position.



卸下针杆下轴套润滑脂孔固定螺丝 4，向孔 5 里注入润滑脂，然后拧紧固定螺丝 4，让润滑脂充填到轴套内。向针杆滑块槽 6 也涂抹润滑脂。向压杆四周 7 上也涂抹润滑脂。卸下压杆轴套润滑脂孔固定螺丝 8，向孔 9 里注入润滑脂。然后拧紧固定螺丝 8，让润滑脂充分填到轴套内。

Unload screw 4 on needle bar lower axis guide, injected grease to hole 5, then tighten the screw 4, let the grease filling in the sleeve. Apply grease to the needle bar slip plate slot 6 and also the pressure lever 7; Unload screw 8, injected grease to hole 9. Then tighten the screw 8, let the grease full fill in the sleeve.

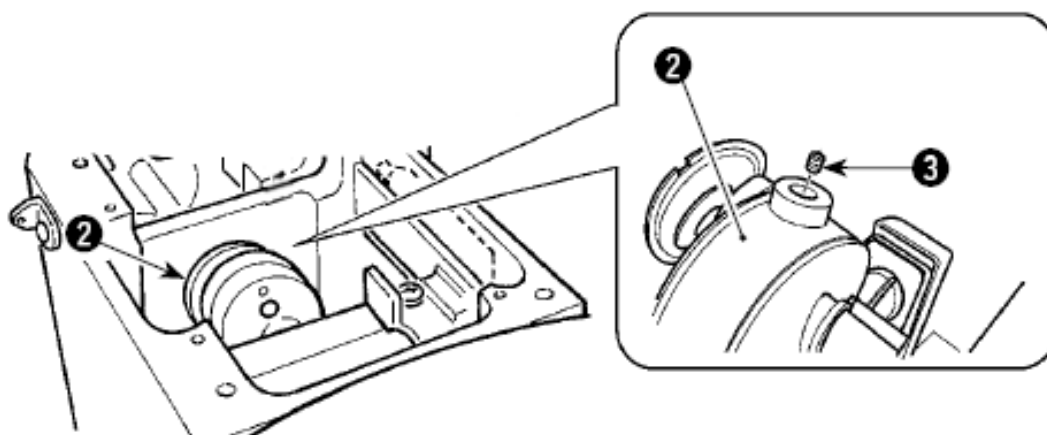


### 3、大连杆偏心凸轮部润滑脂补充

#### **Eccentric Cam of Connecting rod grease replenishing**

卸下大连杆 2 的润滑脂注入口固定螺丝 3。向注射器里充填润滑脂，并用注射器向大连杆 2 充填润滑脂。补充完润滑脂后，请把刚才取下的固定螺丝 3 牢固地固定好。可用此方式给上轴前端压脚同步连杆充填润滑脂。一边转动缝纫机的上轴，一边补充润滑脂的话，可以让润滑脂充分润滑。

Unload screw 3 on sprue of connecting rod 2. Fill grease to the syringe, and syringe to connecting rod 2. Then please tighten the screw 3. This method is also suitable for the synchronous connecting rod of arm shaft. Grease when rolling the sewing machine, you can make the grease sufficient lubrication.

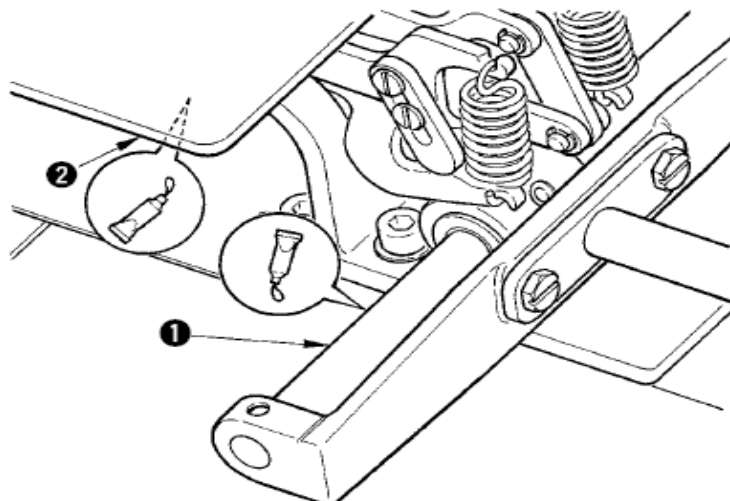


### 4、X 向导向轴轴承润滑脂补充

#### **X Axis Guide Bar Bearing grease replenishing**

向 X 向导向轴 1 以及压板 2 背面涂抹润滑脂。

Apply grease to the guide shaft 1 and the backside of platen 2 on the X axis.



## 5、中压脚提升部润滑脂补充

### Presser foot lifting parts grease replenishing

打开机头面板，请向毡垫部(3 处) 及其四周的平头螺丝、支点 1 ~ 7 和导向槽 8 里补充润滑脂。

Open head panel, add grease to the felt pad (3 part), the grub screws around, fulcrum 1 to 7 and the guide slot 8.

