

# *NC553 CYLINDER BED COMPOUND WALKING FOOT*



## **INSTRUCTION MANUAL**

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## 2. Lubrication 注油

Before starting the machine 機台開始啟用前

- 1) Prior to operation be sure to properly lubricate the points marked with the arrows.

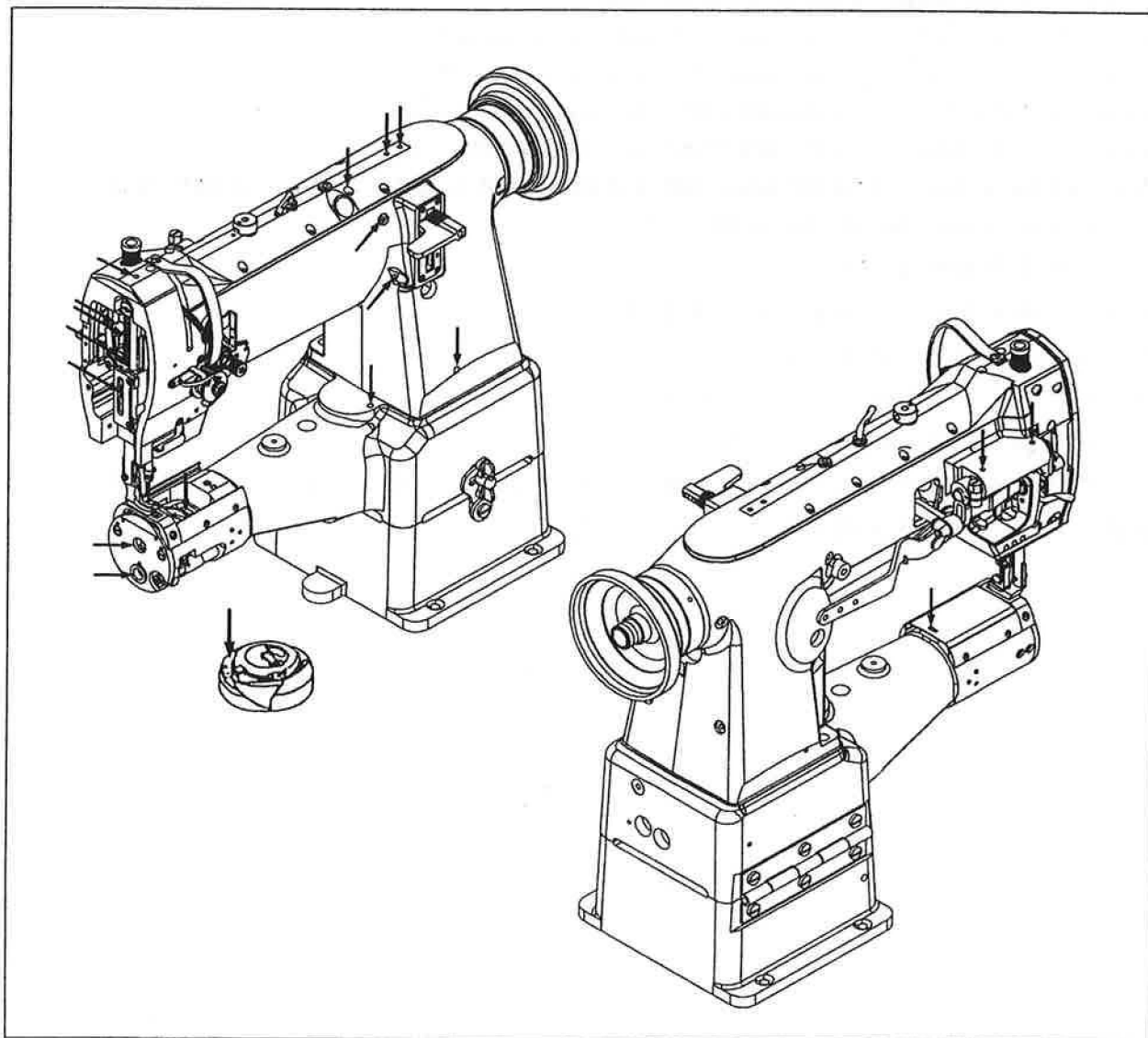
When oiling all sections requiring lubrication, after installation of the machine has been completed, wait for a while (approximately 10 minutes) so that oil can penetrate each section sufficiently before starting continuous operation.

- 2) When starting the machine initially and after kept away for a long time without using at all, apply two or three drops of oil each section noted with an arrow mark, and to operate the machine continuously, apply two or three drops of oil each section whenever starting operation in the morning and in the afternoon.

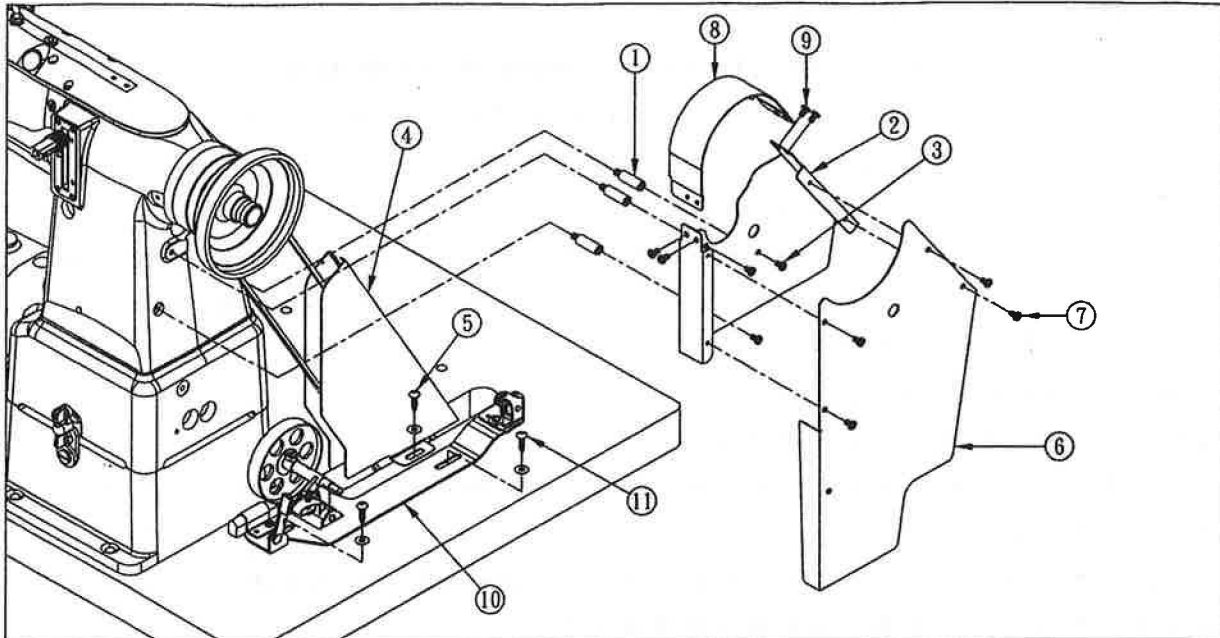
- 1) 操作前，請適度在箭頭所標示位置注油潤滑。

機台安裝完成後，請先依注油步驟完成潤滑動作，並請稍等約 10 分鐘，待油完全滴入滲透全機，再啟動機器。

- 2) 機台初使用或持續一段時間未使用，再重新使用前，請先在每一箭頭記號注油孔處，滴 2~3 滴油潤滑，並保持早、午各一次做基本保養潤滑動作。



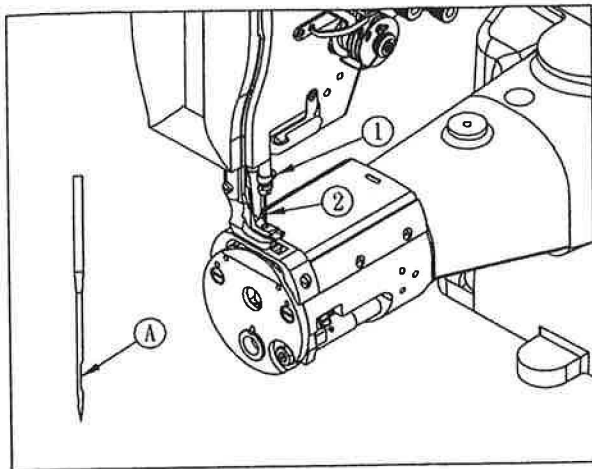
### 3. Installing The Belt Cover 皮帶蓋的安裝



- 1) Install three belt cover supports ① to the machine.
- 2) Install the belt cover ② to the belt cover supports using screws ③.
- 3) Install the belt cover ④ to the table using the wooden screws ⑤.
- 4) Install the belt cover ⑥ to the belt cover ② using screws ⑦.
- 5) Install the belt cover ⑨ to the belt cover ② using screws ⑧.
- 6) Place bobbin winder ⑩ in the belt cover, and position it so that it does not contact the belt cover before fixing it with the wooden screws ⑪.

- 1) 裝上三支皮帶蓋的支撐架①。
- 2) 用螺絲③將皮帶蓋②，裝置於皮帶蓋支撐架上。
- 3) 將皮帶蓋④以螺絲⑤裝置於車頭上。
- 4) 裝上皮帶蓋⑥於皮帶蓋②上，並以螺絲⑦鎖緊。
- 5) 用螺絲⑨將皮帶蓋⑧固定於皮帶蓋②上。
- 6) 用木螺絲⑪固定繞線器之前，須將繞線器⑩置於皮帶蓋之間，適當的選定位置，以避免繞線器與皮帶蓋之間有所直接碰觸。

#### 4. How to Install 機針的安裝



#### ★BE SURE TO POWER-OFF THE MOTOR

The normal needle system is "DPx17"

1) Turn the handwheel by hand and raise the needle bar to its top position.

2) Loosen screw ① and insert the needle ② into the hole until it will go no further.

★Insert the needle with its recess (A) facing directly to the right-hand side.

3) Securely tighten the screw in the needle.

★機針標準規格為 DPx17。

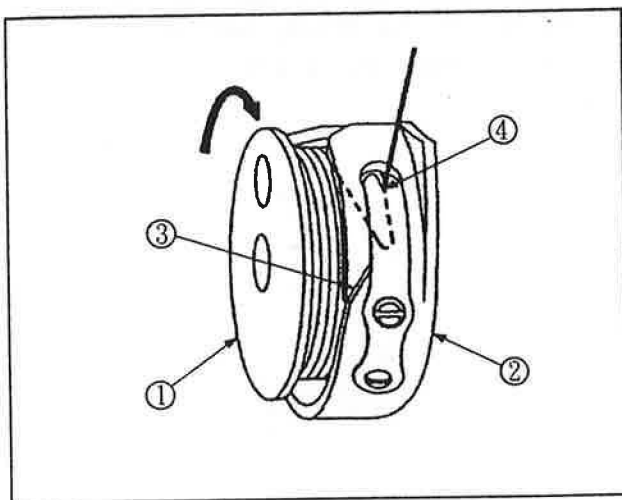
1) 轉動機頭上輪，將針棒提升至其頂點。

2) 鬆開鎖針螺絲①，將機針②插入針孔內，直至機針無法再往上移動。

★機針裝上時，注意凹槽(A)要朝右邊方向。

3) 機針安裝好，將鎖針螺絲鎖緊即可。

#### 5. How to Install the Bobbin 梭子的安裝



1) Put the bobbin ① into the bobbin case ②.

2) Pass the thread through the threading groove ③ and the notch ④ of tension spring in the bobbin case.

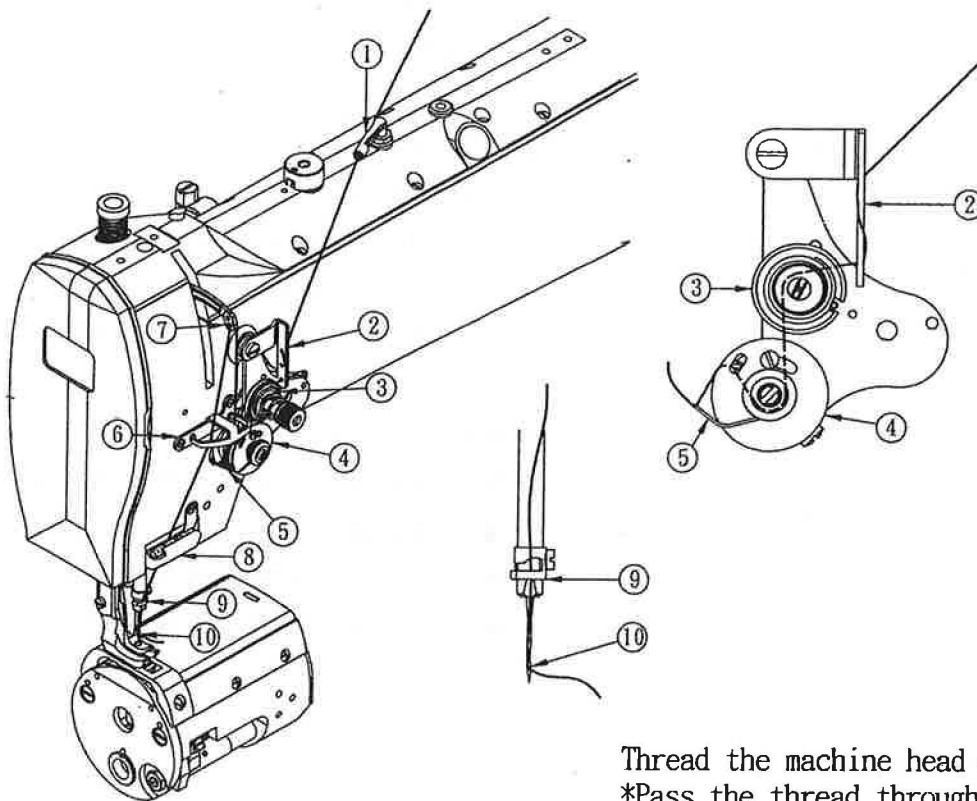
CAUTION: Fit the bobbin in the bobbin case so that the bobbin turns in the direction of the arrow when the bobbin thread is pulled.

1) 將梭子①放入梭殼②內。

2) 將縫線穿過梭殼的穿線溝槽③，並繞過彈簧夾線片④的 V 型槽。

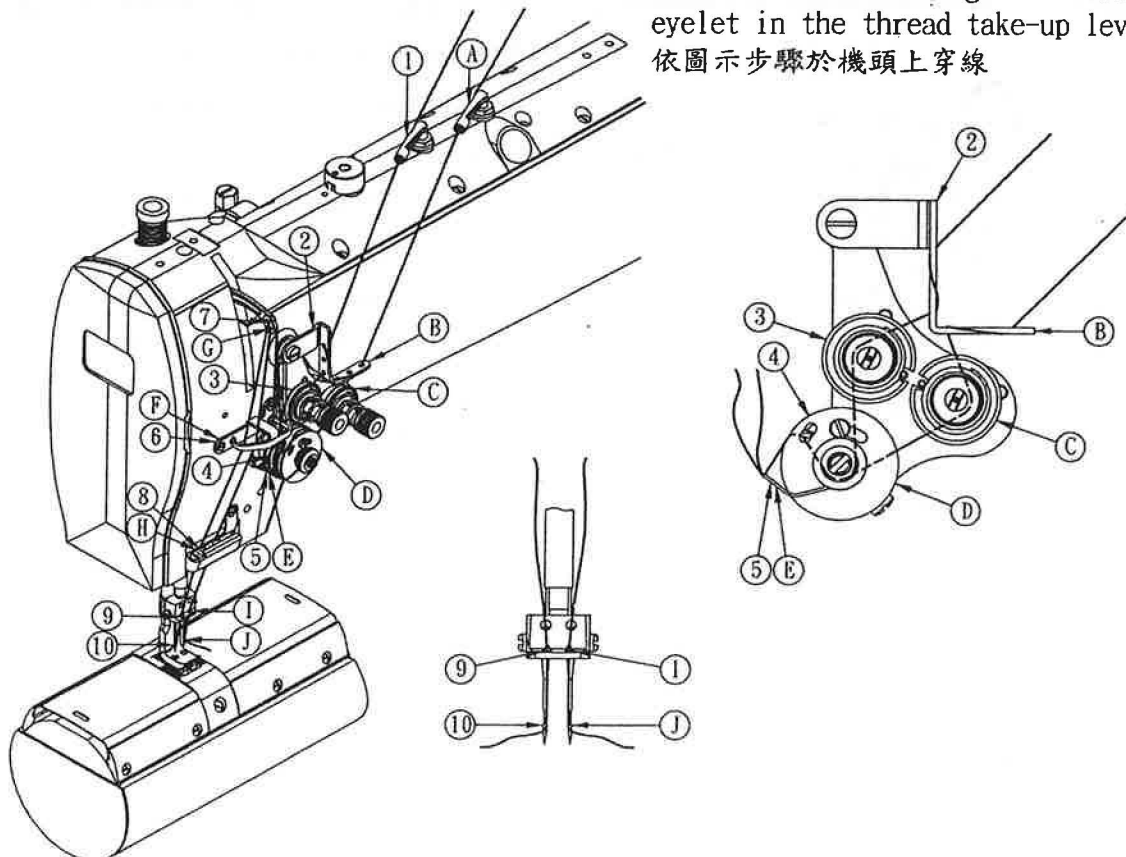
注意:梭子安裝好後，拉動底線時，梭子轉動方向須如圖示之箭頭方向。

## 6. How to Thread the Machine Head 上線的穿法

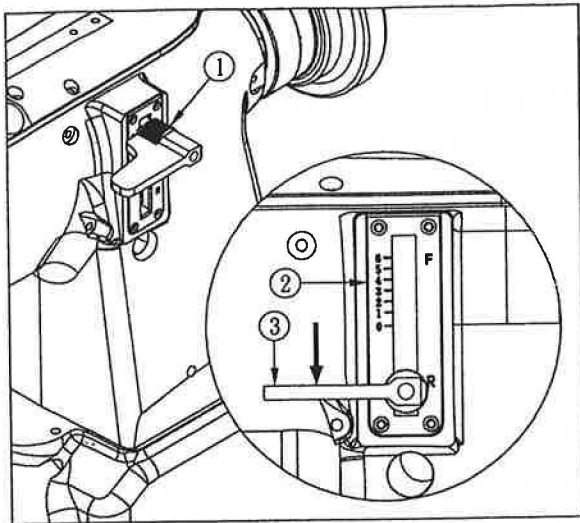


Thread the machine head as illustrated

\*Pass the thread through the lower eyelet in the thread take-up lever  
依圖示步驟於機頭上穿線



## 7. Adjusting the Stitch Length 縫目長度的調整



Turn adjusting nut ①. Align the stitch length dial ② indicator to the line of the lock plate turning stitch length dial counterclockwise or clockwise.

### ★Reverse stitching

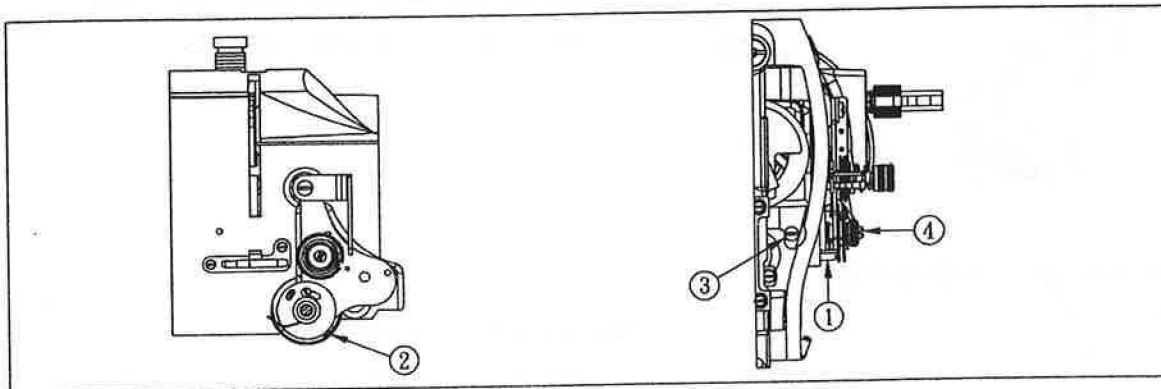
- 1) Push the feed lever ③ down.
- 2) The machine performs reverse feed stitching as long as the lever is held depressed.
- 3) The moment you release the lever, the machine resumes the normal stitching mode.

旋轉調整螺帽①，依所需數字以順時針或逆時針，對準刻度盤②數字直線即可。

### ★倒縫

- 1) 壓下倒縫桿③。
- 2) 壓下不放的情況下，即可持續倒縫。
- 3) 放開倒縫桿後，機器即恢復正常順向之送料。

## 8. Thread Take-up Spring 調線彈簧處之穿線



### ★ Adjusting the thread take-up spring stroke

- 1) Loosen setscrew ②, and turn the adjusting plate ①.
- 2) Turn the adjusting plate ① to the right (counterclockwise) increase its moving range.
- 3) Turn the adjusting plate ① to the left, decrease its moving range.

### ★ Adjusting the thread take-up spring tension

- 1) Loosen setscrew ③, and turn the tension stud ④ over toward left to increase tension.
- 2) Turn it to the right, decrease tension.
- 3) After adjustment, securely tighten the setscrew.

### ★調整調線彈簧之衝程

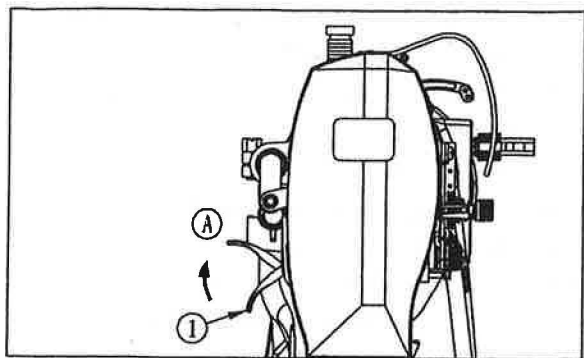
- 1) 鬆開固定螺絲②，轉動調整板①。
- 2) 將調整板①轉向右邊(逆時針方向)，可以增加調線彈簧之動作範圍。
- 3) 將調整板①轉向左邊(順時針方向)，可以減少調線彈簧之動作範圍。

### ★調整調線彈簧之張力

- 1) 鬆開固定螺絲③，可以轉動沙拉組心軸④，向左轉動，可以增加調線彈簧之張力；反之，右轉動，調線彈簧張力即減少。
- 2) 做完以上調整，將固定螺絲鎖緊即可。



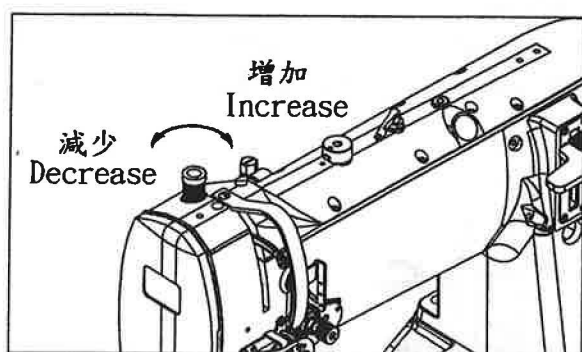
## 9. Lifting the Presser Foot 押腳的提升



1) Turn the hand lifter ① toward ①A, presser foot up.

1) 將手動提升押腳桿①，向①A(順時針方向)移動，押腳即朝上提起。

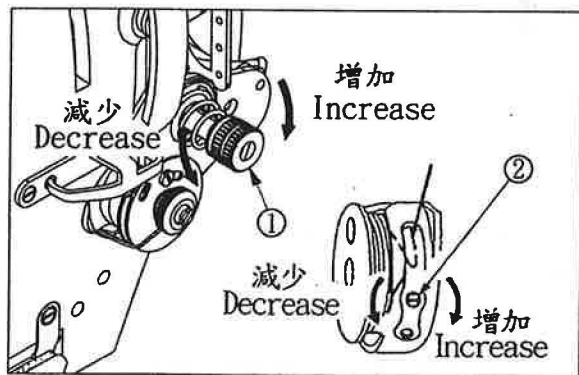
## 10. Adjusting the Presser Foot Pressure 押腳壓力的調節



1) Turn the presser spring regulator to the right to increase and to the left to decrease pressure.

1) 轉動壓力彈簧之調整螺桿，向右轉動，壓力即增強；向左轉動，壓力即減弱。

## 11. Thread Tension 線張力調整



### ★Adjusting the needle thread tension

Turn the thread tension nut ① clockwise to increase or counterclockwise to decrease the needle thread tension.

### ★Adjusting the bobbin thread tension

Turn the tension screw ② clockwise to increase or counterclockwise to decrease the bobbin thread tension.

### ★上線張力的調整

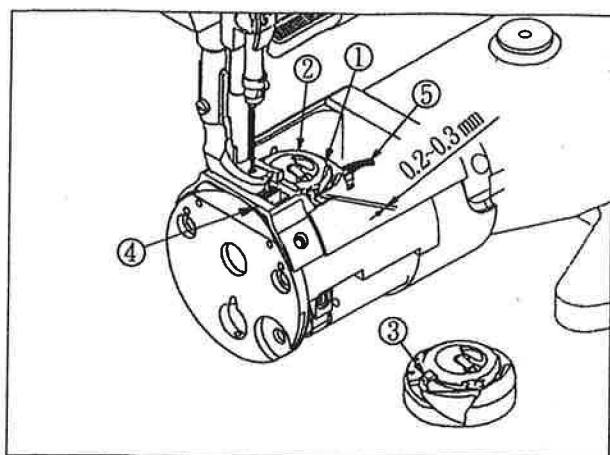
轉動沙拉組的線張力調整螺帽①，依順時針方向旋轉，上線張力增強；依反時針方向旋轉，上線張力減弱。

### ★底線張力的調整

轉動張力調整螺帽②，順時針方向旋轉，底線張力增強；反時針方向旋轉，底線張力減弱。



## 12. How to Adjust the Bobbin Case Opening Lever 釜檔(牛角)位置的調整



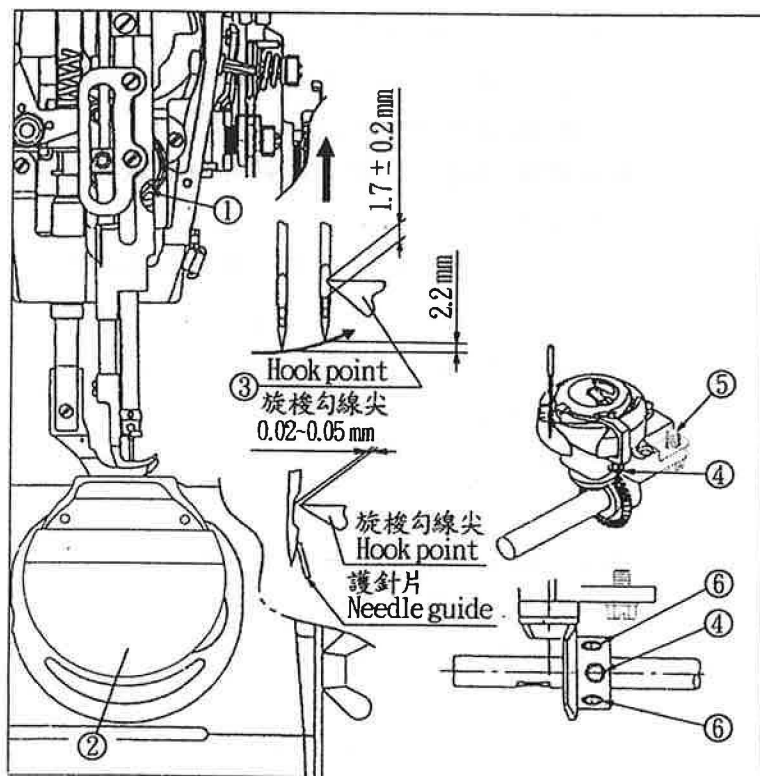
- 1) Turn the handwheel by hand, and bring the bobbin case opening lever ① until it will go no further.
- 2) Align the inner hook ③ to the throat plate ④, and then turning bobbin case ② counterclockwise by hand.
- 3) Loosen the screw ⑤, adjust the clearance between bobbin case penning lever and projection of the bobbin case to 0.2 to 0.3mm then securely tighten screw ⑤.

1) 用手轉動機頭上輪，使釜檔(牛角) ①運動至其極點位置。

2) 使內釜③對準針板④的中心，此時，用手轉動梭殼②，依反時針方向旋轉。

3) 鬆開螺絲⑤，調整釜檔與梭殼突出部位的間隙為 0.2mm~0.3mm，然後鎖緊螺絲⑤(如上圖)。

## 13. Needle-to-Hook Relationship 機針與旋梭的相對關係



- 1) Bring the needle bar down to its lowest point.
- 2) Loosen the needle bar clamp screw ①.
- 3) Bring the needle bar up to 2.2mm from its lowest point turning the handwheel.
- 4) Adjust the distance between the top edge of needle eyelet and hook point ③ to 2.2mm when hook point nearly meet the center of needle, then tighten the needle bar clamp screw ①.

### ★The needle-to-hook clearance

5) Take bed end cover ② and loosen screws ④ and ⑥ in the large bevel gear.

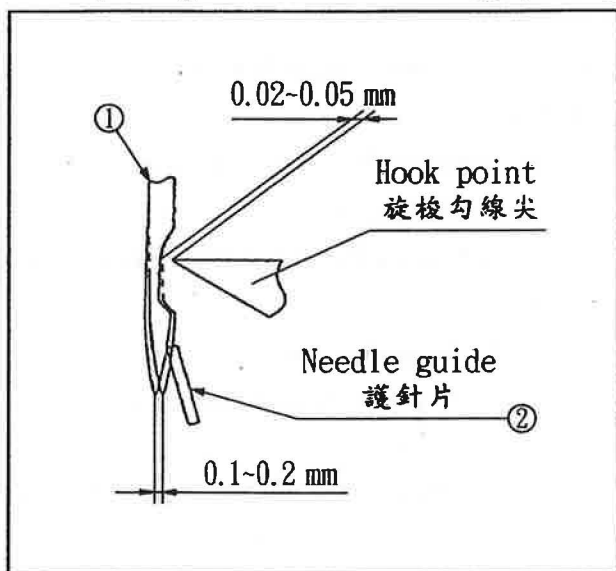
6) Loosen screw ⑤ in the hook driving shaft saddle and move the hook driving shaft saddle to the right or left until a clearance of 0.02 to 0.05 mm is provide between the blade point of the hook and needle. After the adjustment, securely tighten the screw.

7) Then align the blade point of the hook with the center of the needle, and tighten screw ④ in the gear.

8) Turn the handwheel clockwise and alternately tighten screws ⑥ little by little.

- 1) 轉動機頭上輪，使針棒位於最低點位置。
- 2) 鬆開針棒固定束環螺絲①。
- 3) 轉動機頭上輪，使針棒從其最低點往上移 2.2mm 的位置。
- 4) 此時調整旋梭勾線尖靠近針的中心點間隙，旋梭勾線尖應位於針眼的上端，然後將針棒束緊螺絲①鎖緊。
- 5) 取下筒底部罩蓋②，並鬆開斜齒輪螺絲④、⑥。
- 6) 鬆開旋梭中螺絲⑤，並將旋梭左右移動，待機針與旋梭的勾線間距離約 0.02mm~0.05mm 時，再將螺絲鎖緊即可。
- 7) 接著，將旋梭的勾線尖對準機針的中心點，並將斜齒輪螺絲④鎖緊。
- 8) 以順時針方向轉動機頭皮帶輪，將螺絲⑥逐步鎖緊即可。

#### 14. Adjusting the Needle Guide 護針片位置的調整



★ Confirm the position of the needle guide in the hook when you changed the hook. The needle ① is a slight bend to 0.1 to 0.2 mm by needle guide ②.

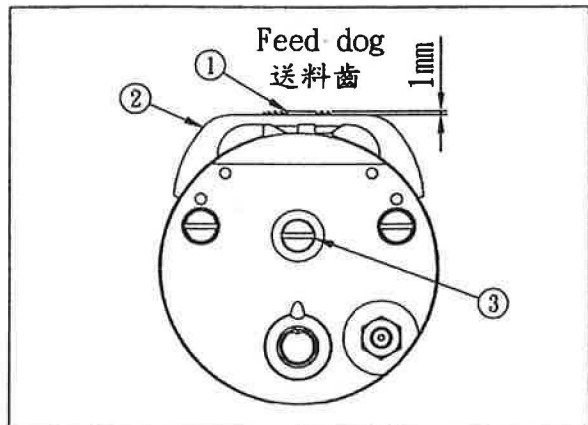
Adjust the needle guide position to inside or outside direction using screwdriver.

★ 更換旋梭時，務必做護針片與旋梭位置的確認動作。

護針片調靠近針尖尾巴，護針片②與針①尖端輕微的彎曲，間隙為 0.1~0.2mm。

使用小號螺絲刀調整護針片的位置，使之朝向裡面或朝向外面。

#### 15. Height of the Feed Dog 送料齒高度的調整



★ Standard height of the feed dog is 1 mm from the surface of throat plate ②.

When the feed dog height needs to be adjusted according the sewing conditions or after the feed dog is replaced, follow the procedure described below.

- 1) Loosen screw ③ in the feed dog.
- 2) Adjust the feed dog height comparatively higher than the standard height, and temporarily fix it at that position.

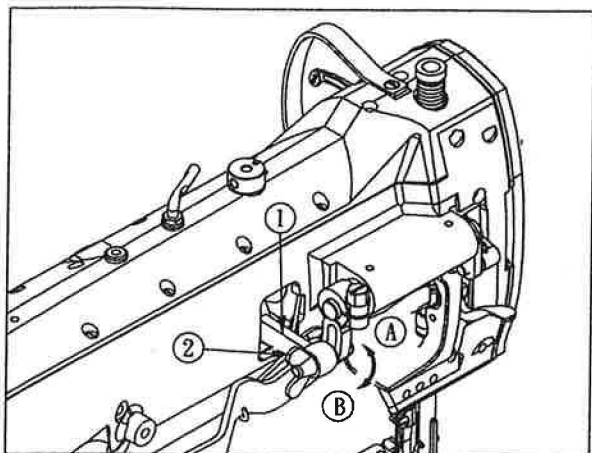
3) Now, adjust the height of the feed dog appropriately, and securely tighten the screw ③ in the feed dog.

★ 標準之送料齒高度，位於針板上 1mm 處，若需調整高度或在更換送料齒後，請按下列步驟調整。

- 1) 鬆開送料齒螺絲③。
- 2) 將送料齒先高於標準之高度。
- 3) 然後依實際需要調整之，調整後在旋緊螺絲③，將其固定之。

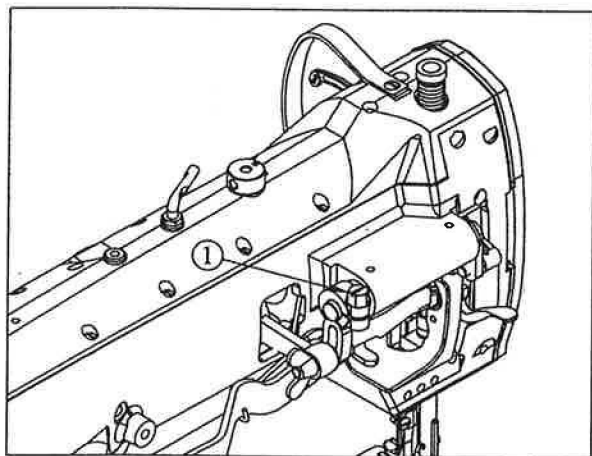
## 16. Adjusting the Walking Foot and the Presser Foot 調整內外押腳

### ★Height of the walking foot and the presser foot 內外押腳之高度



- 1) Loosen nut ②.
  - 2) Turn the rod ① toward ④, walking foot and presser foot up.  
Toward ⑤, walking foot and presser foot down.
  - 3) After adjustment, securely tighten nut ②.
- 1) 鬆開螺帽②。
- 2) 將偏心輪連桿①轉向④方向，會增加內外押腳之高度；轉向⑤方向，則會減少內外押腳之高度。
- 3) 調整後，鎖緊螺帽②。

### ★Alternate vertical motions of the walking foot and the presser foot 內外押腳之交互垂直運轉



The alternate vertical strokes of walking foot and presser foot are normally equal.

Depending on the type of materials, however the vertical stroke of the presser foot may be set smaller than of walking foot.

Do as follows:

- 1) Turn the handwheel, raise the presser foot from throat plate a little.
- 2) Loosen screw ①.
- 3) The presser foot falls to the throat plate by power of the spring.

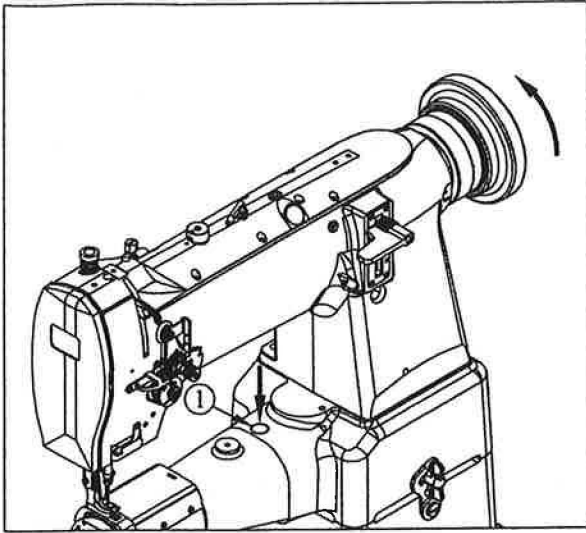
Then tighten screw ① in its position.

內外押腳的交互垂直衝程，一般是相等的，依據縫製物料之型態，內押腳的垂直衝程有時需調整至大於外押腳的垂直衝程。

其調整如下：

- 1) 轉動機頭皮帶輪，將外押腳向針板上提升少許。
- 2) 鬆開螺絲①。
- 3) 外押腳將藉彈簧之力量落下置針板後，再將螺絲①鎖緊。

## 17. Re-Engage Safety Clutch Mechanism 重新啟動安全離合器裝置



1) Remove any foreign matter which may have lodged in hook. Do not use any sharp-edged tools.

2) Pressing button ① and turn handwheel rearward slowly to re-engage safety clutch.

1) 將纏繞於旋梭上之異物清除，清除時避免使用尖銳之工具。

2) 將按鈕①壓住不放，並慢慢轉動機頭之皮帶輪，即可重新啟動安全離合器。

## 18. Trouble and Corrective Measures 問題與處理方式

Trouble 問題	Cause 原因	Corrective measure 解決方法
<p>1.Thread breakage (Thread frays or Wears out.)</p> <p>1. 斷線 (線磨斷或磨損)</p> <p>(Needle thread Remains 2 to 3 cm on the wrong side of the cloth) (針線仍有 2~3 公分長度留在物料 的錯誤一方)</p>	<p>①The thread path, needle point, hook point or bobbin case positioning finger has scratches. 過線道，針尖、梭頭勾線尖端或梭殼定位舌尖有損傷。</p> <p>②The needle thread tension is too high. 上線張力太高。</p> <p>③The bobbin case opening lever clearance is too large. 釜檔(牛角)的間隙太大。</p> <p>④The needle hits the hook point. 針撞擊到旋梭的勾線尖。</p> <p>⑤The needle thread tension is too low 上線張力太低。</p> <p>⑥The thread take-up spring has an excessively high tension while it has an excessively small stroke. 調線簧的衝程大小，以致調線簧之張力太高。</p> <p>⑦The timing between the needle and hook is too early or late. 針與旋梭相對應時間太早或太晚。</p>	<p>*Remove the scratches on the hook point using a fine sand paper. Buff the bobbin case positioning finger. 用細沙紙將梭頭尖端之磨損予以磨除，內釜定位舌尖予以拋光處理。</p> <p>*Properly adjust the needle thread tension. 調整上線張力至適當。</p> <p>*See "12. How to Adjust the Bobbin Case Opening Lever". 請參閱#12 說明，如何調整釜檔(牛角)。</p> <p>*See"13. Needle-to-Hook Relationship". 請參閱#13 說明，機針與旋梭的關係。</p> <p>*Properly adjust the needle thread tension. 調整上線張力至適當。</p> <p>*Decrease the tension, and increase the stroke. 減低張力，增加衝程。</p> <p>* See"13. Needle-to-Hook Relationship". 請參閱#13 說明，機針與旋梭的關係。</p>
<p>2.Stitch skipping 跳針</p>	<p>①The clearance between the needle and the hook point is too large. 針與旋梭勾線尖之間隙太大。</p> <p>②The timing between the needle and hook is too early or late. 針與旋梭相對應時間太早或太晚。</p>	<p>* See"13. Needle-to-Hook Relationship". 請參閱#13 說明，機針與旋梭的關係。</p> <p>* See"13. Needle-to-Hook Relationship". 請參閱#13 說明，機針與旋梭的關係。</p>

	<p>③The presser foot pressure is too low. 押腳壓力太低。</p> <p>④The clearance between the top edge of the needle eyelet and the hook point is not correct. 針眼孔頂端與梭頭尖端之間距不正確。</p> <p>⑤The bobbin case opening lever clearance is too large. 釜檔(牛角)的間隙太大。</p> <p>⑥The size of the needle is wrong. 機針規格錯誤。</p>	<p>*Increase the presser foot pressure. 加強押腳之壓力。</p> <p>* See"13. Needle-to-Hook Relationship". 請參閱#13 說明，機針與旋梭的關係。</p> <p>*See "12. How to Adjust the Bobbin Case Opening Lever". 請參閱#12 說明，如何調整釜檔(牛角)。</p> <p>*Replace the needle by one which one grade thicker. 將機針換為"大一號"規格。</p>
3.Loose stitches 縫目鬆弛	<p>①The thread has not been the passed the through notch of the bobbin case tension spring. 底線未穿過梭殼夾線片彈簧的V型槽。</p> <p>②The thread path is poorly finished. 線道的磨光處理不良。</p> <p>③The bobbin does not rotate smoothly. 梭子的運轉不平順。</p> <p>④The bobbin case opening lever clearance is too large. 釜檔(牛角)的間距過大。</p> <p>⑤The bobbin thread tension is too low. 底線張力太小。</p> <p>⑥The bobbin thread has been wound too tight. 梭子底線繞得太緊。</p>	<p>*Properly thread the bobbin case. 須正確的穿底線。</p> <p>*Grind it using a fine sand paper of a buff. 用細砂紙做拋光處理。</p> <p>*Replace the bobbin or hook. 更換梭子或旋梭。</p> <p>*See "12. How to Adjust the Bobbin Case Opening Lever". 請參閱#12 說明，如何調整釜檔(牛角)。</p> <p>*Properly adjust the tension. 增強底線張力至適當。</p> <p>*Decrease the bobbin thread winding tension. 減少梭子底線的繞線張力。</p>