

**MAQI**

**使 用 说 明 书**

**美 机 缝 纫 机**  
**MAQI SEWING MACHINE**

**OPERATION MANUAL**

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## — 目 录 CONTENTS —

<b>操作前注意事项 PRECAUTIONS BEFORE STARTING OPERATION</b>	<b>1</b>
<b>谨慎使用 CAUTIONS ON USE</b>	
1. 加油 (1) Oiling(1)	3
2. 加油 (2) Oiling(2)	3
3. 加油状况 Oiling condition	3
4. 旋梭油量调节 Adjustment of oiling to rotating hook	3
5. 谨慎操作 Cautions on operation	3
<b>操作 OPERATION</b>	
1. 安装机针 Installation of needles	4
2. 锁心绕线 Winding of bobbin thread	4
3. 选择用线 Selection of thread	5
4. 机针引线 Threading of needle threads	5
5. 调节针距和倒缝线迹 Adjustment of feed(stitch) length and stitch reversing(touch-back)	6
6. 安装锁心 Setting of bobbin	6
7. 引底线 Threading of bobbin threads	7
8. 调节底线张力 Tension adjustment of bobbin threads	7
9. 正常的底面线张力 Balance of thread tension	7
10. 调节面线张力 Needle thread tension	7
11. 调节压脚压力 Adjustment of presser foot pressure	8
12. 旋梭与几针的同步调节 Timing between rotating hook motion and needle motion	8
13. 调节送布牙高度 Adjustment of feed dog height	9
14. 旋梭与挑线杆位置调整 Relationship between rotating hook motion and take-up lever motion	10
15. 旋梭与拨线勾位置调整 Relationship between hook motion and opener motion	10
16. 几针与送布牙同步调整 Relationshio between needle motion and feed dog motion	10
17. 安全离合器安装 Safety clutch device	11
18. 上送料调整 Upper feed adjustment (nedle side)	12
19. 内、外压脚垂直行程调整 Outside presser foot and inside presser vertical stroke adjustment	13
20. 倒顺缝针距调节 Adjustment of forward/backward stitch length	13
<b>规格 SPECIFICATIONS</b>	<b>14</b>
<b>零件样本 PARTS CATALOG</b>	
1. 机壳部件 Arm bed its accessories	15
2. 夹线器调节部件 Thread tension regulator mechanism	17
3. 上轴部件 Upper shaft mechanism	20
4. 压脚部件 Presser foot mechanism	22
5. 针杆挑线部件 Needle bar & thread take-up lever mechanism	25
6. 针距调节部件 Stitch regulator mechanism	28
7. 下轴、送布轴部件 Lower shaft & feed rock shaft mechanism	30
8. 旋梭部件 Hook saddle mechanism	33
9. 润滑部件 Oil lubrication mechanism	35
10. 附件 Accessories	37
<b>特殊针位零件表 GAUGE PARTS LIAT</b>	<b>39</b>

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## 操作前注意事项

### 1. 安全须知

- 1) 打开电源后，切勿将手放在机针下和皮带轮附近。
- 2) 机器停止使用或操作者离开时，将电源关掉。
- 3) 当倾斜机头、安装三角带或重新调试安装机器时，必须切断电源。.
- 4) 机器运转时避免手指、头发、棒状物等靠近三角带、绕线轮和电机，以免受伤。
- 5) 机器运转时，不要将手指放在挑线杆防护罩内以及机针、皮带轮附近。
- 6) 如果安装了皮带罩、压脚防护罩、透明有机玻璃罩，当在这些防护装置不完善时不要开机。

### 2. 开机须知

- 1) 油盘内未加满油时，不得开机。
- 2) 若机器是通过油壶加油润滑，操作前须加油充分润滑。
- 3) 启动新机器时，须先接通电源，检查皮带轮的旋转方向。（观测者面对皮带轮，皮带轮应为逆时针方向旋转）
- 4) 确认电机的额定电压和相位。

### 3. 操作条件

- 1) 不要在高于35°C或低于5°C时使用，否则会造成机器损坏。
- 2) 避免在肮脏的环境中使用机器。
- 3) 避免在电气噪音过大的地方使用机器。

## PRECAUTIONS BEFORE STARTING OPERATION

### 1. Safety precautions

- 1) When turning the power on, keep your hands and fingers away from the area around/under the needle and the area around the pulley.
- 2) power must be turned off when the machine is not used, or when the operalor leaves his/her seat.
- 3) The power must be turned off before tilting the machine head, installing or removing the "V" belt. adjusting the machine, or when replacing.
- 4) Avoid placing fingers, hairs, bars etc, near the pulley, "v" belt, bobbin winder pulley, or motor when the machine is operation. Injury could result.
- 5) Do not insert fingers into the thread take-up cover, under/round the needle, or pulley when the machine is in operation.
- 6) Of a belt cover, finger guard, and/or eye guard are installed, do not operate the machine without these safety devices.

### 2. Precaution before Starting Operation

- 1) If the machine's oil pan has an oil sump, never operate the machine before filling it.
- 2) If the machine is lubricated by a drop oiler, never operate the machine before lubricating.
- 3) When a new sewing machine is first turned on, verify the rotational direction of the pulley with

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the power on.(the pulley should rotate counterclockwise when viewed from the pulley.)

- 4) Verify the voltage and (single or three) phase with those given on the motor nameplate.

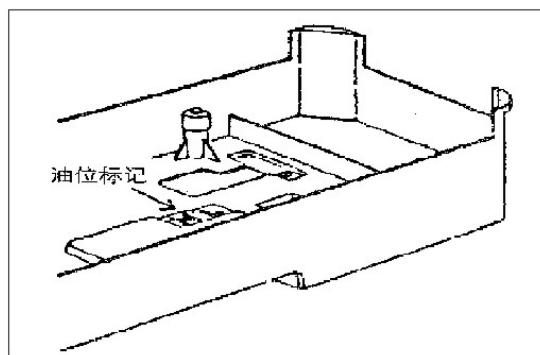
### **3. Precaution for Operating Conditions**

- 1) Avoid using the machine at abnormally high temperature(35°C or higher) or low temperature (5 °C or lower).Otherwise, machine failure may result.
- 2) Avoid using the machine in dusty conditions.
- 3) Avoid using the machine in areas where too much electrical noise, resulted from the high-frequency welder and others, is generated..

## 谨慎使用 CAUTIONS ON USE

### 1 加油 (1)

往油盘中加油到“H”位置。在使用中定期检查油位，如果油量在“L”位置以下，请补加到“H”位置。  
请使用白色缝纫机油。

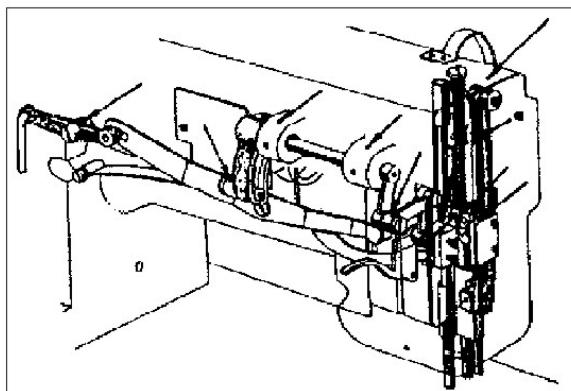


#### Oiling(1)

Fill the oil reservoir with oil up to "H"mark.  
Oil level should be periodically checked. If oil level is found below "L"level replenish oil to "H"level. For oil, Use white spindle oil.

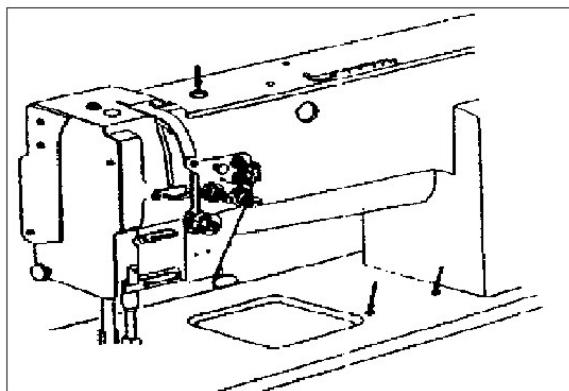
### 2. 加油 (2)

新的缝纫机或长期不使用的缝纫机，在使用前要在下图箭头所指位置适量加油。



#### Oiling(2)

When a new sewing machine is used for the first time ,or sewing machine left out of use for considerably long time is used again, replenish a suitable amount of oil to the portions indicated by arrow in the below figure

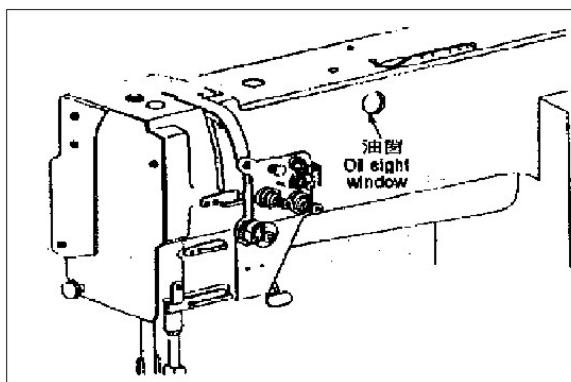


### 3. 加油状况

在操作过程中要通过油窗检查油量的供应情况。

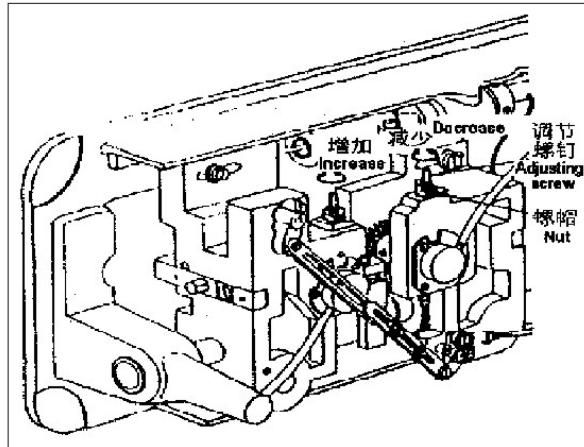
#### Oiling condition

See dripping of oil through the oil sight hole to check oiling condition during operation



### 4. 旋梭油量调节

#### Adjustment of oiling to rotating hook

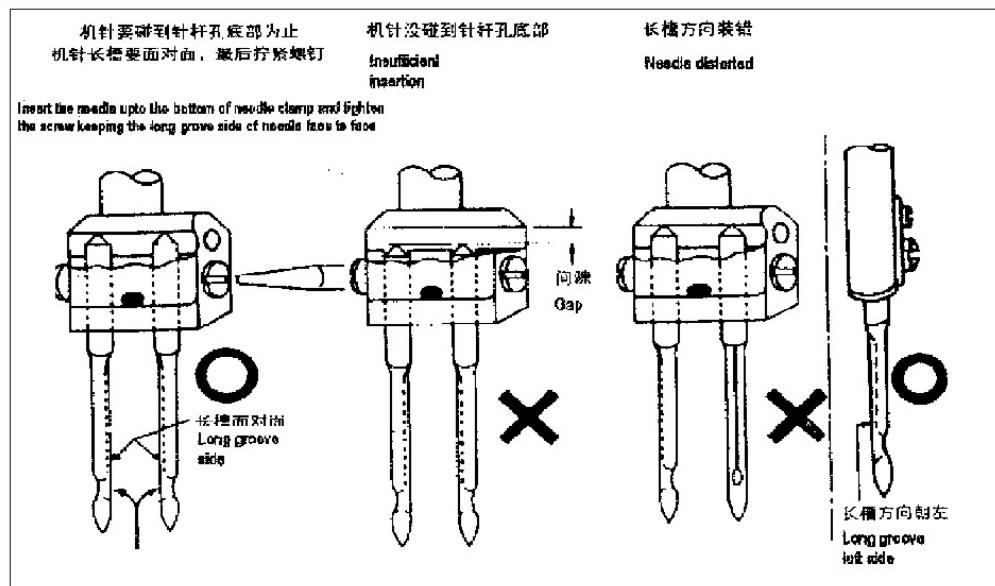


# 操作 OPERATION

## 1. 安装机针 注意: 安装机针前务必切断电源

### Installation of needles

Note: Before installing the needles, be sure to turn off the power.



## 2. 梭心绕线

注意: 空运转时一定要抬起压脚

调节内容:

绕线张力      绕涤纶、尼龙线时，要减少绕线压力

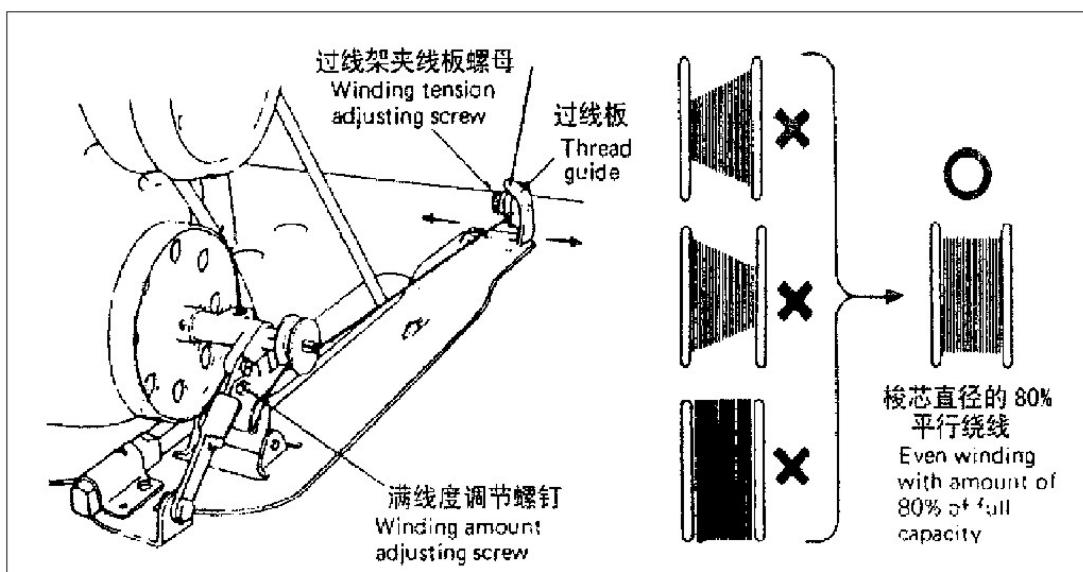
单边绕线      过线架往绕线量少的方向移动

绕线量      旋松满线度调节螺钉可增加绕线量，反之则减少绕线量。

### Winding of bobbin thread

Note: When bobbin thread wound, keep the presser foot lifted.

Adjustment:



**Tension of wound thread**

Slack winding is recommended for polyester thread and nylon thread.

**Conically wound thread**

Move the thread guide toward smaller diameter of wound thread layer.

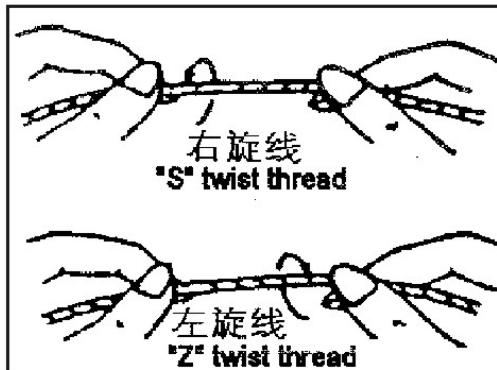
### 3. 选择用线

从正面看，推荐左面机针用右旋线，右面机针用左旋线。当对面线的使用无具体要求时，左右机针均可使用右旋线。底线则左、右旋线均可使用。

#### Selection of thread

It is recommended to use "S" twist thread in the left needle (viewed from front), and "Z" twist thread in the right needle. When discriminate use of needle threads is impossible, use "Z" twist thread in both the needles.

For bobbin thread, "S" twist thread as well as "Z" twist thread can be used.



### 4. 机针引线

#### 1) 让每根面线穿过线架孔 A

注意：当使用细而滑的面线（如涤纶线）时，让面线穿过线架孔 B

#### 2) 挑线杆上升到最高位置，按图所示，顺序穿线。

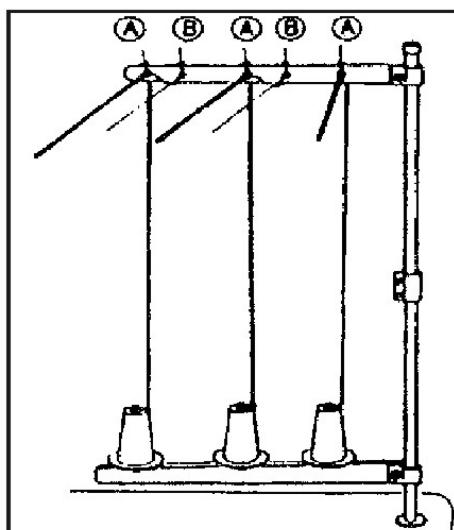
注意：按下松线按钮，上部面线可轻松抽出。

#### Threading of needle threads

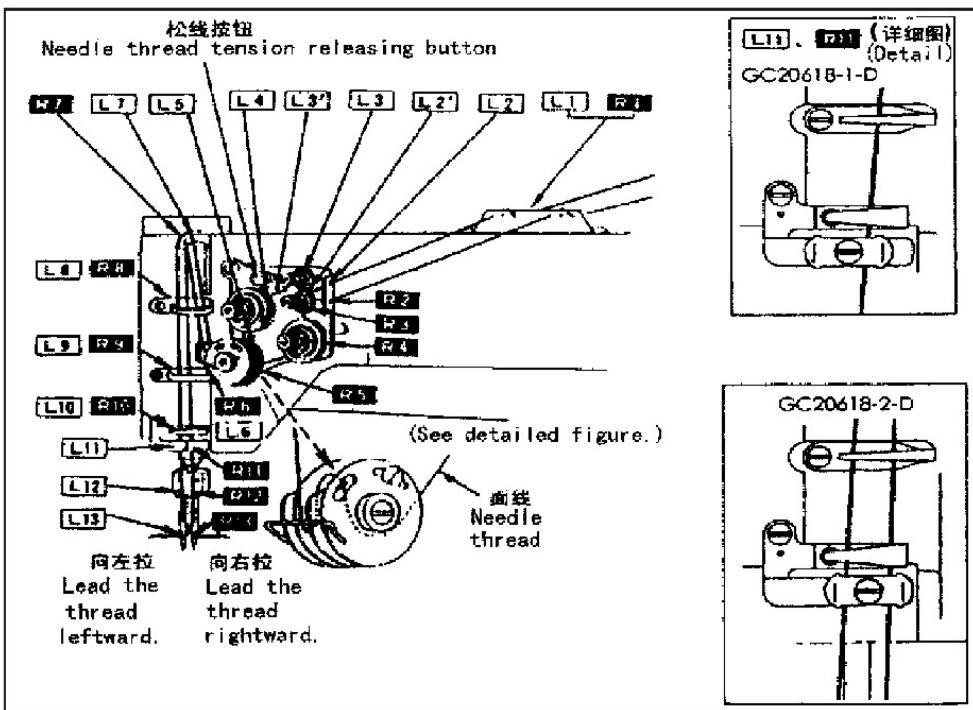
Pass each needle thread through thread guide A

Note: When thin slippery thread (polyester Thread or filament thread, for example) is used pass the thread through thread guide B as well.

With the take-up lever located at the upper most position, pass each needle thread in the order shown in the following figure



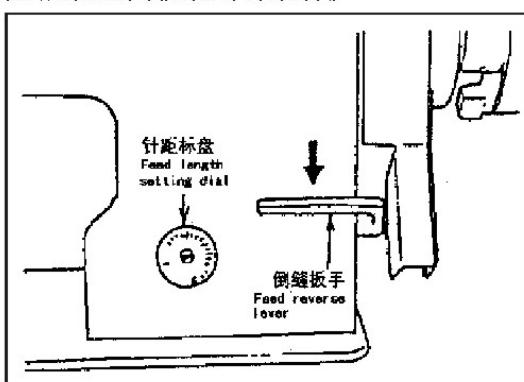
Note: Pressing the upper thread loosening button shown in the figure below opens the saucer of the upper thread tension adjuster, and the upper thread can easily pulled out.



## 5. 调整针距和倒缝线迹

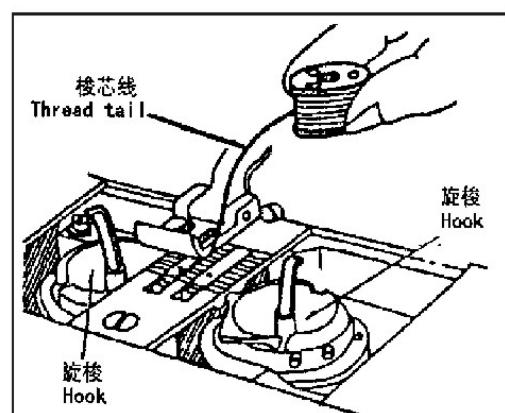
注：压下倒缝操纵杆，转动针距标盘，调节针距倒缝开关：压下开关则倒缝，释放则顺缝  
**Adjustment of feed (stitch) length and stitch reversing (touch back)**

Note: To make feed (stitch) length smaller, depress the feed reverse lever and set the feed length setting dial to a desired position  
 Touch-back button...Direction of stitching can be reversed by depressing this button.  
 Stitching goes on in reversed direction while the button is held down ,and returns to forward direction when the button is released



## 6. 棱心

- 1) 从棱心拉出底线约 5cm.
  - 2) 绕线方向右旋，将棱心放入旋梭。
- Setting of bobbin**
- a) pulling out 5.cm thread tail from the bobbin.
  - b) Hold the bobbin so that the bobbin thread is would in right direction and put it into the hook.



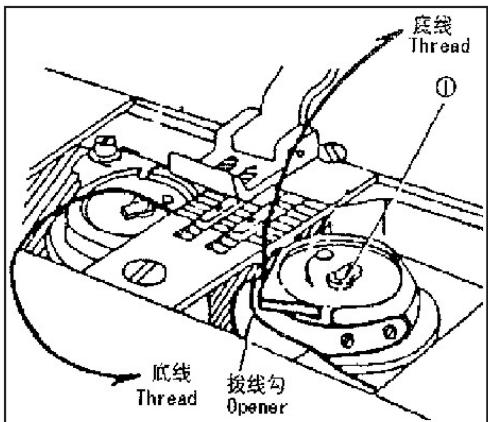
## 7. 引底线

- 1) 按下梭心压板，把底线从底板面上抽出

### Threading of bobbin threads

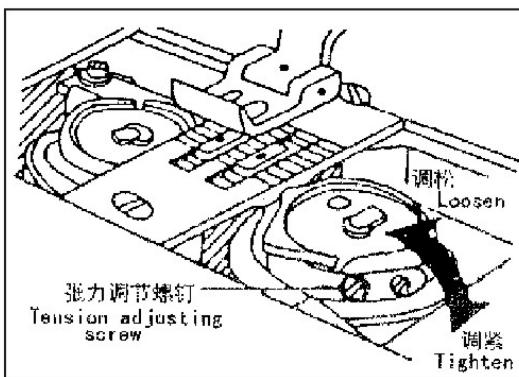
- a) put the hook into the bobbin case and press down the latch ①.
- b) hand, rotate the hand-wheel one turn by right hand.

The thread end should be left on the bed



## 8. 调节底线张力

### Tension adjustment of bobbin threads



## 10. 调对面线张力

- 根据底线张力调节对面线张力
- 转动对面线调节螺母可调节对面线张力
- 对特殊的缝料和缝线，可通过改变夹线弹簧来调节对面线张力

### Needle thread tension

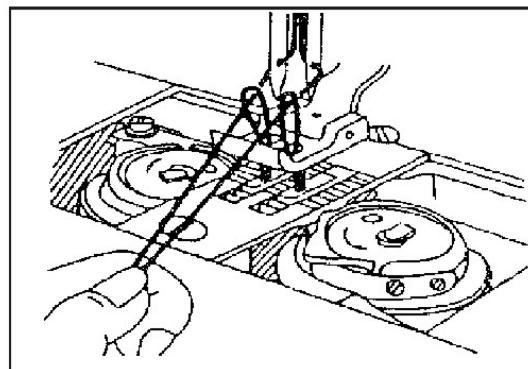
- Needle thread tension should be adjusted in reference to bobbin thread tension.
- To adjust needle thread tension turn each tension adjusting nut.
- Needle thread tension can be also adjusted for special fabric and thread by changing intensity and movable range of slack thread adjusting spring.

- 2) 左手拉住两根面线，用右手慢慢转一圈皮带轮，如图所示，面线拉起把底线也引出，然后拉齐，从压脚下面拉过，放到对面。

### While holding the two needle Threads by left

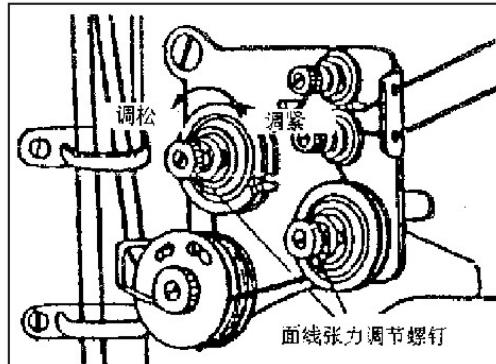
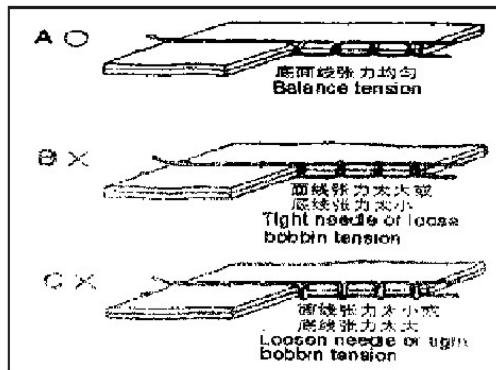
- a) hand, rotate the hand-wheel one turn by right hand.

By pulling up the needle threads, as shown in the figure, the bobbin threads will be lifted. Each combination of bobbin thread and needle thread should be aligned and led backward



## 9. 正常的底线张力

### Balance of thread tension



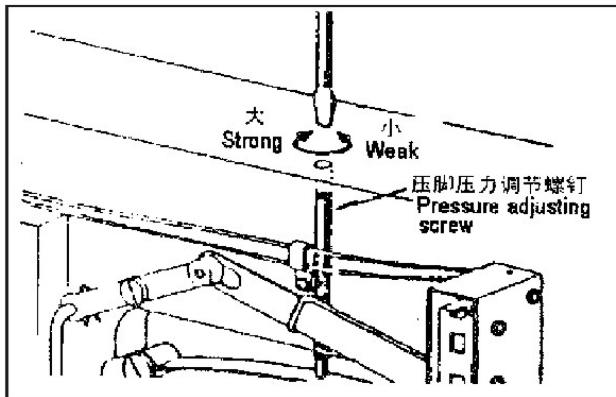
## 11. 调节压脚压力

转动压脚压力调节螺丝，

可调节压脚压力

### Adjustment of presser foot pressure

Pressure to fabric(s) can be adjusted by turning the pressure adjusting screw.



## 12. 旋梭与机针的同步调节

1) 针距设定为"6"

2) 当机针从最低位置上升2.4 mm时，

旋梭与机针的相互关系如下：

- 旋梭勾线尖高于机针线孔最下端2.3mm
- 旋梭勾线尖于机针中心线一致
- 旋梭勾线尖与机针缺口底部的间隙  
为0.05mm

### Timing between rotating hook motion and needle motion

(1) Set feed length (stitch length) to "6" on the feed setting dial.

(2) When needle is lifted 2.4mm from the lower dead point, as shown in Figure, the following positional relationship should be maintained

#### 注：旋梭定位要点

1) 机针停在位置"DOWN"时，左右旋梭小齿轮的定位螺丝一只在前，一只在后，定位标记如图所示。

2) 拧紧定位螺丝，做标记“S”

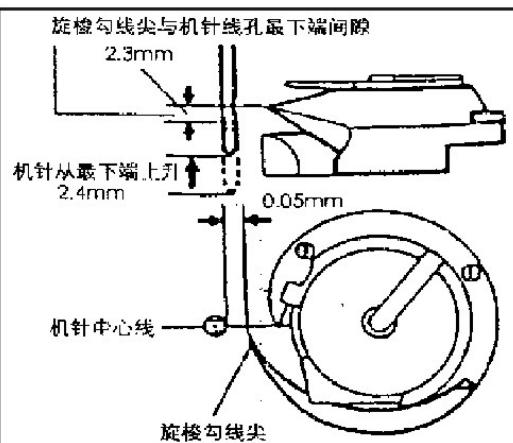
3) 旋梭大概位置：

当机针在位置 "DOWN" 时，旋梭的 "C" 螺丝靠近机针。

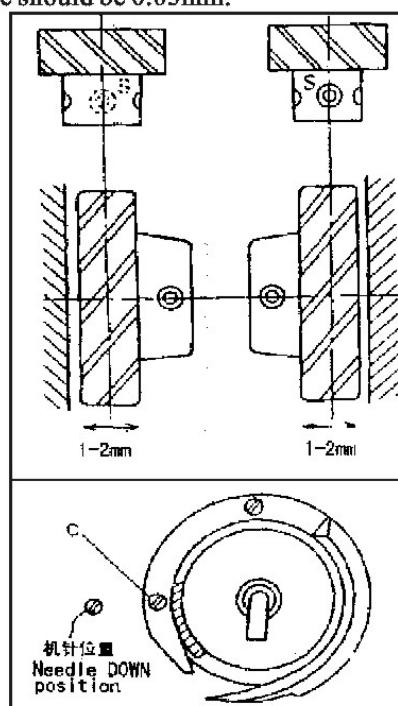
最后在调整机针与旋梭的相互关系时，要先松开旋梭大齿轮的定位螺钉，旋梭台组件可在下轴上左右移动 1-2mm。

#### Positioning of hook point

(1) When the needle is at DOWN position, the smaller



- The upper edge of needle eye should be 2.3mm below the hook point.
- The hook point should be located at the center of needle axis.
- Gap between the hook point and the side face of needle should be 0.05mm.



- Crossed helical gears on the right side and left side should be engaged with the large wheel so that the "S" screw of the former gear comes on the front side, and that of the latter gear on the reverse side.
- (2) Tighten each "S" screw, where is punched for set screw, on the hook shaft.
- (3) Approximate position of hook "C" screw of hook
- should be found close to the needle when the needle is at DOWN position.
- To finely adjust timing between the needle motion and hook motion, loosen the set screw of larger gear wheel and move the gear wheel in its axial direction within a range from 1mm to 2mm

### 13. 调节送布牙高度

送布牙的高度和压脚压力应根据下列情况作相应调整:

- 如送布牙太高和压脚压力太大, 将会损坏缝料。
- 如送布牙太低和压脚压力太小, 针距不能保证。
- 机针在最高位置时测量送布牙的高度

薄料..... 送布牙高度 0.8mm

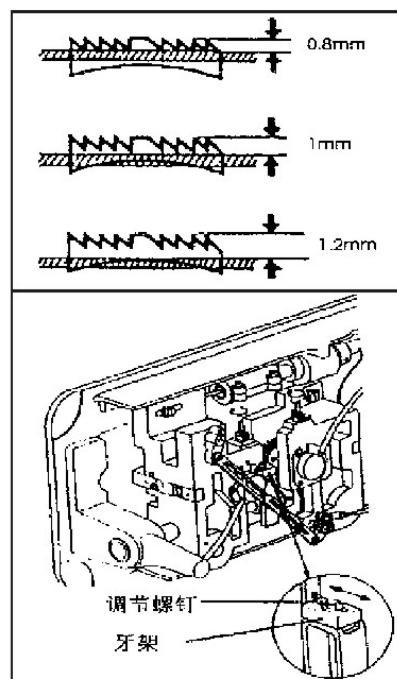
普通..... 送布牙高度 1mm

厚料..... 送布牙高度 1.2mm

调节顺序:

- (1) 把机器放倒。
- (2) 转动皮带轮, 在送布牙最高时停止。
- (3) 松开牙架螺钉。
- (4) 按图示箭头方向调节送布牙高度。
- (5) 调节结束后, 拧紧牙架螺钉。

缝纫机出厂时送布牙高度为1.2mm



### Adjustment of feed dog height

Height of feed dog and pressure of presser foot should be adjusted for individual fabric(s) with the following cautions:

Fabric will be damaged if the feed dog extends too high, or pressure of presser foot is too large.

Even stitch length cannot be assured if the feed dog is too low or pressure of presser foot is too small.

Feed dog height should be measured at the point where the needle is at the top position.

For light fabrics ..... Approx.0.8mm from throat plate

For usual fabrics ..... Approx.1.0mm from throat plate

For heavy fabrics ..... Approx.1.2mm from throat plate

### Adjustment procedure

- a) Lean the machine head backward.
  - b) Turn the hand wheel by hand and stop when the feed dog rises to the maximum height.
  - c) Loosen the feed bar set screw.
  - d) Vertically move the feed bar (in the direction indicated by arrow in the figure) to adjust it to adequate height.
  - e) After the adjustment, tighten the feed bar set screw.
- The feed dog height is factory-adjusted to 1.2mm

## 14. 旋梭与挑线杆位置调整

当同步带卸下后重新安装时，按下列顺序进行：

- (1) 转动主动轮，在机针孔与针板平时停止。

### Relationship between rotating hook motion and take-up lever motion

When the timing belt (toothed belt) was removed for its replacement, for example, the relationship between rotating hook motion and take-up lever motion should be adjusted as follows:

- a) Turn the balance wheel and stop in the needle

## 15. 旋梭与拨线勾位置调整

- (1) 转动主动轮，在拨线勾离针板位置最远时停止。

- (2) 保证梭心套 A 与拨线勾间隙为 0.2mm

- (3) 如果间隙过大或过小，松开螺钉 B  
进行调整。

### Relationship between hook motion

### and opener motion

- a) Turn the balance wheel by hand and stop when the opener holder is located most remotely from the throat plate.
- b) Make sure gap between the bobbin case holder A and the opener is approximately 0.2mm.
- c) If the gap is too large or small, loosen the opener holder set screw B and adjust position of the opener.

## 16. 机针与送布牙位置调整

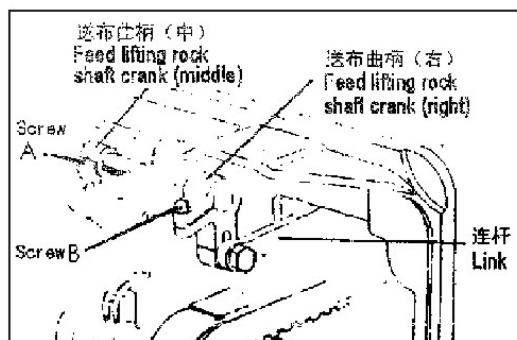
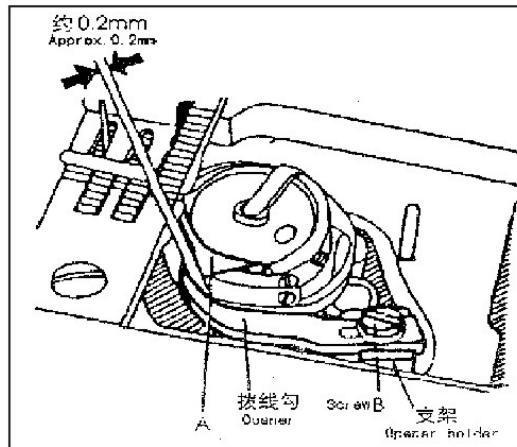
- 1) 把针距设定为“0”
- 2) 放倒机器。
- 3) 松开送布曲柄螺钉A、B。
- 4) 针杆放到最低位置。
- 5) 调整内、外压杆间隙到9mm，  
临时固定送布曲柄螺钉A、B。
- 6) 按图示确认送布曲柄（右）  
与连杆间角度（90度）。
- 7) 如果角度不对，打开后盖板，松开螺钉C，  
按图示箭头方向调整到90度。
- 8) 调整全部结束后，拧紧螺钉A、B、C。

注：在调整的同时要确保机针在送布牙针孔的中心。  
**Relationship between needle motion and feed dog motion**

- (2) 放倒机器，转动下轴，当牙齿与针板平时，  
装上同步带。

plate and feed dog lever

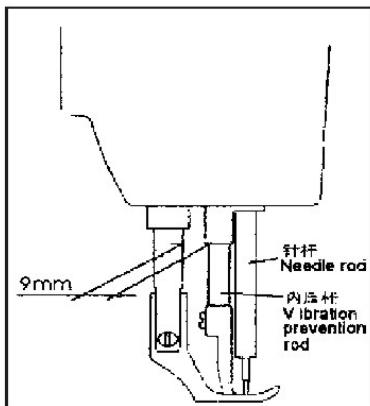
- b) Lean the machine head backward and make sure the arrow (timing mark) put on the timing belt is in line with the black line on the boss of lower shaft bearing.



- a) Set feed length to “0” on the feed setting dial
- b) Lean the machine head backward.
- c) Loosen the feed lifting rock shaft crank set screws A and B
- d) Set the needle at the lowest position.
- e) Adjust the distance between presser rod and vibration prevention rod to 9mm and temporarily tighten the feed lifting rock shaft crank set screws A and B
- f) Check that the right feed lifting rock shaft crank is connected with the link at right angle, as shown in Figure.
- g) If the connection is not at right angle, remove the back cover, loosen screw C and move the right link to connect the right feed lifting rock shaft with the link at right angle.

- h) After the completion of adjustment, fully tighten the screws A, B and C.

At this time make certain that needle can enter the feed dog needle hole at the center of the hole.



## 17. 安全离合器安装

安全离合器是为了防止缝纫机在不正常工作下旋梭和同步带受到损坏。

### (1) 安全离合器的功能

- 当安全离合器工作时,同步带轮脱开,上轴空转,下轴停止转动,缝纫机不工作。
- 清除旋梭内卡进的多余缝线。
- 用手转动同步带轮轴,检查下轴是否能轻滑旋转,将安全离合器的位置调整到如图所示。

### (2) 离合器的复位

- 左手按下复位按钮,右手按图示方向转动主动轮。
- 连杆勾住同步带轮轴时,用力转动主动轮。
- 松开复位按钮。
- 如图所示,安全离合器复位。

### (3) 离合器工作力矩设定

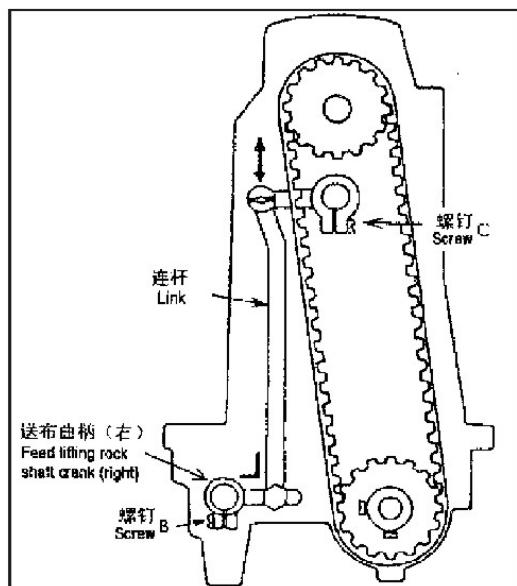
- 当偏心销的标记点最靠近下轴中心时,力矩最小。当标记点向外旋转时,力矩增加。
- 调节力矩时,向外移动同步带,松开紧定螺钉,旋转偏心销进行调节。
- 力矩调节好以后,拧紧紧定螺钉。

#### **Safety clutch device:**

Safety clutch device is installed to prevent the hook and cog belt from damage in case the thread is caught into the hook when the machine is loaded abnormally during operation.

### (1) Function of safety clutch.

- When the safety clutch acts, the cog belt pulley will be
- After the adjustment, make sure to fasten the set screw.



unloaded. then the rotation of book shaft will stop.

The arm shaft only will rotate. Stop the operation of machine.

- Clean the thread thoroughly which is caught into the hook.
- Turn the cog belt hub by hand, and check whether the hook. Shaft rotates lightly and properly, place the clutch device as follows.

rest

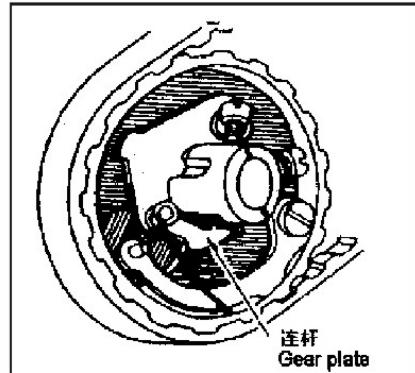
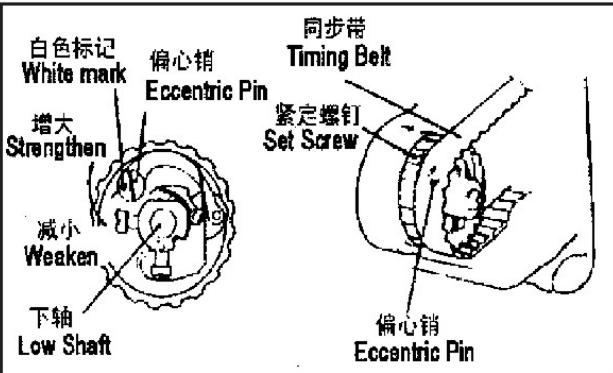
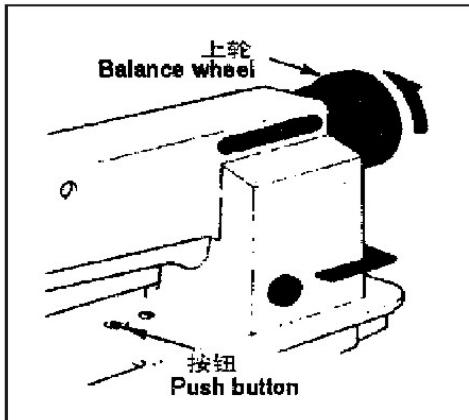
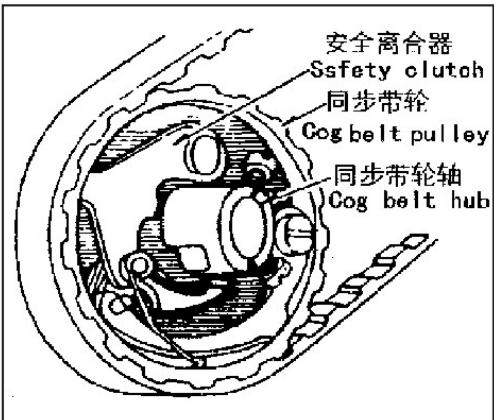
### (2) How to rest the safety clutch.

- While pressing down the rest button on the opposite side of bed by left hand, turn the balance wheel slowly by right hand away from you as shown in the figure.
- The balance wheel will stop by the gear plate, but turn the balance wheel more firmly.
- Release the push button.

### (3) Force applied to the safety clutch.

- The force applied to the safety clutch is the smallest when the white mark of the eccentric pin faces the center of the lower shaft. The force proportionally increases as the white mark faces the outside.
- To adjust the force slide the timing belt, loosen the set screw, and turn the eccentric pin.

- After the adjustment, make sure to fasten the set screw.



## 18. 上送布长度调整

根据缝料有不均匀的送布情况发生时，  
可通过调节送布曲柄（右）与连杆的  
位置来调节送布情况。

调节方法：

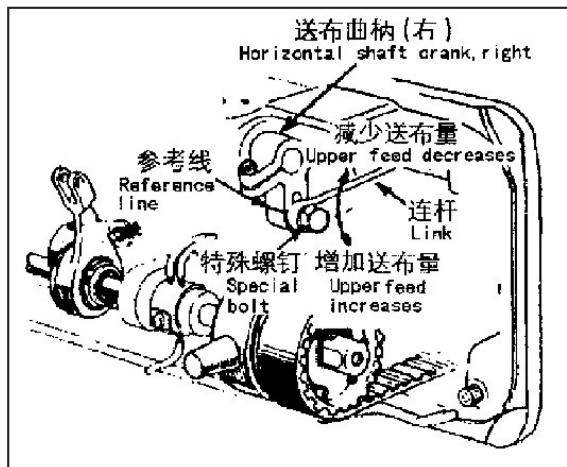
- 1) 松开特殊螺钉。
- 2) 上移特殊螺钉减少送布量。
- 3) 下移特殊螺钉增加送布量。理论上讲，特  
殊螺钉在参考刻线处时，上下送布量相等。
- 4) 调整结束后要坚固特殊螺钉

### Upper feed adjustment

(Needle side)

If the uneven feeding occurs according to the fabric,  
Adjust the long hole of the horizontal feed shaft crank  
(right) to adjust the upper feed length. (How to adjust)

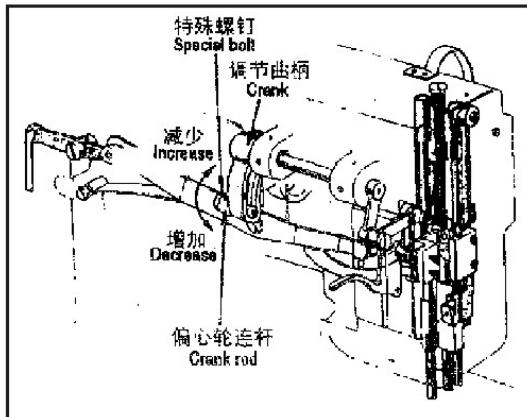
- a) Loosen the special bolt.
- b) Move the special bolt upward to decrease upper feed.
- c) Move the special bolt downward to increase the upper feed. The upper feed and the lower feed  
theoretically becomes equal at the reference line on the horizontal feed shaft crank.
- d) Securely tighten the special bolt after adjustment.



## 19. 内、外压脚垂直行程调整

当缝料的厚度和弹性有较大变化时，需对压脚的垂直行程（移动范围）进行调整，调整如下：

- 1) 松开特殊螺钉
  - 2) 当偏心轮连杆向下移动时，压脚垂直行程增加。
  - 3) 当偏心轮连杆向上移动时，压脚垂直行程减小。
  - 4) 调整结束后，紧固特殊螺钉。
- 压脚垂直行程调节范围为：2-6mm



### Outside presser foot and inside presser vertical stroke adjustment

When fabric with large elasticity is sewn, or when thickness of fabric changes, the vertical stroke (movable range) of the presser feet should be adjusted as follows:

#### Adjustment

- a) Loosen the special bolt.
  - b) The vertical strokes of the presser feet become maximum when the crank rod is moved downward set
  - c) The vertical strokes becomes minimum when the nut
  - d) After the adjustment, fully tighten the special bolt.
- The vertical strokes of the presser feet can be adjusted within a range from 6mm to 2mm.**

## 20. 调节倒顺缝针距误差

旋转倒缝连杆与倒缝操纵曲柄（下）相连的偏心销，可调节倒顺缝针距误差。顺时针旋转增加顺缝针距，逆时针旋转增加倒缝针距。

#### Adjustment

Screwing the pin that connects the link of back-sewing with the crank of back-sewing (down) can adjust the tolerance of between the stitches. Screwing the pin in clockwise can increase the stitch of forward sewing, otherwise, the stitch of back-sewing will be increased.

## 规格 SPECIFICATIONS

型号 Model		4400	4420
规格 Specifications			
针数 Number		单针 Single-needle	双针 Double-needle
用途 Application	厚料 Heavy material		
最高缝速 Max.sewing speed	2000rpm		
针距长度 Stitch length	0~9mm		
挑线杆行程 Thread take-up lever stroke	74.5mm		
针杆行程 Needle-bar stroke	36mm		
压脚提升高度 Presser-foot stroke	膝控 16mm 16(mm)by Leg 手动 8mm 8(mm)by hand		
内外压脚交互量 Vertical stroke of upper feed	2-6mm		
使用机针 Needle No.	DP X17 ( 标准 #23 )		
旋梭 Hook	全回转自动加油水平旋梭 ( 2 倍旋梭 ) (Horizontal full-rotating) Large		
挑线杆 Thread take-up lever	滑杆式 Slide lever		
针距调节 Stitch adjusting system	标盘式 Dial		
供油方式 Lubrication system	自动润滑 Automatic lubrication		
电机 Motor	离合器马达 370W Clutch motor 370W		
二针间距 Needle gauge	标准 Standard	6.4mm	
	特殊 Special	3.2    4    4.8    8    9.5    12.7    16    19    25.4mm	