

# VG-999ES Series

超細筒型三針五線雙面飾綳縫機

## 使用說明書

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## 操作安全規範

### Safety Instructions

#### 1. 確保安全使用

##### To ensure safe use

請詳閱以下事項安全規範並正確使用此縫紉機及視關設設  
Always observe the following instructions to ensure the safe use of the industrial sewing machines and devices.

#### 1-1 機器的應用

##### Application and purpose

此工業用縫紉機的設計是用於提昇客戶的產能，請勿修改作其他用途。

The sewing machine is designed to improve productivity in the sewing industry and must not be used for other applications and purposes. Do not use this sewing machine until it can be confirmed that safety measures for the drive units have been taken.

#### 1-2 使用前務必參照使用說明書後再開始使用機器

##### Before use

Read all instruction manuals thoroughly before starting the use of this machine and follow them. Also, read the instruction manual for the installed drive unit.

#### 1-3 工作環境

##### Working environment

請避免機器在以下環境使用

Do not work in the following environments:

- 高溫及潮濕的地方  
Place where atmosphere temperature and humidity give a bad influence the performance of sewing machines.
- 室外或暴露在陽光直射的地方  
Outdoors and place where the sewing machines are exposed to sunlight directly.
- 有灰塵、腐蝕氣體或易燃物的地方  
Atmosphere containing dust, corrosive gases or flammable gases.
- 額定電壓超過±10%  
Place where voltage fluctuation exceeds ±10% of the rated voltage.
- 與馬達消耗功率，電源不符合的地方  
Place where power capacity necessary for the used motor specifications cannot be secured.
- 在電流或磁場過強的地方  
Place where strong electric or magnetic fields are generated such as near large-output high frequency transmitters or high frequency welding machines.

#### 1-4 拆箱及運送方式

##### Unpacking and transportation

- (1) 要從車頭上方拆箱  
Unpack from the top.
- (2) 當取出機器時，請勿碰觸機器針及穿線處的零件。  
Never hold the parts near the needle or threading parts when removing the sewing machine head from the buffer of box.
- (3) 請至少一人協助搬運機器  
When carrying the sewing machine head, have an assistant.
- (4) 當使用手推車搬運機器時，要避免碰撞及震動造成機器損壞  
Pay attention not to get excessive impact or shock when moving the sewing machine head with a pushcart.

#### 2. 安裝及準備

##### Installation and preparation

#### 2-1 安裝及訓練

##### Instruction and training

非經過專業訓練人員，請勿操作或維修此機器

Operator and workers, who supervise, repair or maintain the machine head and machine unit are required to have the adequate knowledge and operation skills to do the job safely. In order to establish such necessary conditions, it needs for the employer to plan and enforce the safety education and training to those workers.

#### 2-2 車板及馬達

##### Sewing table and motor

- (1) 請使用堅固的桌板安裝此機器  
Prepare a machine table that has enough strength to withstand the weight of the sewing head and any reaction while operating.
- (2) 機器操作時光線要充足。確保操作空間順暢、舒適。  
Maintain a comfortable working environment with considering the lighting and the arrangement of sewing machine so that the operators can work smoothly.
- (3) 馬達控制箱要安裝在操作員易於操作的位置  
When installing the control box and the related parts on the sewing machines, take care about the posture of the worker.
- (4) 附屬驅動元件及配備要依照安裝手冊正確安裝  
Install the drive unit correctly according to the instruction manual.

#### 2.3 接電

##### Wiring

- (1) 在沒有完全安裝好機器之前，請勿接電  
Never connect the plug for power supply until assembly is finished.
- (2) 所有電源接頭要牢固地連接到機器、馬達及其他電氣設備  
Fix the connectors securely to the sewing machine head, motor, and electric apparatus.
- (3) 接頭的電線要與符合用電規格  
Do not apply excessive force to the connection cords.
- (4) 所有電線要遠離機器運轉的部位  
Connect the cords away from the driving parts.
- (5) 接地線要固定在機器上指定的位置  
Place the ground wire securely to the designated position on the machine head.

#### 2-4 開始操作機器前

##### Before operation

- (1) 注意任何潤滑油、矽油，溶濟不要接觸到皮膚或眼睛  
Take care not to attach lubricant, silicone oil, and grease on the eyes or skin.
- (2) 機器運轉前檢查是否有注入所需的潤滑油及油量  
Be sure to fill or drop lubrication oil before operation the sewing machine.
- (3) 不要把手放在針或機器運轉部位附近  
Never put your hand under the needle or near the moving parts of the machine when turning on power supply switch.
- (4) 確認皮帶輪及手輪運轉方向與標示方向相符  
When operation a new sewing machine, make sure the rotating direction of pulley agrees with the rotating-direction mark.



## 2-5 操作機器的時候

### During operation

- (1) 確認所有運轉部位的安全蓋都有裝上，如皮帶蓋、護手蓋或護目鏡。  
Be sure to operate the sewing machine with the safeguards such as belt cover, finger guard, and eye guard.
- (2) 不要把手指、頭髮或身體靠近機器的針或運轉的部位  
Never place the finger, hair or objects under the needle or close to the moving parts while operating the sewing machine.
- (3) 穿線或更換針時務必關閉電源  
Be sure to turn off the power supply switch when threading or replacing the needles.
- (4) 不要把手放在上下切線刀組接近刀口的位置  
Never place your hands close to the knives when operating the sewing machine with the trimming devices.
- (5) 離開工作崗位或工作完成時，務必再次確認機器電源已關閉  
Be sure to turn off the power supply switch when terminating the sewing work or leaving the sewing machine.
- (6) 假如機器操作時有不正常的音響及異味產生，請立即關閉電源  
If the sewing machine malfunctions, abnormal sound or smell something unusual while operation, be sure to turn off the power supply switch.

## 2-6 拆卸或更換零件

### Removal

- (1) 更換零件或調整機器前務必關閉電源  
Turn off the power supply switch if removed or replaced any parts or during adjustment of sewing machine.
- (2) 電源線從插座拔下時，不可拉線，要從插頭拔下  
Do not pull the cord when removing the plug. Be sure to hold the plug itself.
- (3) 控制箱內電壓高，請在關閉電源5分鐘後再打開箱蓋  
A high voltage is applied inside the control box. Turn off the power supply switch and wait more than 5 minutes before the cover.

## 3. 檢查及維修

### Maintenance, inspection, and repair

- (1) 請參照機器使用說明作檢查及維修  
Follow the instruction manuals for maintenance, inspection, and repair.
- (2) 專業人員需有資格方能作檢查及維修  
Entrust the maintenance, inspection, and repair to specially trained personnel.
- (3) 務必關閉電源等到馬達完全停止運轉後才可維修機器  
Be sure to turn off the power supply switch and make sure that the sewing machine and motor completely stop before the maintenance, inspection, and repair, (If using a clutch motor, take care that the motor keeps turning for a while even after turning off the power supply switch.)
- (4) 不要依客戶的單方判斷或要求任意更改機器  
Do not modify the sewing machine by the customer's judgment.
- (5) 請指名使用原廠商零件作機器維修及更換  
Be sure to use original replacement parts for repairs or maintenance.

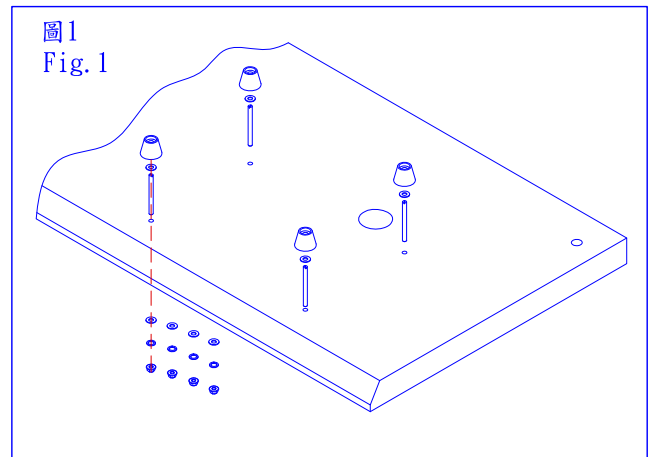
### 安裝機器的機座

#### Assembling the machine rest board

請依圖 1 所示，安裝膠墊支架及防震膠墊。

Assemble the components comprising the machine rest board by referring to the Fig. 1.

Be sure to secure all rods, nuts and bolts firmly with no shake.

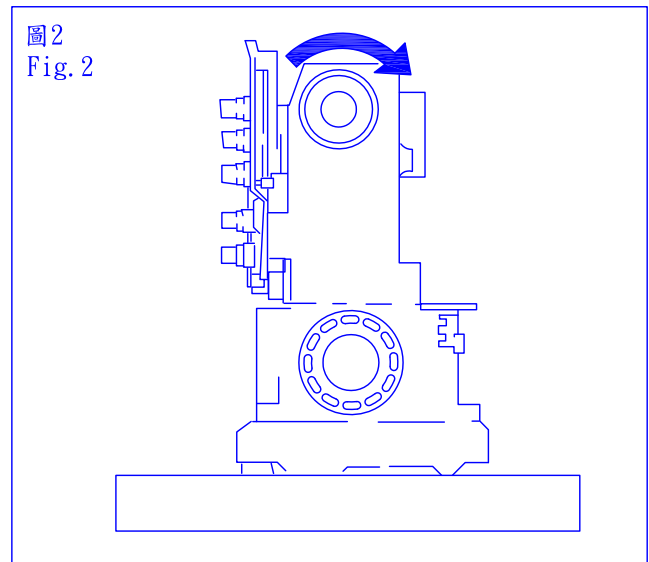


### 機器手輪運轉方向

#### Operation direction of the machine pulley

如圖 2 所示，機器手輪運轉為順時針方向。

The machine pulley rotates clockwise as seen from the end of the machine pulley. (Fig. 2)



## 機器潤滑 Lubrication

請關閉電源後指定專門技術人員更換新油

1. 拆下油槽左方的螺絲 1 .
2. 洩完油槽的油後, 再把螺絲 1 鎖上 . (圖5)
3. 請使用本公司指定的潤滑油 .
4. 打開油蓋 2 , 把油加到油線 H 和 L 中間的位置 , 蓋上油蓋 2 . (圖6)
5. 機器注入適當潤滑油後, 請踩腳踏板使機器開始運轉然後檢查油鏡 5 是否油有正常流動. (圖8)

When lubricating the machine and/or replacing the oil, please use recommended oil. Using other oils may damage the machine. Please assign qualify technician for the work.

Remove cap 1. to drain out the used oil. (Fig. 5)  
Add the new oil until the oil level lies between (H) and (L) lines.  
After filling the tank with oil, replace the cap 2. (Fig. 6)

Once the machine has been properly filled with new oil, press the machine treadle to run the machine and check oil gauge window 5 to see if the oil is flowing. (Fig. 8)

圖5  
Fig. 5

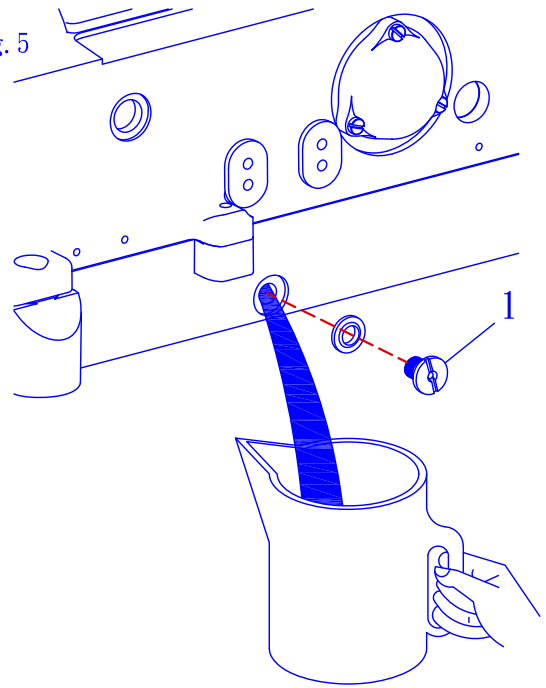


圖6  
Fig. 6

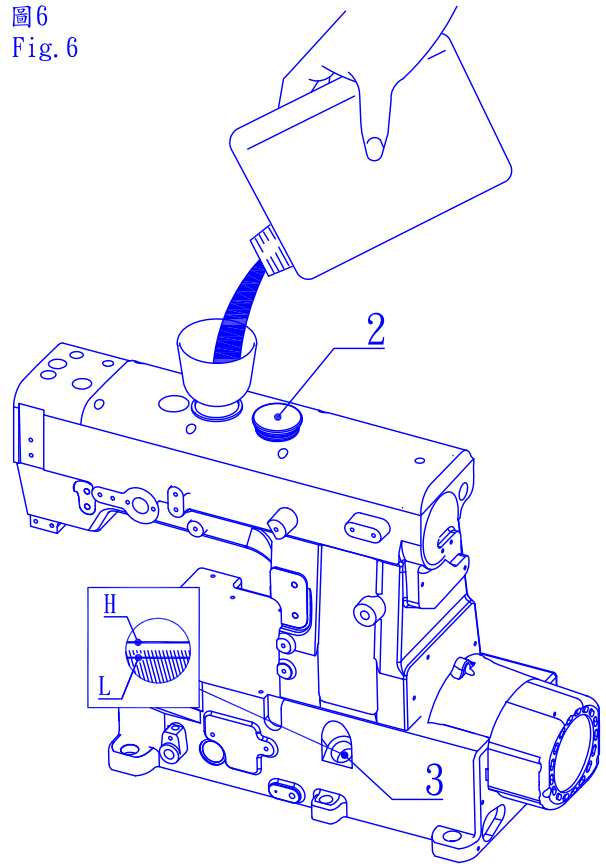
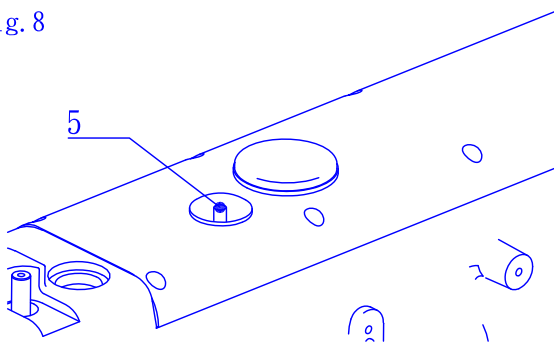


圖8  
Fig. 8



## 穿線 Threading

1. 調整下勾針提線器 1 向上到操作員的方向(圖11)  
穿線後再調回原來的位置。(圖12)

Move looper thread take-up 1 up toward the operator.  
Put looper thread take-up 1 back in the position after  
threading the machine. (Fig. 11 and Fig. 12)

圖11  
Fig. 11

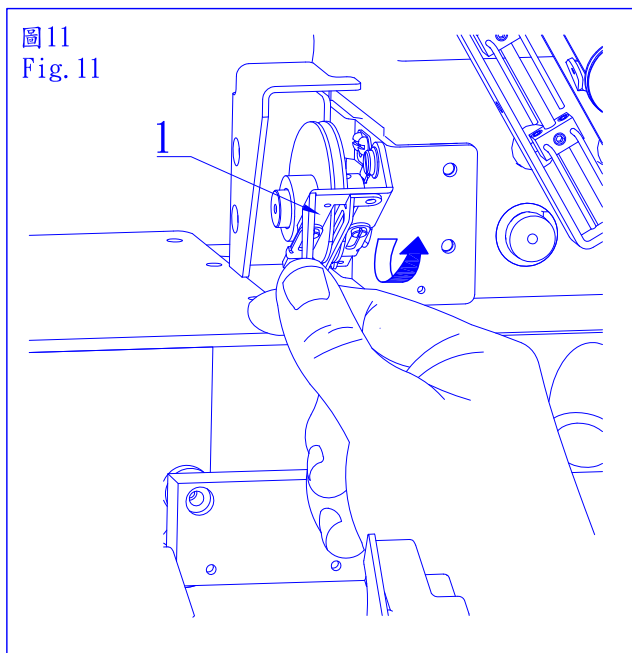
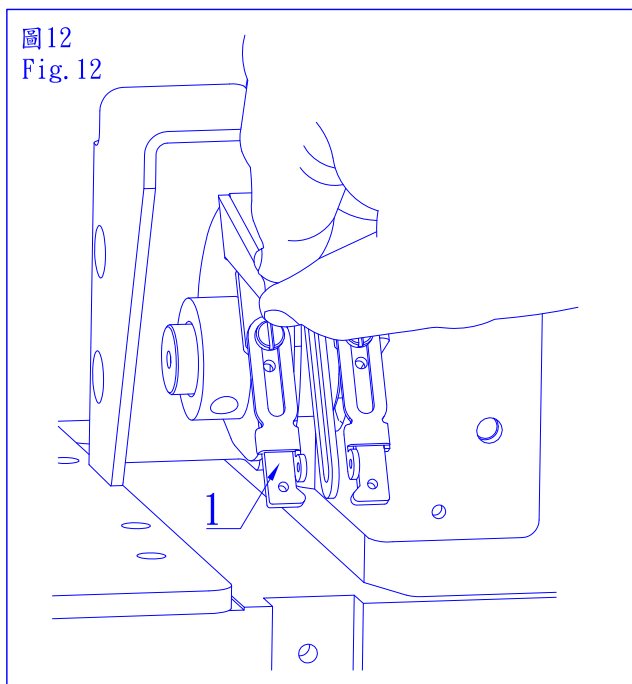


圖12  
Fig. 12

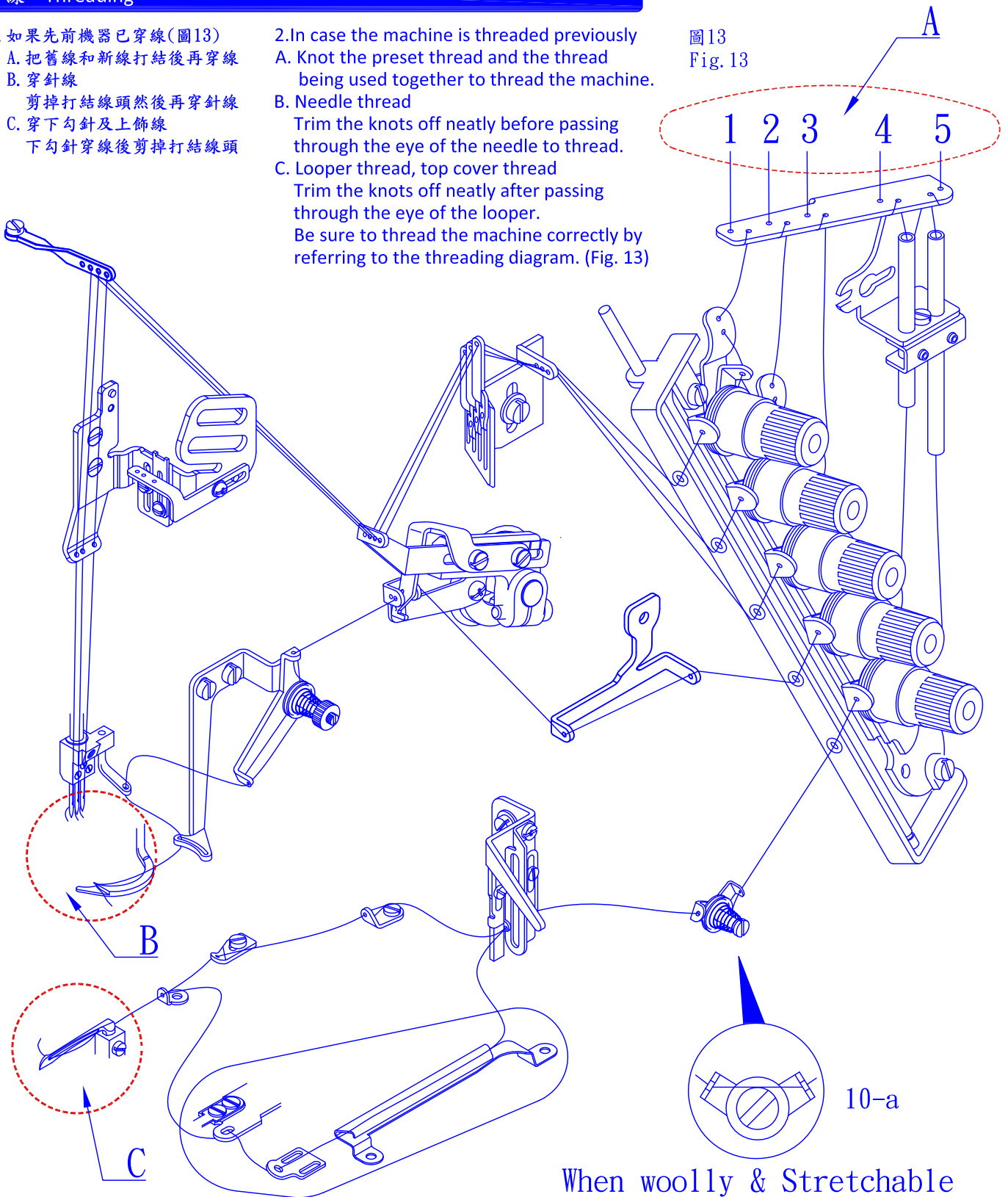


## 穿線 Threading

2. 如果先前機器已穿線(圖13)
- 把舊線和新線打結後再穿線
  - 穿針線  
剪掉打結線頭然後再穿針線
  - 穿下勾針及上飾線  
下勾針穿線後剪掉打結線頭

2. In case the machine is threaded previously
- Knot the preset thread and the thread being used together to thread the machine.
  - Needle thread  
Trim the knots off neatly before passing through the eye of the needle to thread.
  - Looper thread, top cover thread  
Trim the knots off neatly after passing through the eye of the looper.
- Be sure to thread the machine correctly by referring to the threading diagram. (Fig. 13)

圖13  
Fig. 13



For thread trimmer.  
有自動切線裝置時

When woolly & Stretchable  
thread used.  
用在伸縮尼龍線

### 調整抬押腳壓力

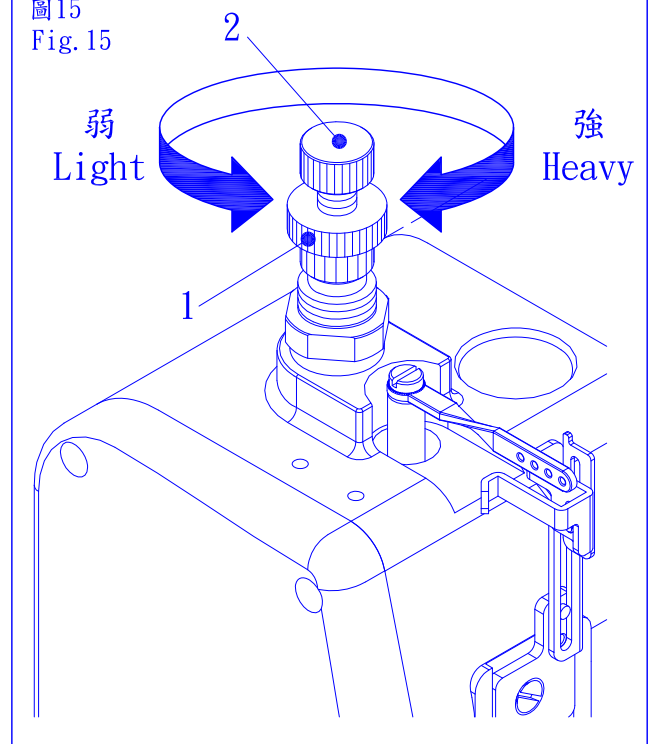
#### Adjusting presser foot pressure

抬押腳壓力調整足夠送料壓力可車縫完美縫目即可, 首先鬆開螺母 1, 然後旋轉螺絲 2. 調整所需要的壓力後再鎖緊螺母 1. (圖15)

The presser foot pressure should be as light as possible, yet sufficient to feed the fabric correctly and provide the uniform stitch formation.

To adjust the presser foot pressure, loosen nut 1 first and then turn screw 2 as required. After this adjustment is made, tighten nut 1.

圖15  
Fig. 15



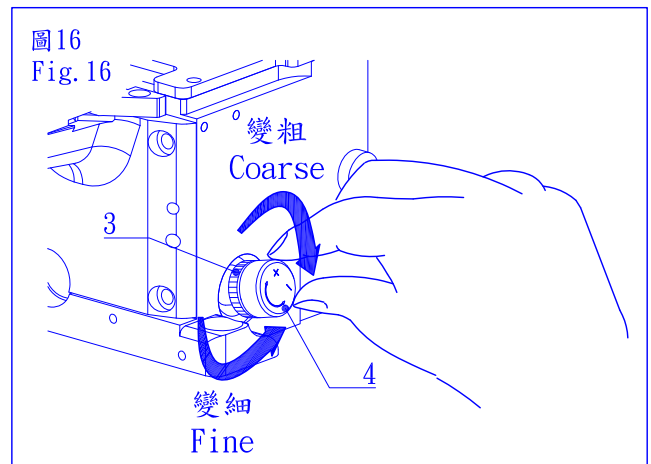
### 調整縫目長度

#### Adjusting stitch length

首先鬆開螺母 3, 然後旋轉螺絲 4, 調整所需要的壓力後再鎖緊螺母 3. (圖16)

To adjust the stitch length, loosen nut 3 first and then turn screw 4 as required. After this adjustment is made, tighten nut 3.

圖16  
Fig. 16



### 調整上送的前後動作 Adjusting the top feed front-to-back motion

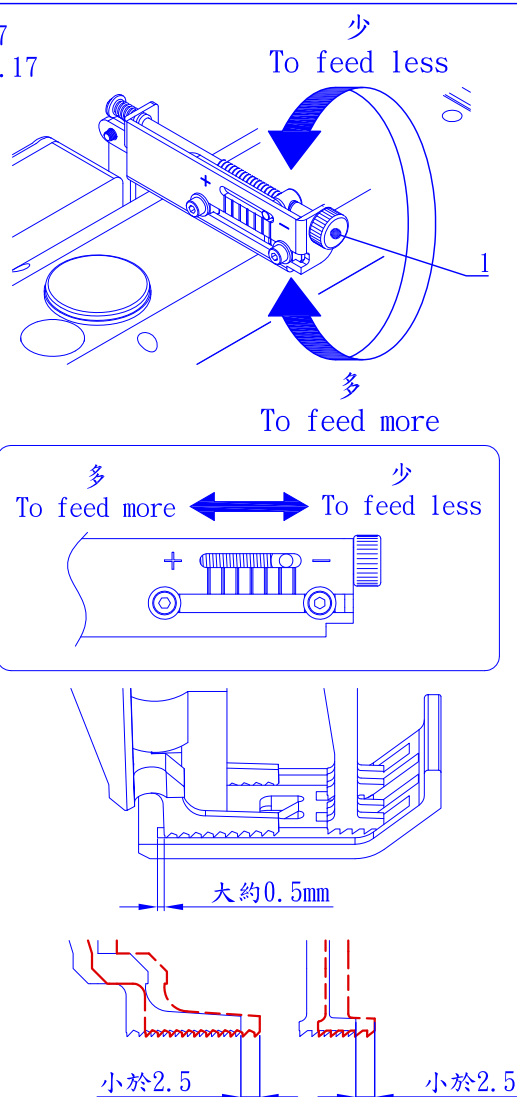
旋轉調整鈕 1 往順時針方向可增加前後量。旋轉調整鈕 1 往逆時針方向可減少前後量。作以上調整後，檢查上送九齒與抬押腳溝槽末端的間隙大約為0.5mm。(圖17)  
上送前後量應小於2.5mm。

To adjust the top feed front-to-back motion, turn knob 1 as required.  
To increase the top feed front-to-back motion, turn knob 1 clockwise.  
To decrease the top feed front-to-back motion, turn knob 1 counterclockwise.

After the adjustment stated above is made, check to make sure that the clearance between the top feed dog and the end of the slot on the presser foot is approximately 0.5 mm. (Fig. 17)

The top feed front-to-back motion should be less than 2.5 mm

圖17  
Fig. 17



### 調整線的鬆緊度 Adjusting the thread tension

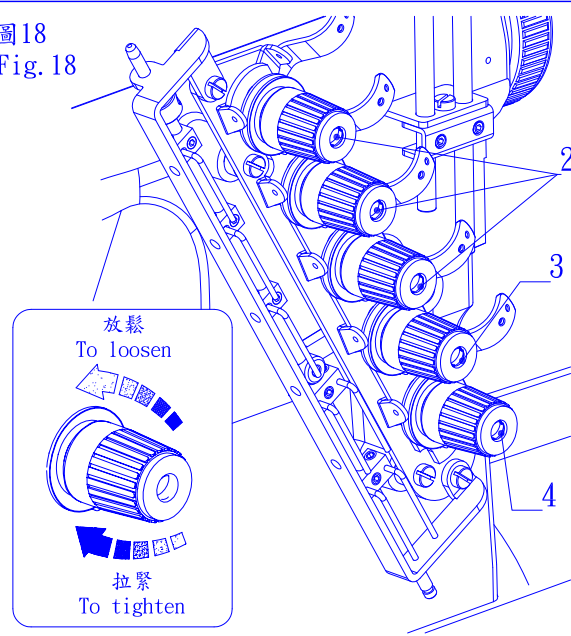
旋轉鈕 2 是調整針線，旋轉鈕 3 是上飾線，旋轉鈕 4 是下勾針。

以上旋轉鈕往順時針方向將線調緊，逆時針方向則將線調鬆，只要能車縫漂亮的縫目，請儘量把線調鬆一點(圖18)

To obtain the proper thread tension, adjust needle thread tension knobs 2, top cover thread tension knobs 3 and looper thread tension knob 4.

To tighten the thread, turn each knob clockwise.  
To loosen the thread, turn each knob counterclockwise.  
Each thread tension should be as light as possible, yet be sufficient to produce balanced and beautiful stitches.  
(Fig. 18)

圖18  
Fig. 18



## 機器的清潔 Cleaning the machine

假如送料機構的軸心，送料皮帶或周邊零件卡線或布屑，可能造成機器的損壞，請定期做機器的清潔。

1. 首先打開側蓋 1，鬆開螺絲 2 然後拆下筒蓋 3。
2. 清除針板溝槽，送料機構軸心，送料皮帶及周邊的線頭，灰塵及布屑。
3. 清潔針棒油封 4 及週邊區域。
4. 裝回筒蓋 3 及鎖緊螺絲 2 然後關上側蓋 1。(圖19)

If the threads are caught in the feed roller, feed belt and/or parts around them, or dirt and dust are collected around, the feed roller and the feed belt may be damaged early. Therefore, be sure to clean the parts stated above as often as possible.

1. Open side cover 1 first, loosen screw 2 and then remove cylinder bed cover 3.
2. Clean the slots on the needle plate, the area around the feed roller and the feed belt, and the inside of the cylinder.
3. Clean the area around the needle bar oil seal 4.
4. Reinstall cylinder bed cover 3 and tighten screw 2. Then close side cover 1. (Fig. 19)

圖19  
Fig. 19

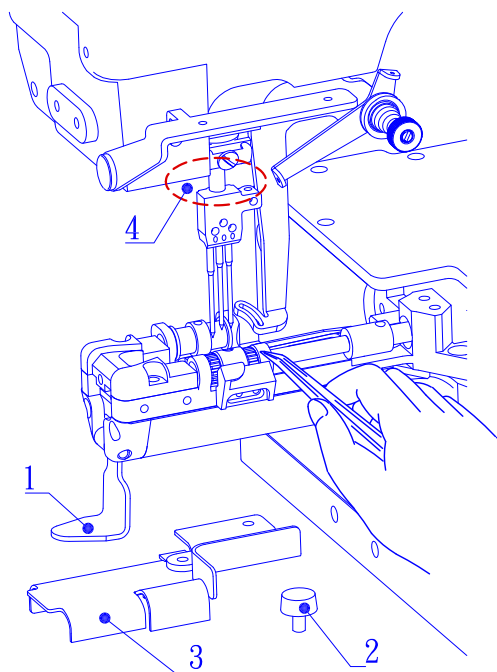
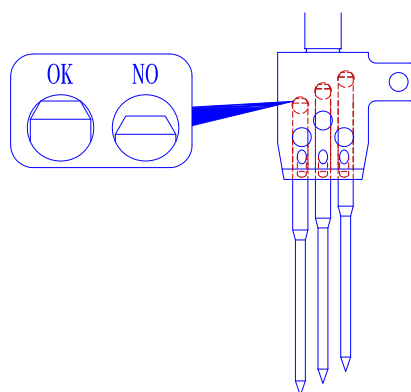


圖20  
Fig. 20



## 車針的更換 Replacing the needle

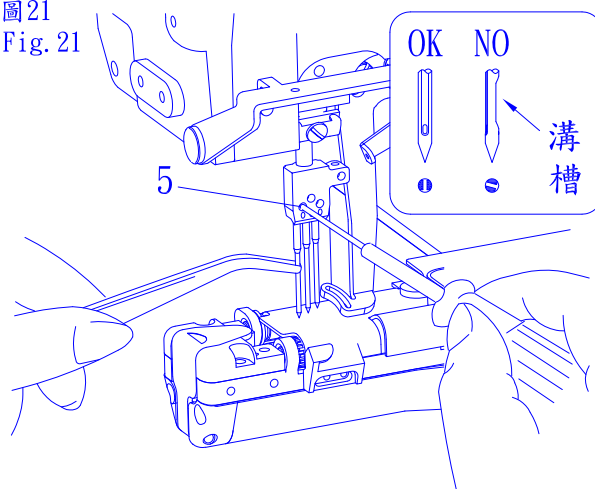
請關閉電源後再做換針的動作

1. 用 1.5mm的六角板手鬆開螺絲 5。
  2. 用夾線器要替針拆下來。
  3. 裝新針時，針的溝槽要面向機器的後方。
  4. 針柄要插入針榴孔的最頂端。
  5. 用 1.5mm的六角板手鎖緊螺絲 5。
- (圖20和圖21)

Always turn off the power and unplug the machine when you replace the needle (s).

1. Loosen screw(s) 5 using a red-handled key wrench (1.5 mm).
2. Remove the old needle (s) by using a pincette (provided as accessories).
3. Fix the needle so that its scarf faces the rear side of machine.
4. Insert a new needle into the needle hole as far it will go by using a pincette.
5. Tighten screw(s) 5 using a red-handled key wrench (1.5 mm). (Fig. 20 and Fig. 21)

圖21  
Fig. 21





## 檢查及清潔濾油器

### Checking and cleaning the oil filter

1. 拆下螺絲 1，蓋子 2，防油圈 3 及濾油器 4。
  2. 必要的話請更換新的濾油器，清潔或更換濾油器後把濾油器 4，防油圈 3，蓋子 2 和螺絲 1 裝回原來的位置。（圖 22）
  3. 使用機器前或長時間不使用，請注入 2-3 滴油到針榴柱 5 及下勾針主軸 6 上。（圖 23）
- 每六個月請更換新的濾油器以保持潤滑系統正常運作。

Replace the oil one month after the first use and thereafter every six months. If you keep using the old oil, it may cause the damage to the machine.

1. Remove screw 1, cover 2, O ring 3 and oil filter 4. Check oil filter 4.

2. Replace the filter if necessary. After checking or replacing the filter, put filter 4, Oil ring 3, cover 2 and screw(s) 1 back into place. (Fig. 22)

3. Apply 2-3 drops of oil on needle bar 5 and looper shaft 6 before using the machine or long time unused. (Fig. 23)

Contaminants on oil filter 4 may cause improper lubrication. Check and clean oil filter 4 every six months.

圖 22  
Fig. 22

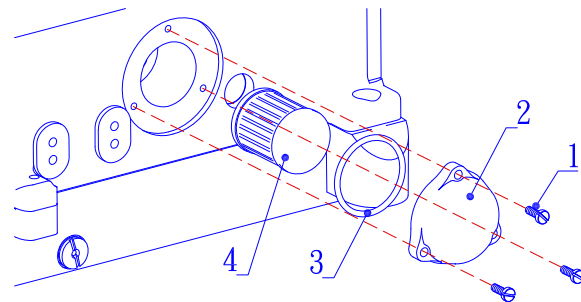
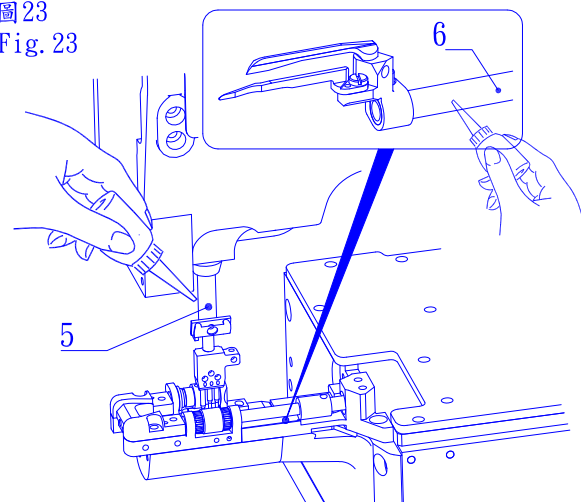


圖 23  
Fig. 23



## 調整提線器及護線片

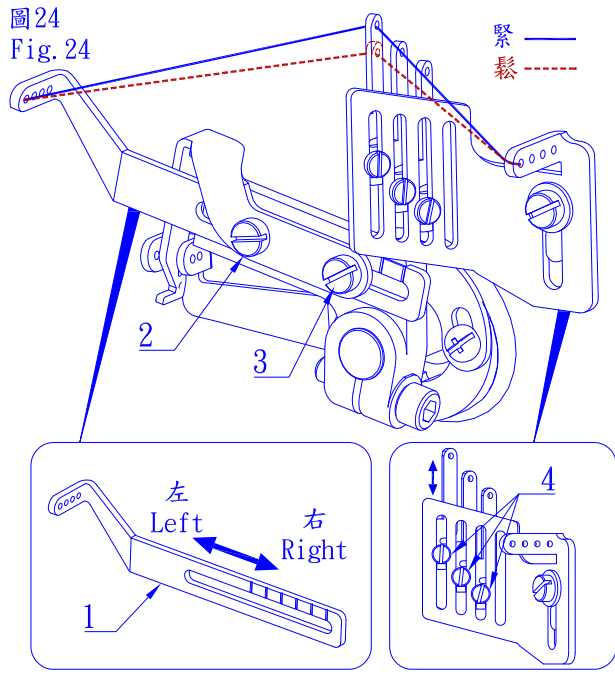
### Adjusting the needle thread take-up and needle thread guard

1. 鬆開螺絲 2、3，調整導線桿 1，給線量多少，往左邊線量多，往右邊線量少。
2. 鬆開螺絲 4 調整線的鬆緊度，往上線的緊度加大，往下緊度變小。

1. Loose screw 2 and 3 to adjust the amount of needle thread. Move the needle thread take-up 1 to left, the amount of the thread is increased. Move it to right, the thread is decreased.

2. Loose screw(s) 4 to adjust the threads tension. Move the thread post upward to increase the tension; move it downward to decrease the tension. (Fig. 24)

圖 24  
Fig. 24



由鬆縫目變換到緊縫目的規格(圖28)  
 Changing the specifications for soft stitches to that for tight stitches (Fig. 28)

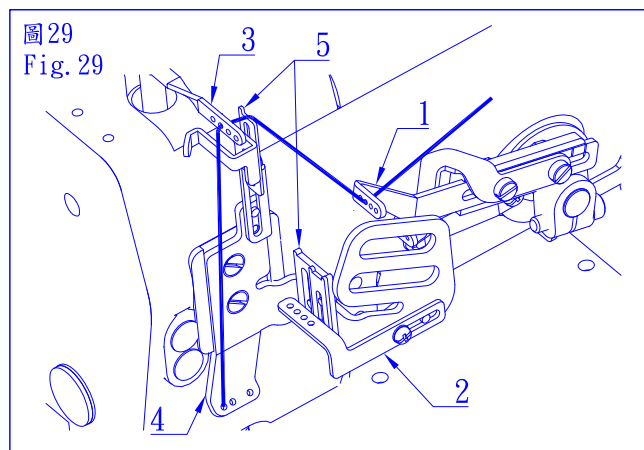
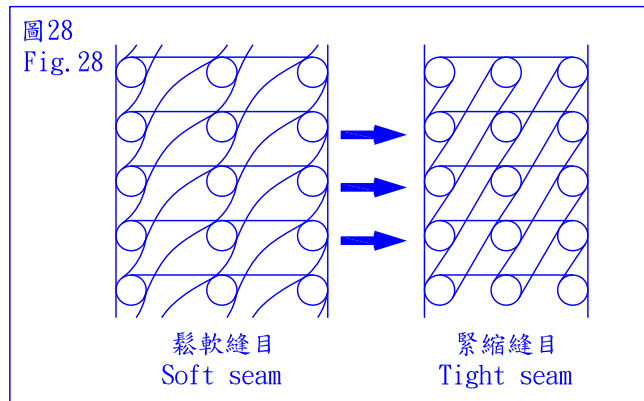
從導線桿 1 往導線片 3 方向穿過經過導線片 4 形成緊縮縫目。(圖29)

- 把導線片 5 調整向上, 可以使線圈尺寸變大.
- 把導線片 5 調整向下, 可以使線圈尺寸變小.

Pass the knots through the eyes of needle thread take-up 1, needle bar thread eyelet 3 and guide plate 4 to produce tight seam.

(Fig. 29)

- \* Turn tension plate 5 upward to increase the size of thread loop.
- \* Turn tension plate 5 downward to decrease the size of thread loop.



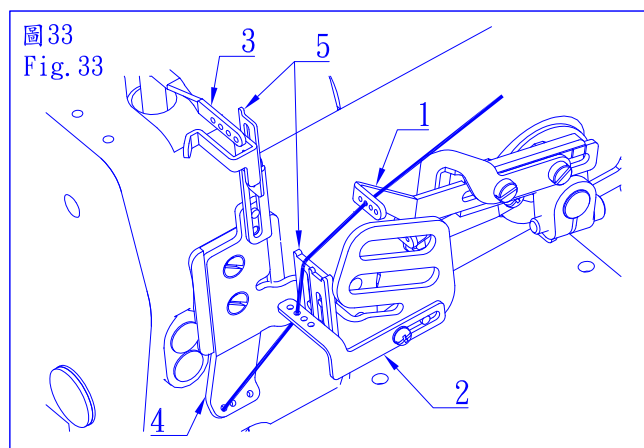
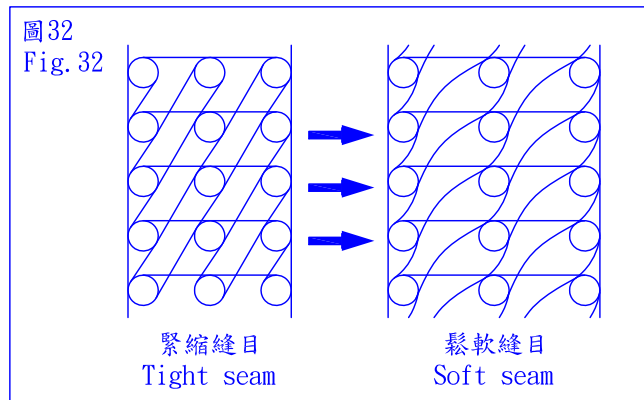
由緊縫目變換到鬆縫目的規格(圖32)  
 Changing the specifications for tight stitches to that for soft stitches (Fig. 32)

從導線桿 1 往導線片 2 方向穿過經過導線片 4 形成鬆軟縫目。(圖33)

- 把導線片 5 調整向上, 可以使線圈尺寸變大.
- 把導線片 5 調整向下, 可以使線圈尺寸變小.

Pass the knots through the eyes of needle thread take-up 1, guide plate 2 and thread guide 4 to produce soft seam (Fig. 33).

- \* Turn tension plate 5 upward to increase the size of thread loop.
- \* Turn tension plate 5 downward to decrease the size of thread loop



### 調整下勾針的提線器

#### Adjusting the looper thread take-up

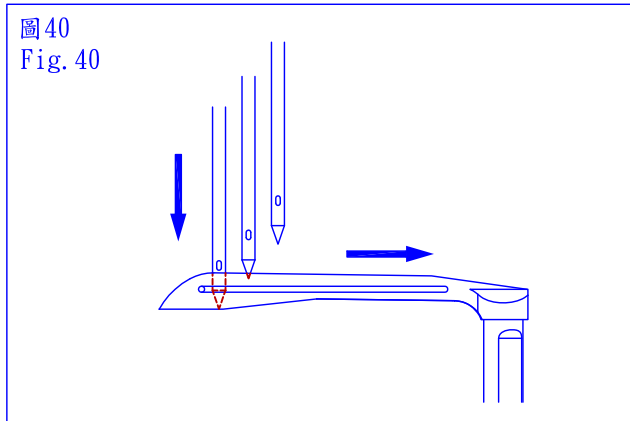
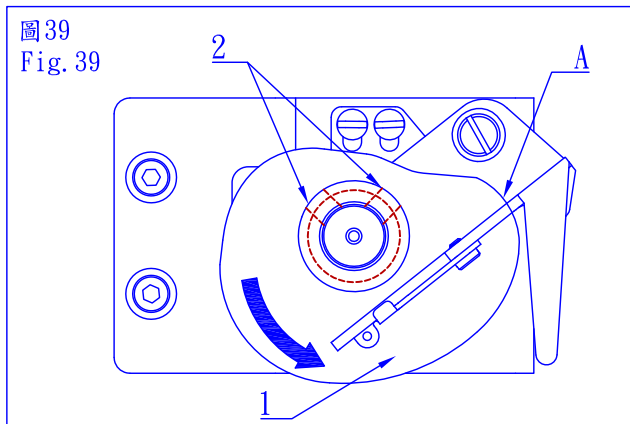
當左針下降而下勾針後退，左針尖點與下勾針下緣對齊時（如圖40），下勾針線從凸輪的 A 點鬆線。

請鬆開螺絲 2 後，旋轉凸輪 1 到所需要的位置，做以上調整後，請鎖緊螺絲 2。（圖39）

當下勾針線從凸輪的 A 點放開的同時，最左針的尖點與下勾針下緣對齊（圖40）

When the left needle has reached the point shown in the illustration while the looper is moving to the right from the extreme left end of its travel, the looper thread should be released from point A on the looper thread take-up. (Fig. 40)

To make this adjustment, loosen screws 2 and turn looper thread take-up 1 as required. After the above adjustment, tighten screw 2. (Fig. 39)



### 調整下勾針線導片

#### Adjusting the looper thread guides

鬆開螺絲 3 和 4，調整這兩個螺絲分別在導片 5 和 6 溝槽中心的位置，然後暫時鎖緊螺絲 3 和 4。

• 移動導片 5 和 6 往 B 的方向可增加下勾針的線量。

• 移動導片 5 和 6 往 C 的方向可減少下勾針的線量。

做以上調整後，鎖緊螺絲 3 和 4。（圖41）

Loosen screws 3 and 4. Center screws 3 and 4 in the slots on looper thread guides 5 and 6 respectively (standard) by adjusting looper thread guides 5 and 6 (see the illustration on the right).

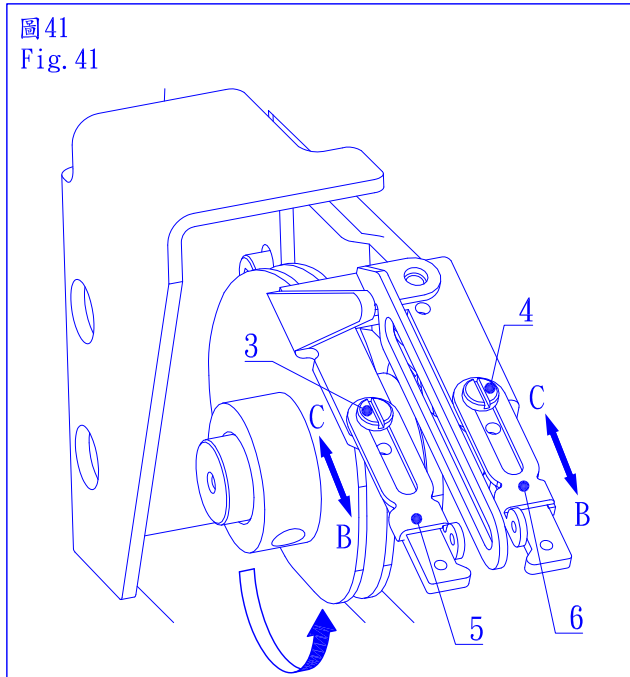
After the adjustment, tighten screws 3 and 4 temporarily.

\* To increase the supply of looper thread, move looper thread guides 5 and 6 in the direction of B.

\* To decrease the supply of looper thread, move looper thread guides 5 and 6 in the direction of C.

After the adjustment is made, tighten screws 3 and 4.

(Fig. 41)



## 調整上飾線 Adjusting the spreader

### 1. 調整上勾針的高度

調整針板表面與上勾針 1 的底面距離 A (圖42), A 的距離請參照 38 頁做調整, 鬆開螺絲 2 以後上下移動上勾針, 調整以後, 暫時鎖緊螺絲 2 .

#### • 調整上勾針前後量:

當上勾針的尖點 B 移動接近左針而上勾針 1 正從右死點往左邊移動時, 尖點 B 與左針的間隙為 0.5mm, 請前後調整上勾針 1, 調整以後, 鎖緊螺絲 2 .(圖43)

#### • 調整上勾針左右量:

當上勾針 1 走到左死點, 最左針的中心點到上勾針尖點 B 的距離為 5.0mm, 請鬆開螺絲 3 及移動上勾針由左到右, 調整好了以後鎖緊螺絲 3 .(圖44)

### 1. To adjust the spreader

#### (1) To adjust the spreader height:

Adjust distance A from the top surface of the needle plate to the bottom surface of spreader 1. Select the distance according to the machine being used by referring to the table of adjustment dimensions (see page 38). Adjustment is made by loosening screw 2 and moving spreader 1 up or down.

After the above adjustment is made, tighten screw 2 temporarily. (Fig. 42)

#### To adjust the spreader front to back :

When point B on the spreader has comes close to the left needle while spreader 1 is moving to the left from the extreme right end of its travel, there should be a distance of 0.5 mm from point B to the left needle. Adjustment is made by moving spreader 1 front to back. After this adjustment is made, tighten screw 2. (Fig. 43)

(Fig. 43)

#### (2) Left-to right adjustment

When spreader 1 is at the extreme left end of its travel, there should be a distance of 5.0 mm from the center line of the left needle to point B on the spreader.

Adjustment is made by loosening screw 3 and moving spreader 1 left to right. After this adjustment is made, tighten screw 3. (Fig. 44)

圖42  
Fig. 42

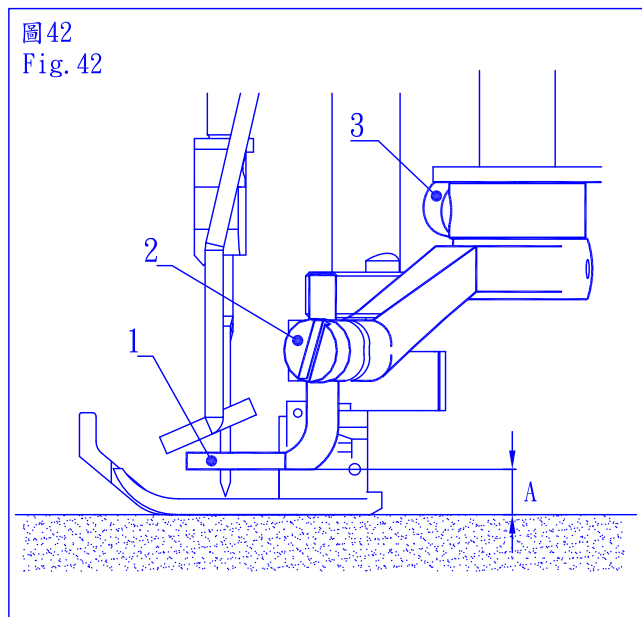


圖43  
Fig. 43

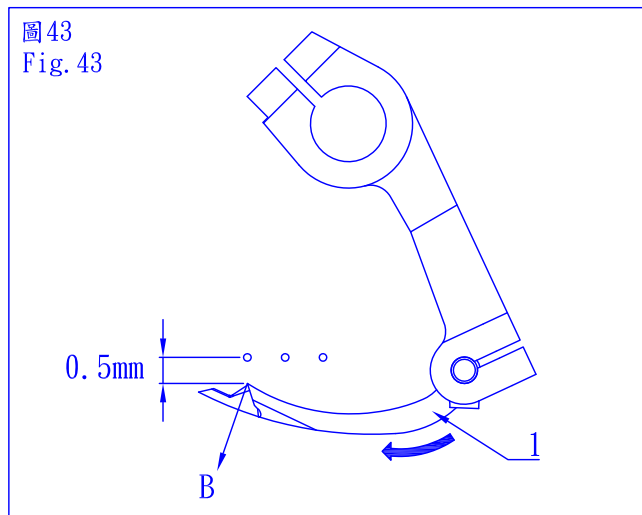
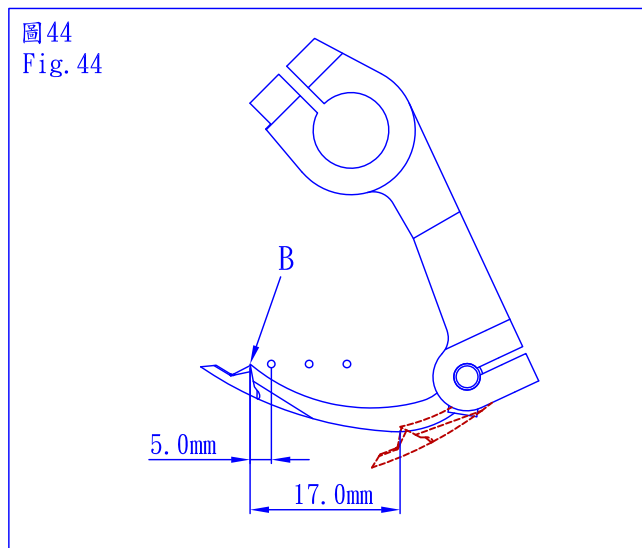


圖44  
Fig. 44



### 2. 調整上勾針導線

- (1) 當上勾針 1 走到右死點上勾針導片 4 的底面與上勾針 1 的間隙為 0.5mm，鬆開螺絲 6，調整後暫時鎖上螺絲 6。
- (2) 由左到右移動上勾針導線 4，調整導線溝槽的中心與上勾針尖點 B 對齊，調整後鎖緊螺絲 6。

### 3. 調整導線片

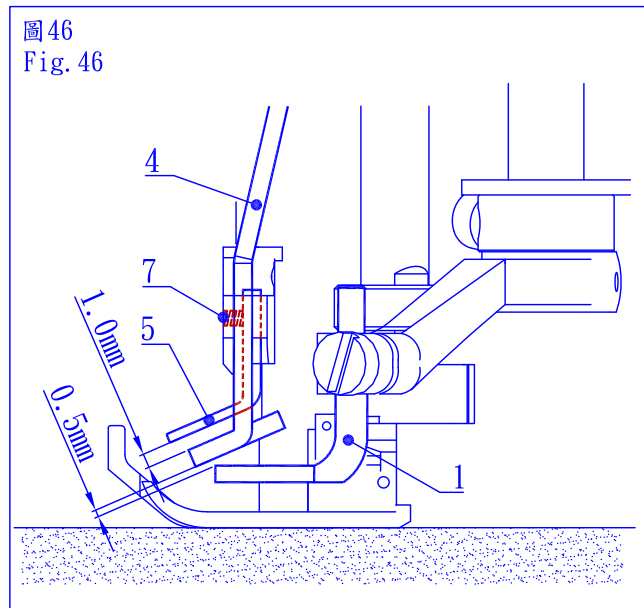
- (1) 當針走到行程的最底部，倒線片 5 剛好在上勾針導線溝槽前端 D 的位置，調整時鬆開螺絲 7，調整後暫時鎖緊螺絲 7。
- (2) 前後移動導線片 5，調整導線片 5 和上勾針導線 4 的間隙 1mm，調整後鎖緊螺絲 7。(圖 46)

### 2. Adjusting the spreader thread guide

- (1) When spreader 1 is at the extreme right end of its travel, there should be a clearance of 0.5 mm between the bottom surface of spreader thread guide 4 and spreader 1. Adjustment is made by loosening screw 6. After this adjustment is made, tighten screw 6 temporarily.
- (2) Align the center of the slot of spreader thread guide 4 with point B on the spreader. Adjustment is made by moving spreader thread guide 4 left to right. After this adjustment is made, tighten screw 6.

### 3. Adjusting the thread guide

- (1) When the needles are at the bottom of their stroke, position thread guide 5 just above front end D of the slot on thread guide 4. Adjustment is made by loosening screw 7. After this adjustment is made, tighten screw 7 temporarily.
- (2) there should be a clearance of 1.0 mm between thread guide 5 and spreader thread guide 4. Adjustment is made by moving thread guide 5 front to back. After this adjustment is made, tighten screw 7. (Fig. 46)



### 調整上飾線導片

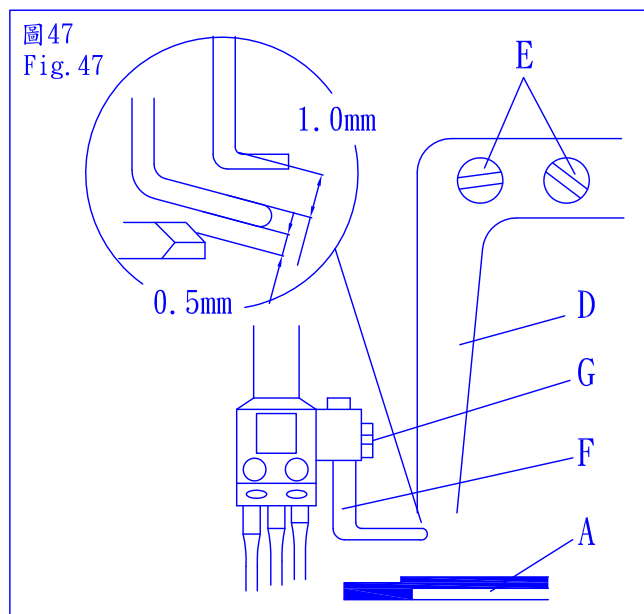
#### Adjusting the top cover thread guide

1. 當勾線針退至最右位置而能平穩的勾住線時，上飾線之導線器 (D) 的下緣與彎針 (A) 的上緣之間的間隙應為 0.5mm。調整完畢後，鎖緊螺絲 (E)。(圖 47)

Provide a clearance of 0.5mm. between undersurface to Top Cover Thread Guide (D) and the top surface of Spreader (A).

At the position, the thread is caught smoothly by thread hooking part when spreader comes to extreme right, tighten screw (E).

( Fig. 47 )



### 調整上送九齒

#### Adjusting the top feed dogs

當上送九齒移動到行程的最底部，針板的表面與九齒的尖點 1 和 2 的距離 A 要大於 0.3mm(依照不同厚度的布料而定)。只要不損壞布料及車縫出完美的縫目 A 的距離足夠就好。

鬆開螺絲 3 和 4 然後向上或向下移動九齒 1 和 2 在這同時九齒 1 在押腳的溝槽裡面且不可與押腳碰撞。

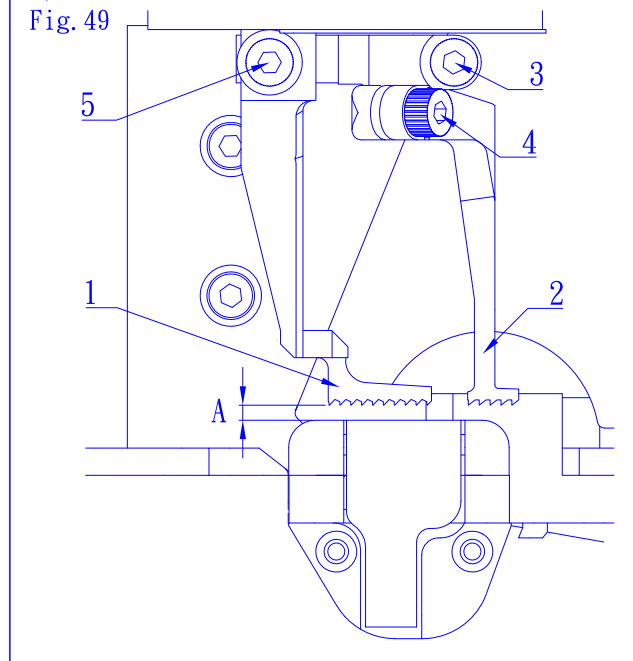
鬆開螺絲 5 作以上調整，調整後鎖緊螺絲 3、4 和 5。(圖 49)

When the top feed dogs are at the bottom of their stroke, the distance A between the top surface of the needle plate and the extended line from the tips of top feed dogs 1 and 2 should be more than 0.3 mm (varies according to the thickness of the fabric). This distance should be as sufficient as possible, in order to feed the fabric properly and obtain uniform stitches with no fabric damage.

This adjustment is made by loosening screws 3 and 4, and then moving top feed dogs 1 and 2 up or down. At the same time, top feed dog 1 should be in the slot on the presser foot without touching the presser foot. This adjustment is made by loosening screw 5. After all these adjustments are made, tighten screws 3, 4 and 5. (Fig. 49)

圖 49

Fig. 49



### 調整上送壓力

#### Adjusting the top feed pressure

上送的壓力要愈輕愈好但要有足夠壓力使送布順暢及車縫出完美的縫目。

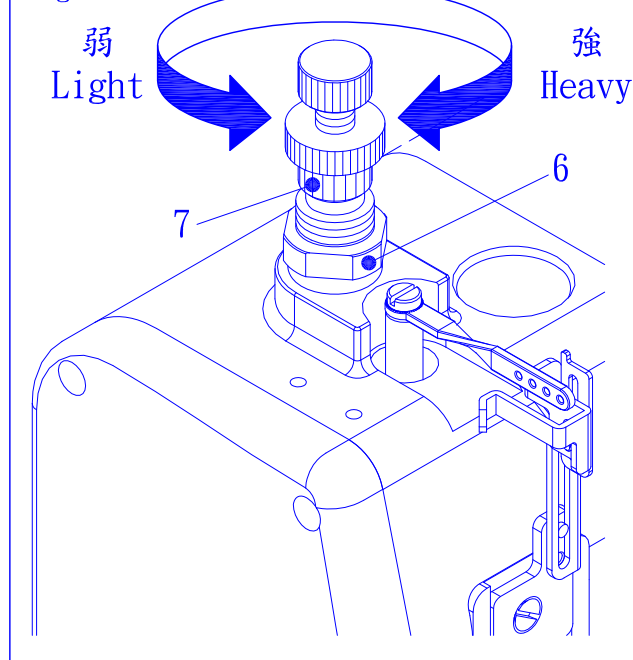
首先鬆開螺母 6 然後旋轉螺絲 7 到所需要壓力，調整後鎖緊螺母 6。(圖 50)

The top feed pressure should be as light as possible, yet sufficient to feed the fabric correctly and provide the uniform stitch.

To adjust the top feed pressure, loosen nut 6 first and then turn screw 7 as required. After this adjustment is made, tighten nut 6. (Fig. 50)

圖 50

Fig. 50



## 調整押腳提昇

### Adjusting the presser foot lift

請參照第 39 頁調整針板表面與押腳底面的距離 A。  
(圖51)

1. 旋轉機器的首輪直到上送九齒在最高點的位置。
  2. 調低提升桿 2 注意押腳不可以碰到上勾針。
- (圖52)

When presser foot 1 is raised, adjust distance A from the top surface of the needle plate to the bottom surface of presser foot. (Fig. 51) Select the distance according to the machine being used by referring to the specifications (see page 39).

1. Turn the machine pulley until the top feed dogs are at the top of their stroke.
2. Adjust the presser foot lift by lowering lever 2.

Note that the presser foot should not be in contact with the spreader.

3. Loosen nut 2. Adjust screw 3 so that it contacts lever 4. Then tighten nut 2. (Fig. 52)

圖51  
Fig. 51

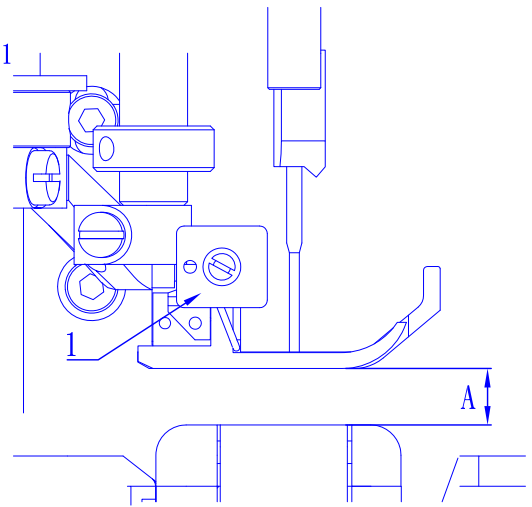
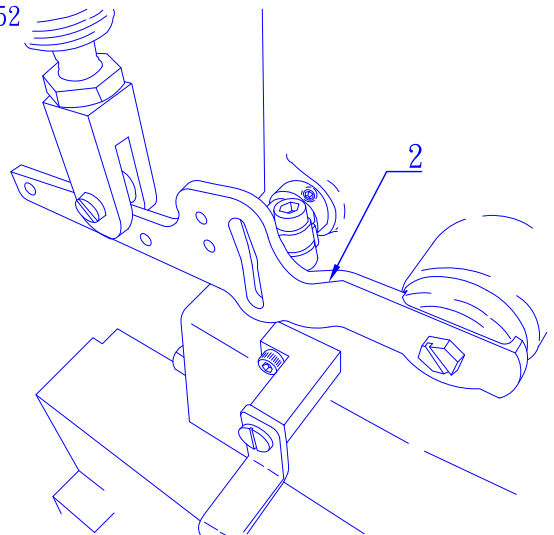


圖52  
Fig. 52



## 調整針的高度 Adjusting the needle height

請參照第 38 頁調整針棒在最高點時左針針尖與針板表面之間的距離 (a)。(圖55)

1. 旋轉手輪 1 使記號 A 與 P 對齊時，針棒在行程的最高點。
2. 鬆開螺絲 2，上下移動針榴 3 (圖54)  
調整正確針棒高度後，每支針與它針孔的間隙 (b) 相同 (圖55)，然後鎖緊螺絲 2。

Adjust distance (a) from the point of the left needle to the top surface of needle plate when the needle is at the top of its stroke. (Fig. 55)

The distance varies according to the machine being used. Refer to the table of adjustment dimensions (see page 38).

1. Turn handwheel 1 and align mark A on the machine with mark P on the handwheel to bring the needle bar to the top of its stroke. (Fig. 53)
2. Loosen screw 2. Adjust the needle height by moving needle holder 3 up or down. (Fig. 54)

\* Adjust the relationship between each needle and needle drop hole so that clearance (b) is equal after the needle height adjustment. (Fig. 54) Then tighten screw 2.

圖53  
Fig. 53

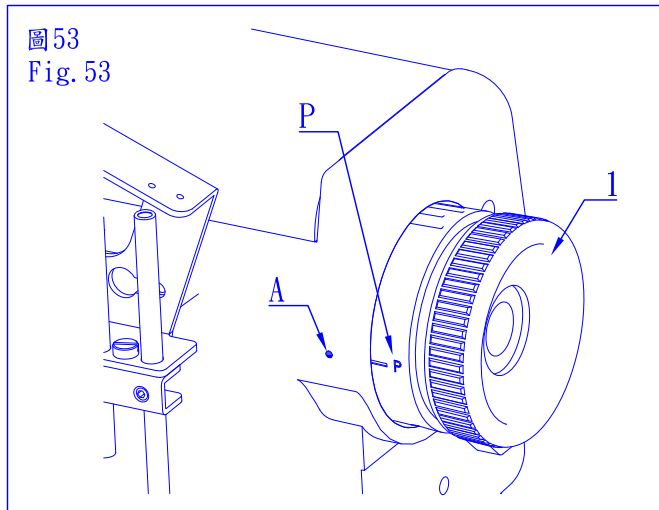


圖54  
Fig. 54

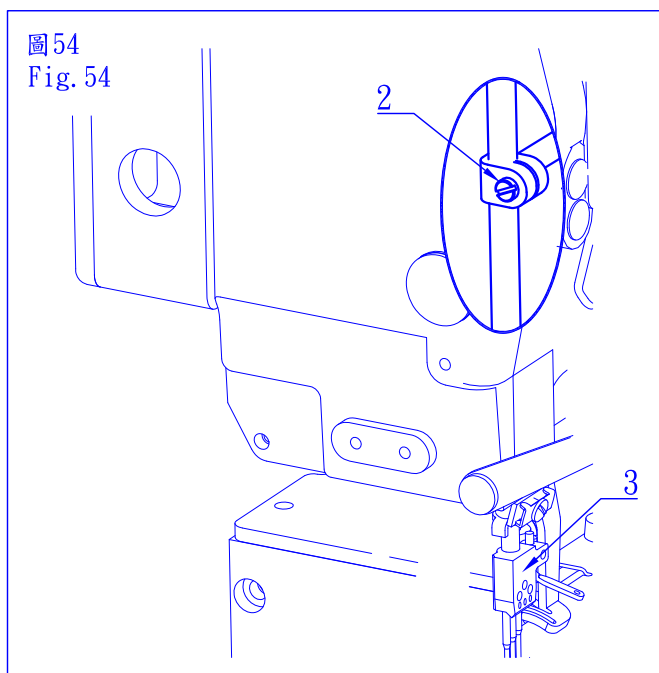
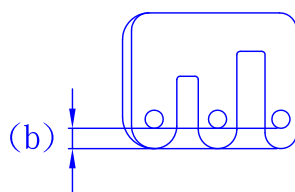
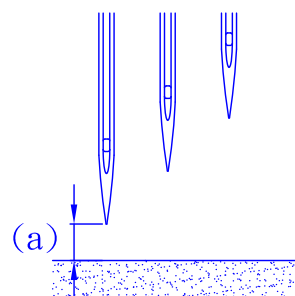


圖55  
Fig. 55

針柱行程: Needle Bar Stroke:	31mm	
規格種類 Needle Gauge	左針高度(mm) Height of Left Needle	退距(mm) From The Back
240	9	3.4~3.6
248	8.6	3
352	8.2	2.8
356	8.2	2.8
360	8	2.4
364	8	2.4
464	8	2.4





## 調整下勾針 Adjusting the looper

### 1. 下勾針的退距

請參照 38 頁調整下勾針移動到右死點針尖與右針中心的距離 A，鬆開下勾針座 2 上面的螺絲 3 然後左右調整下勾針座，調整後鎖緊螺絲 3。(圖57)

### 2. 下勾針與針的間隙

當下勾針從右死點走到右針的中心時，下勾針尖點與右針的前後間隙為 0~0.05mm。(圖58)

### 1. Adjusting the looper-needle setting distance

Adjust looper-needle setting distance A from the center of the right needle to the point of looper 1 when the looper is at its farthest position to the right. Select the distance according to the machine being used by referring to the table of adjustment dimensions (see page 38).

Adjustment is made by loosening screw 3 on looper holder 2 and moving looper holder 2 to the left or right. After the adjustment, tighten screw 3. (Fig. 57)

### 2. Adjusting the looper avoiding distance

When the point of the looper has reached the center of the right needle from the extreme right end of its travel, there should be 0-0.05 mm front-to-back clearance between the right needle and the point of the looper. (Fig. 58)

圖 56  
Fig. 56

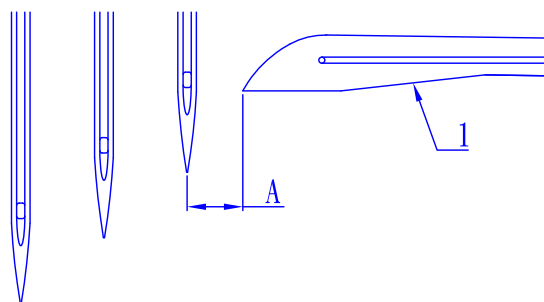


圖 57  
Fig. 57

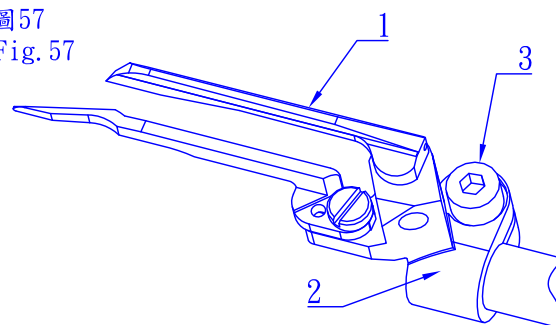
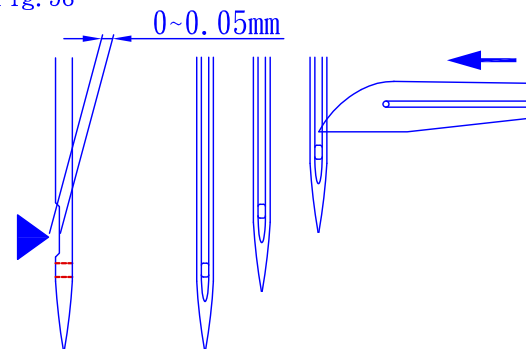


圖 58  
Fig. 58



### 調整頂針片(後)

#### Adjusting the needle guard (rear)

當針走到行程的最底部請安裝後頂針片。  
後頂針片 1 和右針的間隙大約是 0.5mm。  
鬆開螺絲 3。把螺絲起子如圖插入孔 B 然後旋轉主軸 4 前後調整頂針片的間隙。(圖59, 60, 61)

1. Install needle guard (rear) 1 when it is at the bottom of its travel. Loosen screw 2 and bring needle guard (rear) 1 at the bottom of its travel. After this adjustment is made, tighten screw 2.
2. When the needle is at the bottom of its stroke, there should be a clearance of approximately 0.5 mm between the right needle and needle guard (rear) 1. To make this adjustment, loosen screw 3, insert a screwdriver into hole B, and turn shaft 4 of the bracket. Then move needle guard (rear) 1 back and forth. (Fig. 59, 60 & 61)

圖59  
Fig. 59

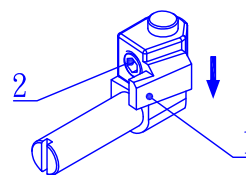


圖60  
Fig. 60

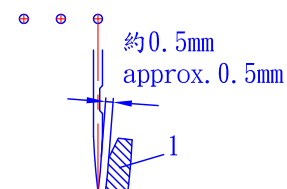
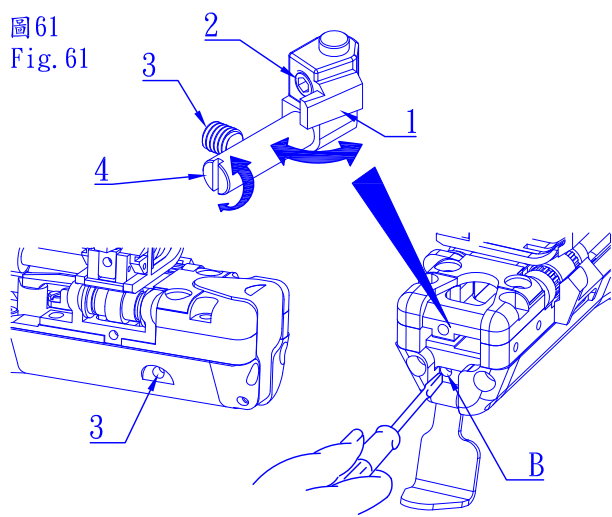


圖61  
Fig. 61



### 調整頂針片(前)

#### Adjusting the needle guard (front)

當下勾針 5 向左移動到右針後側，前頂針片與針的間隙為 0~0.05mm 如圖 62 的 A。

鬆開螺絲 7 後，來回移動前頂針片，調整完成後鎖緊螺絲 7。(圖63)

There should be a clearance of 0-0.05 mm (see A of Fig. 62) between the needles and needle guard (front) 6 when looper 5 is moving to the left in the back side of the needles. To make this adjustment, loosen screw 7 and move needle guard (front) 6 backwards or forwards. Finally, tighten screw 7. (Fig. 63)

圖62  
Fig. 62

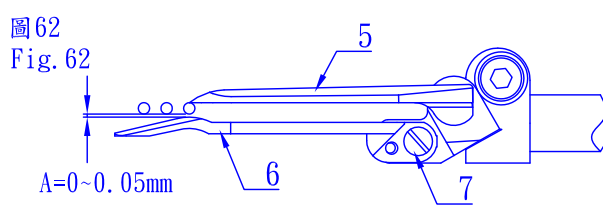
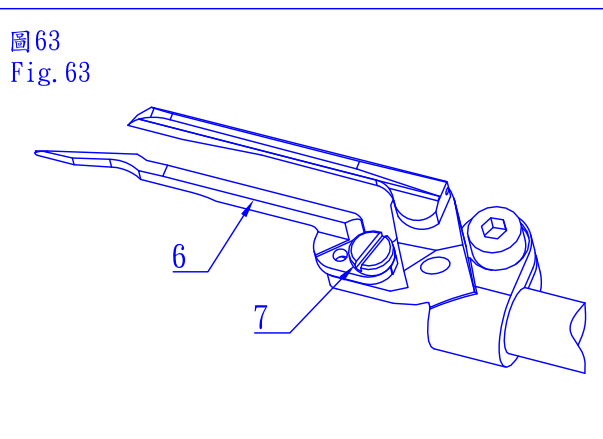


圖63  
Fig. 63



### 變換針棒的行程

#### Changing the needle bar stroke

1. 旋轉連桿 3 的螺絲 4 使平面 A 在最上方或最下方位置來改變針棒的行程。調整針棒標準行程調整連桿 3 的平面 A 在最下方的位置，然後插入凸輪 1 直到溝槽 B 嵌入定位銷 C。(圖65)調整針棒高行程調整連桿 3 的平面 A 在最上面的位置，然後插入凸輪 1 直到溝槽 B 嵌入定位銷 C。(31mm, 33mm)(圖66)
2. 鎖緊螺絲 2 .

1. Loosen screws 2 on motion 1.

Slightly move eccentric 3 in direction of the arrow with a screwdriver until groove B comes out of pin C.

2. To change the needle bar stroke, bring flat surface A to the top or bottom position by turning screw 4 of eccentric 3. (Fig. 65)

(To position the needle bar stroke with standard stroke)

Insert eccentric 3 into the motion with surface A at the bottom position until groove B fits into pin C of the motion.

(To position the needle bar stroke with high stroke)

Insert eccentric 3 into the motion with surface A at the top position until groove B fits into pin C of the motion.

(31mm, 33mm)(Fig. 66)

3. Tighten screws 2.

圖65  
Fig. 65

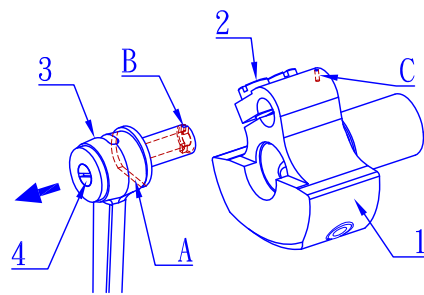


圖66  
Fig. 66

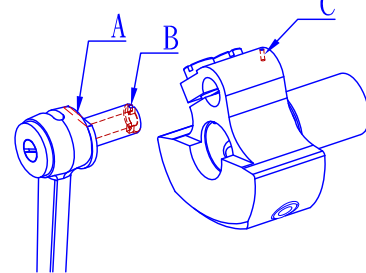
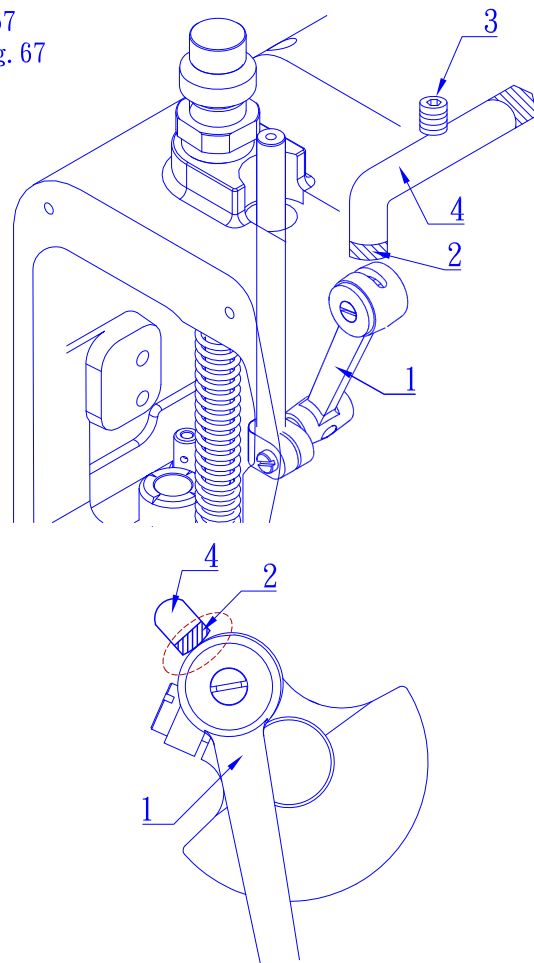


圖67  
Fig. 67



### 檢查針棒連桿與顛墊的接觸

#### Checking the contact between the needle bar link and the oil felt

在變換針棒行程後，旋轉機器手輪特別是從高行程到標準行程，連桿 1 的頂端可輕微碰觸到油棉 2 .

鬆開螺絲 3，調整油管 4 使油棉 2 與連桿 1 輕微碰觸調整完成後，鎖緊螺絲 3。(圖67)

After changing the needle bar stroke, check to make sure that the needle bar link contacts the oil felt properly. Otherwise the machine may not be lubricated sufficiently, causing trouble, such as damage to the machine.

After changing the needle bar stroke, especially from high stroke to standard stroke, check to make sure that needle bar link 1 contact oil felt 2 slightly, while turning the machine pulley by hand. To make this adjustment, loosen screw 3, and position the end of oil tube 4 so that needle bar link 1 contacts oil felt 2 slightly. (Fig. 67)

After this adjustment is made, tighten screw 3. (Fig. 67)

## 變換送料皮帶及輪子

### Changing the feed belts and the rollers

1. 打開側蓋 1，拆下螺絲 2 和筒蓋 3。(圖68)
2. 拆下螺絲 4，提升台押腳的同時往箭頭的方向移動整組滾輪座 5 然後整組拆下來。在此同時請小心不要讓聯接器 6 掉落。(圖69)
3. 拆下螺絲 7 然後拆下蓋子 8。(圖70)
4. 拆下螺絲 9，鬆開後滾輪座 10 的螺絲 11，輕輕地提起針板拖架 12 然後把它拆下。(圖71)

1. Open side cover 1. Remove screw 2 and cylinder bed cover 3. (Fig. 68)
2. Remove screw 4. Move roller base assembly 5 in the direction of arrow while raising the presser foot. Then remove roller base assembly 5. At this time, be sure not to drop coupling joint 6. (Fig. 69)
3. Remove screw 7 and then remove cover 8. (Fig. 70)
4. Remove screws 9. Loosen screw 11 for rear roller base 10. Raise needle plate bracket 12 slightly and then remove the bracket. (Fig. 71)

圖68  
Fig. 68

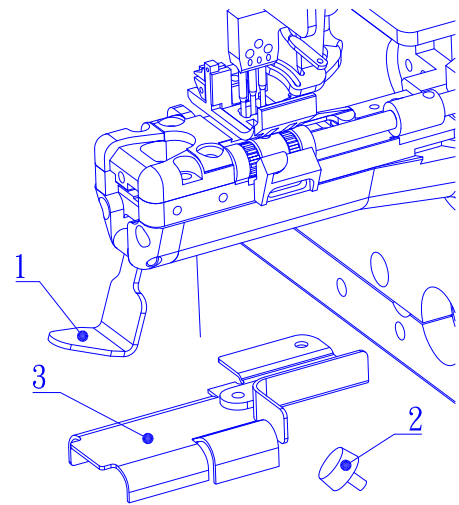


圖69  
Fig. 69

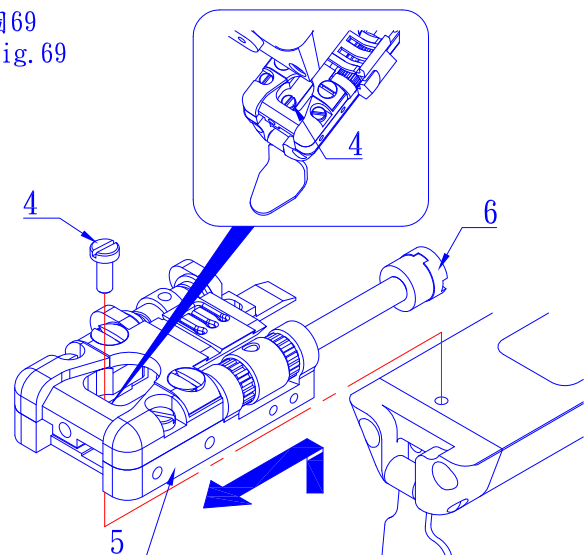


圖71  
Fig. 71

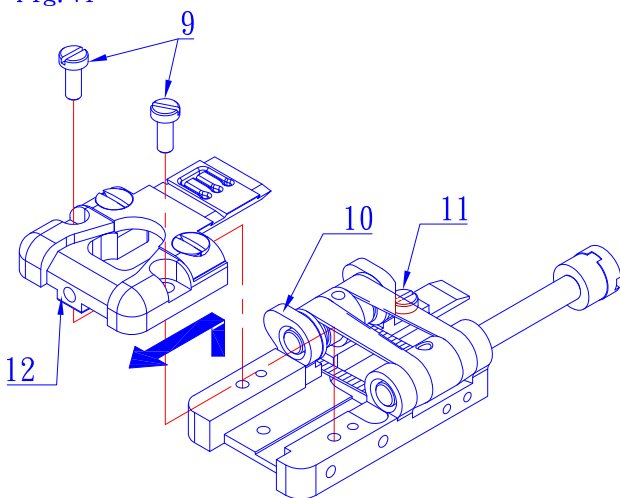
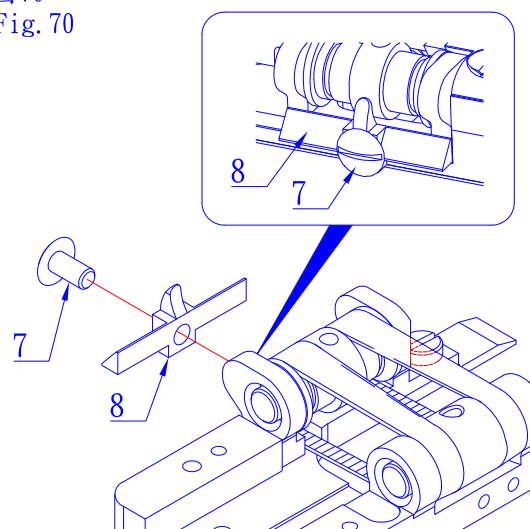
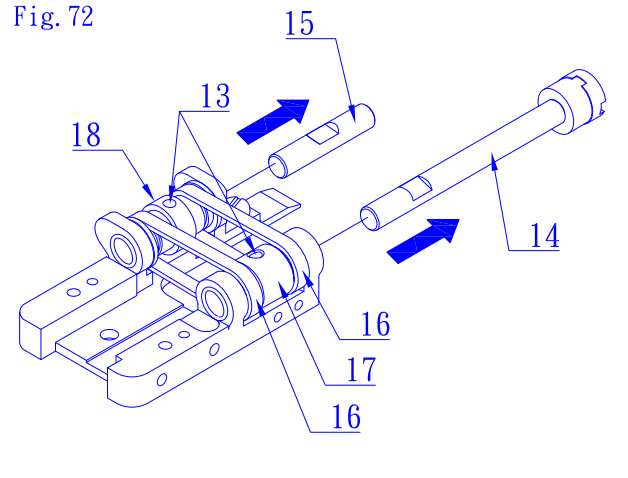


圖70  
Fig. 70



5. 鬆開螺絲 13，拆下主軸 14 和 15。
6. 更換送料皮帶 16 和滾輪 17 和 18，重新把主軸 14 和 15 裝回鎖緊螺絲 13。(圖72)
7. 以上更換完成後，調整送料皮帶的鬆緊度。(圖73)  
調整送料皮帶的鬆緊度。  
鬆開螺絲 11，調整送料皮帶所需要的鬆緊度，送料皮帶不可鬆脫且可平順運轉。  
調整以後，鎖緊螺絲 11。(圖73)
8. 依照以下拆下各零件的順序再重新安裝回去。(圖74)

圖72  
Fig. 72



5. Loosen screws 13. Remove shafts 14 and 15.
6. Change feed belts 16 and rollers 17 and 18. Reinstall shafts 14 and 15. Tighten screws 13. (Fig. 72)
7. With the feed belts and the rollers reinstalled in position, adjust the feed belt tension. (Fig. 73)  
[ Adjusting the feed belt tension]  
Loosen screw 11 to adjust the feed belt tension as required. Check the feed belt tension to make sure that the feed belts turn smoothly without flapping. After this adjustment is made, tighten screw 11.(Fig. 73)
8. Reinstall all the parts by reversing the removal procedure stated above. (Fig. 74)

圖73  
Fig. 73

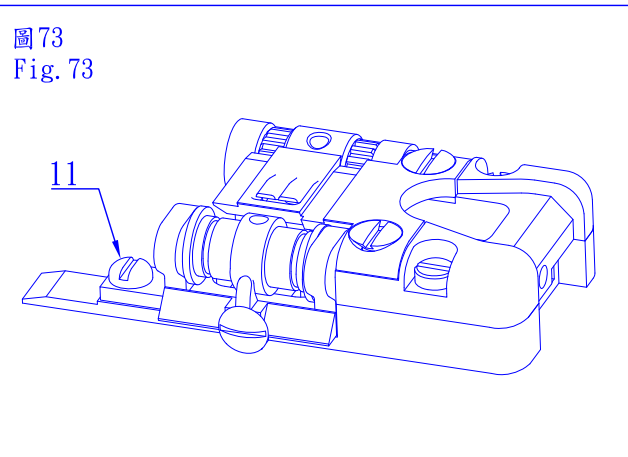
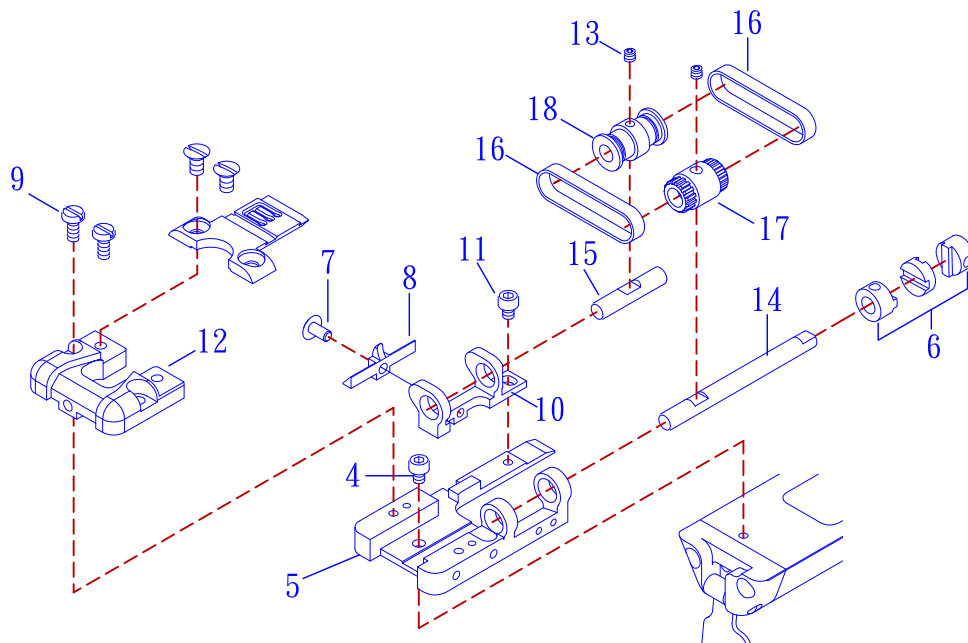


圖74  
Fig. 74



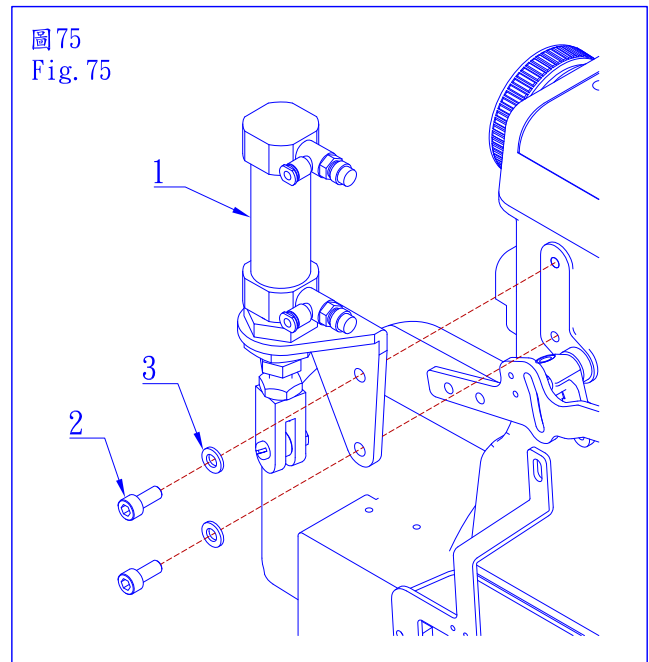
### 安裝氣動式抬押腳

### Installing the pneumatic presser foot lift

用螺絲 2、墊片 3 把氣缸裝到機器上。  
(圖75)

Install air cylinder 1 to the machine with screws 2, spring washers 3. (Fig. 75)

圖 75  
Fig. 75



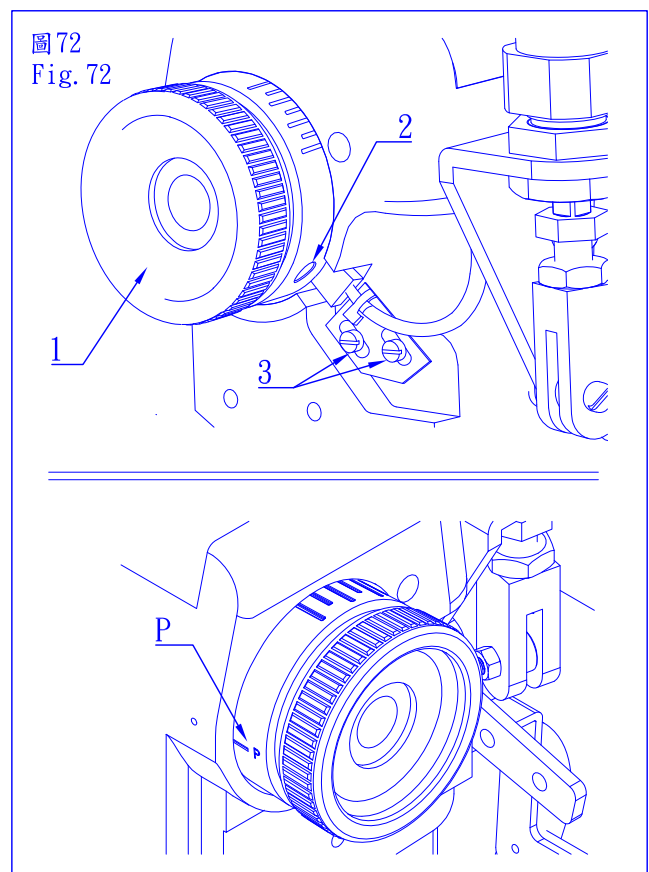
### 安裝定位器

### Installing the position detector

1. 放鬆手輪 1 上的兩顆螺絲 2，再將手輪 1 拆下。
2. 安裝定位器，調整與手輪上磁鐵對齊，鎖緊螺絲 3。
3. 測試定位器 P 點位置，是否針棒上死點有差異放鬆手輪螺絲 2 做調整。

1. Loose the two screws 2 and remove handwheel 1.
2. Install the Synchronizer. The Synchronizer should align with the magnet on the handwheel 1.
3. Adjust the alignment of point P with the top end of the needle bar by adjusting the two screws 2 of handweel 1.

圖 72  
Fig. 72



### 氣動式上切刀風管的連接

### Connecting air lines for the pneumatic AST (Pneumatic top cover thread wiper)

請參照圖 80 連接風管及接頭。

注意

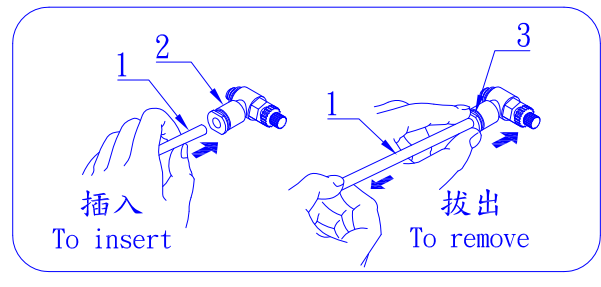
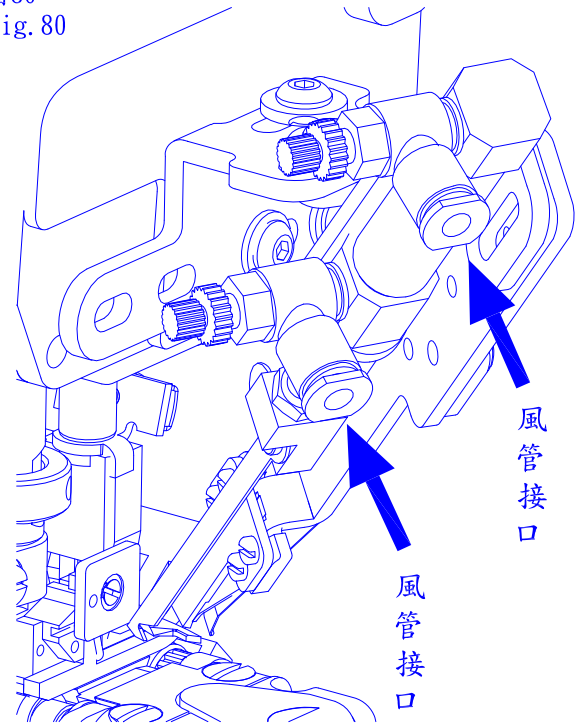
- 把風管 1 完成地插到接頭 2 的底部，並且檢查風管不能用手拉出。
- 壓鬆開圈 3 往接頭 2 的方向可以把風管 1 拉出。

Connect air tubes and air hoses by referring to Fig. 80.

Note:

- \* Insert the air tube 1 completely to the depth of the joint 2.
- And check if the air tube cannot be removed by pulling it by hand.
- \* to remove the air tube 1 from the joint 2, push the release ring 3 toward the joint 2 and pull out the air tube 1. (Fig. 80)

圖80  
Fig. 80



## 調整氣壓

### Adjusting air pressure

把氣壓表 1 的旋鈕 A 往上拉然後設定壓力再 0.5Mpa (5Kg/cm<sup>2</sup>).

- 旋轉旋鈕 A 順時針方向可增加壓力.
- 旋轉旋鈕 A 逆時針方向可減少壓力.

請定時把氣壓表內的水分排掉以免水份流入氣缸及電磁造成損壞。(圖81)

Pull up knob A on filter regulator 1 until it clicks. Then set the air pressure at 0.5 Mpa (5 kg/cm<sup>2</sup>).

\* To increase the air pressure, turn knob A clockwise.

\* To decrease the air pressure, turn knob A counterclockwise. (Fig. 81)

#### [Draining]

Caution !

The water drainage and air spout out downward.

Drain the filter regulator periodically until the drainage reaches the baffle. Otherwise the water drainage will flow into the solenoid valve and/or the air cylinder, causing trouble.

Drain the filter regulator before the water drainage level reaches baffle 2. To do so, press button 3. (Fig. 81)

## 操作方法

### Operation

1. 後踩腳踏板使抬押腳舉起後把布放入押腳下  
(此時切線還沒有動作.)
2. 前踩腳踏板使機器啟動.
  - 機器的速度可經由前踩來自由控制
  - 當機器停止運轉時, 用手可順暢地旋轉手輪.
3. 再次後踩腳踏板, 切線啟動然後提起抬押腳, 把布從押腳下方取出.  
在切線以後, 後踩腳踏板可輕易地提起或放下抬押腳.  
(圖82)

1. Raise the presser foot by pressing the treadle with heel.  
Position the fabric under the presser foot.
  - \* The thread trimming doesn't work at this time
2. Start the machine by pressing the treadle with toe.
  - \* Machine speed can be adjusted freely by the amount of pressing when you press the treadle with toe.
  - \* The machine pulley can be turned easily with hand while the machine is not running.
3. Press the machine treadle with heel again.  
The AWT or AST thread trimming gets actuated. Then the presser foot is lifted.  
Remove the fabric from the under surface of presser foot.
  - \* After the threads have been trimmed, the presser foot can be easily lifted or lowered by pressing the treadle with heel. (Fig. 82)

圖81  
Fig. 81

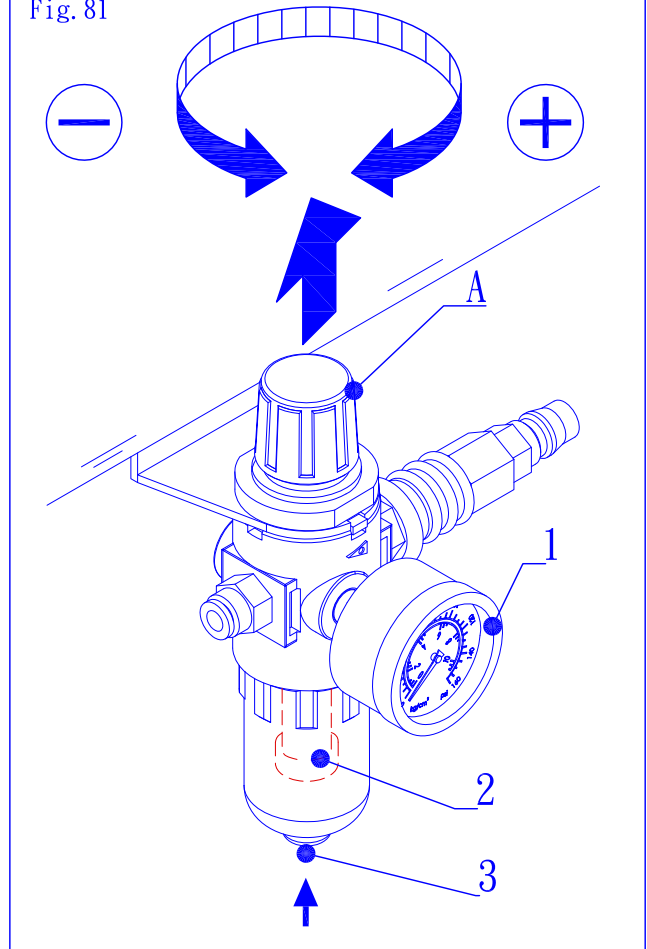
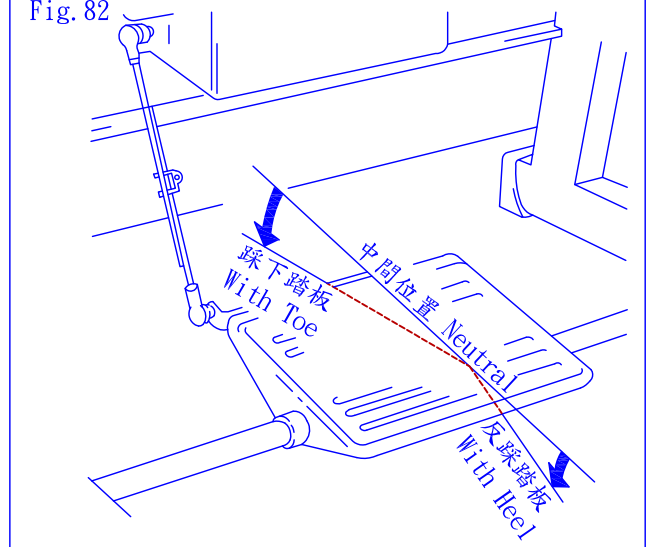


圖82  
Fig. 82





## 調整驅動系統

### Adjusting the driving system

螺絲 2 和螺絲 3 兩中心點的距離為 36mm 是連桿正確的位置，請暫時鎖緊螺母 1 做下切刀的微調。(圖84)

鬆開螺帽 4 用手可輕易地移動驅動桿 5，當移動驅動桿 5 時，請確定針在行程的最高點。(圖85)

#### Caution !

- \* Always turn off the power, shut down the air compressor and then authorized technicians are allowed to adjust the air cylinder assembly, top and under thread trimming system.
- \* To prevent injury to your hands and/or fingers by the cutting edge of the lower knife, great care should be taken when you perform these procedures.
- \* The lower knife and the needle may touch with each other. Be sure to bring the needle to its highest position when adjusting the lower knife.

The distance from the center of screw 2 to that of screw 3 is 36 mm.

Temporarily loose nuts 1 to make a fine adjustment on the lower knife. (Fig.84)

To make a fine adjustment on the knife, loosen screw 4 so that driving lever 5 can be moved easily by hand.

When moving driving lever 5, be sure to bring the needle to the top of its stroke. (Fig. 85)

圖84  
Fig. 84

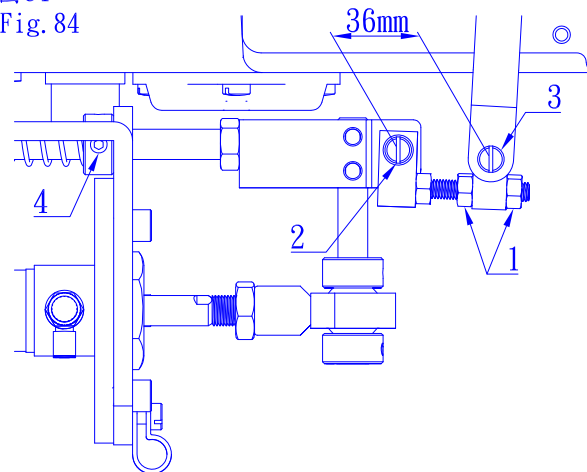
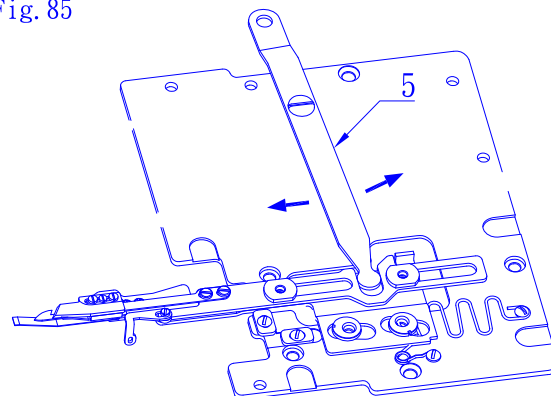


圖85  
Fig. 85



## 調整下切片 Lower knife adjustment

- 避免人員受傷，請務必關閉電源後再做調整。
- 當調整下切片時，請務必把針帶到最高點的位置，才不會造成彼此的碰撞。

### 1. 調整活動刀左右的方向

平行位置調整活動刀 1，固定螺絲 2 的中心點和活動刀的尖點距離為 66mm，鬆開螺絲 2 和 3 調整活動刀 1 到正確位置後再鎖緊螺絲 2 和 3。(圖86)

### 2. 調整活動刀前後的方向

調整活動刀 1 使刀尖的尖點與下勾針右端點的距離為 9mm，並且調整活動刀間點在下勾針 4 背部的中心點，鬆開螺絲 5 並且前後調整下勾針座 6，調整完成後鎖緊螺絲 5 (圖87、88)

### 3. 調整活動刀上下的位置

當活動刀的尖點 A 從左移動到右 9mm 時，活動刀 1 的下緣必須輕輕接觸下勾針 2 的上緣(圖89)鬆開托架 3 上面的螺絲 4，然後上下移動托架 3，調整後鎖緊螺絲 4。(圖90)

### 1. To position the lower knife left and right

Horizontal positioning adjustment of the lower knife 1. The distance between the center of lower knife set screw 2 and tip A of the lower knife should be 66 mm. This adjustment is made by loosening screws 2 and 3, and moving lower knife 1 as required. After this adjustment is made, tighten screws 2 and 3. (Fig. 86)

### 2. To position the lower knife front and back

Position lower knife 1 so that point A of the lower knife is 9 mm past the right end of looper 4 and centered front to back over looper 4. Adjustment is made by loosening screws 5 and moving lower knife holder 6 front or back as required. After this adjustment is made, tighten screws 5. (Fig. 87 & 88)

### 3. Positioning the lower knife up and down

When point A of the lower knife has moved 9 mm to the left from the right end of looper 2, the bottom of looper 1 should slightly contact the top surface of looper 2.(Fig.89) To make this adjustment, loosen screws 4 for bracket 3, and then move bracket 3 up or down. After this adjustment is made, tighten screws 4. (Fig. 90)

圖86  
Fig. 86

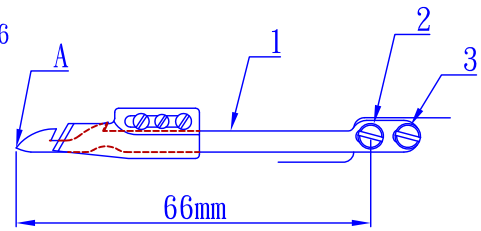


圖87  
Fig. 87

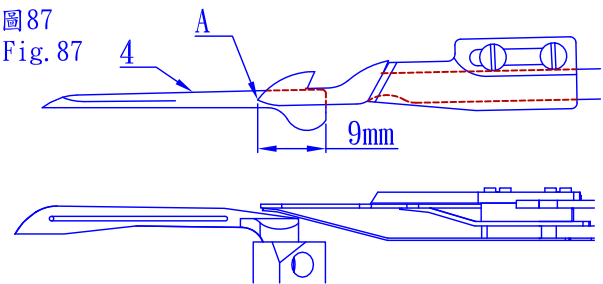


圖88  
Fig. 88

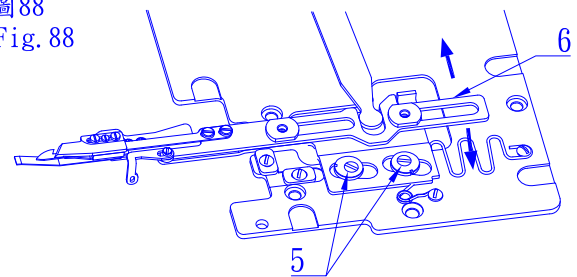


圖89  
Fig. 89

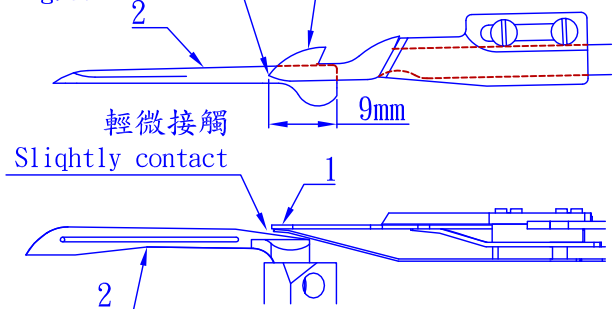
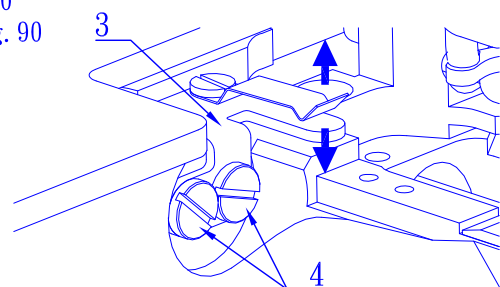


圖90  
Fig. 90



#### 4. 調整活動刀在行程左端點的位置

當活動刀在行程的左死點時，活動刀尖點 A 與針棒中心點的距離為 22mm，請鬆開螺絲 3 調整後鎖緊螺絲 3 以上位置等於下勾針針孔左緣與活動刀尖點 A 對齊。(圖91, 圖92)

#### 5. 確認

以上調整完成後，請做以下確認

- 當活動刀在行程的左死點時，圖 93 的間隙 B 大約是 1mm.
- 當活動刀 1 在行程的右死點時，它的刀座右緣與下切刀基座邊緣的距離 C 大約為12.7mm (圖93)

6. 當氣缸不動作在原點時(圖92)從托架 5 的左緣到氣缸環 4 的右緣間隙大約 1mm. 請鬆開螺絲 6，移動氣缸環 4 到正確的位置後，鎖緊螺絲 6。(圖92)

#### 4. Positioning the lower knife at the extreme left end of its travel

With lower knife 1 at the extreme left end of its travel, point A of the lower knife is positioned 22 mm from the center of the needle bar.

Adjustment is made by loosening nuts 3.

After this adjustment is made, tighten nuts 3.

- \* To check the above easily is to make sure the left end of the looper's eye is aligned with point A of lower knife. (Fig. 91 & 92)

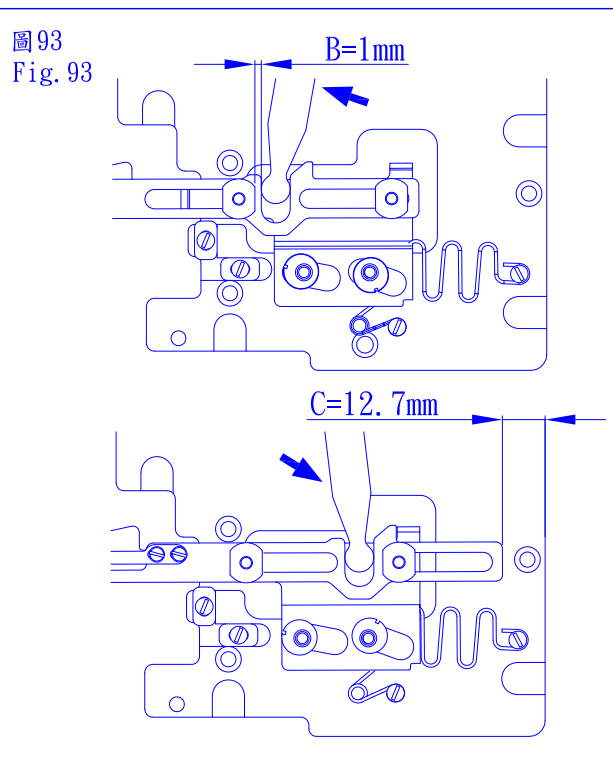
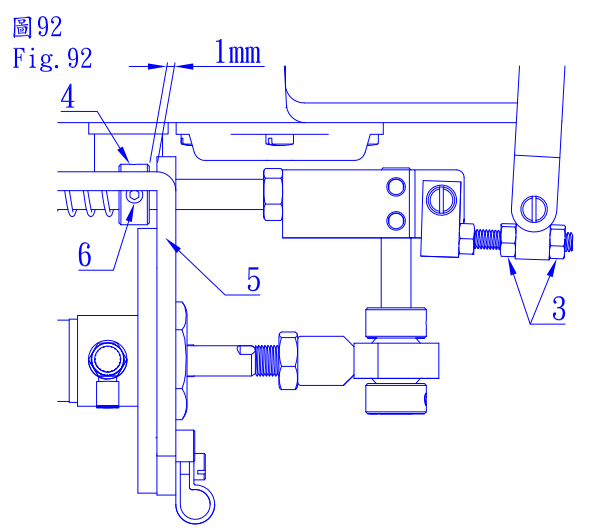
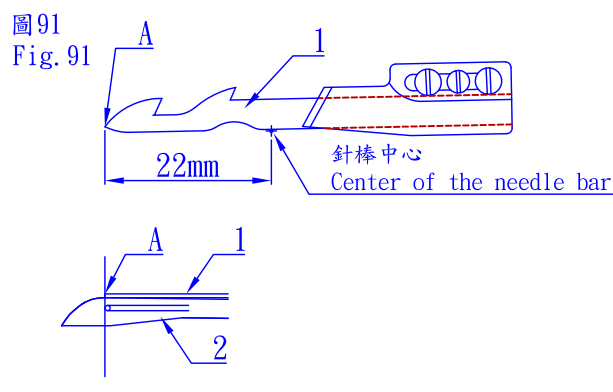
#### 5. Checking

After the above adjustment has been made, check the following.

- \* Distance B is approximately 1 mm with lower knife 1 at the extreme left end of its travel.
- \* Clearance C between the right end of the lower knife holder and the arm bed is approximately 12.7 mm with lower knife 1 at the extreme right end of its travel. (Fig. 93)

#### 6. Position the collar

When the air cylinder is not in operation (see Fig. 92), there should be a distance of 1 mm from the left end of bracket 5 to the right end of collar 4. This adjustment is made by loosening screw 6 and moving collar 4 as required. After this adjustment is made, tighten screw 6. (Fig. 92)



## 調整上切刀片 Upper knife adjustment

當活動刀移動到右死點時，活動刀口 2 與固定刀口 1 有 0.5mm 的嚙合。鬆開固定螺絲 3，前後調整固定刀使刀的尖點 A 與活動刀的前緣對齊(如圖94)。做以上調整的同時，請鬆開夾線彈片，調整夾線鬆緊度。(請看以下說明)調整後，鎖緊螺絲 3。

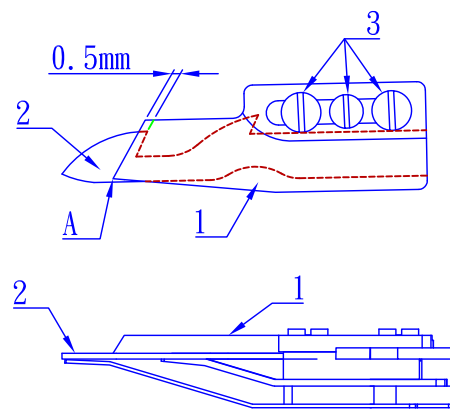
### Caution!

Pay close attention to the knife edges not to injure your hands and/or finger.

This adjustment achieves the correct overlap of upper knife 1 and lower knife 2. There should be 0.5 mm when the lower knife is at the farthest position to the right. To adjust the upper knife front to back, align tip A of the upper knife with the front edge of the lower knife by loosening set screws 3. When making the above adjustment, the lower knife clamp spring can be loosened, adjust the lower knife clamp spring simultaneously.(see the following).

After this adjustment is made, tighten screw 3. (Fig. 94)

圖94  
Fig. 94



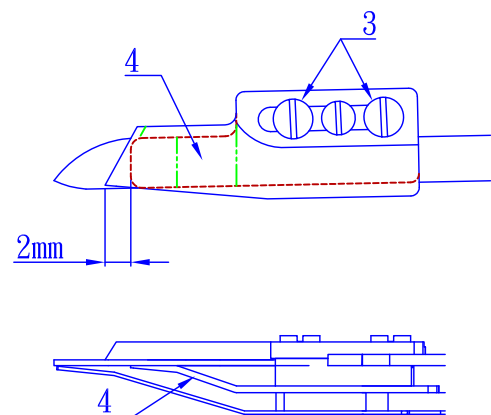
## 調整下切線彈簧片 Lower knife clamp spring adjustment

請依照右圖所示調整夾線彈片 4 與固定刀的尖點 2mm 的間隙。鬆開螺絲 3，前後調整夾線彈片。請確認夾線彈片與活動刀要平行，調整後鎖緊螺絲 3。(圖95)

Position lower knife clamp spring 4 with 2 mm to the right from the tip of the upper knife as shown in the right illustration. Adjust the lower knife clamp spring front to back by loosening set screws 3.

Be sure that the lower knife clamp spring is parallel with the lower knife. After this adjustment is made, tighten screws 3. (Fig. 95)

圖95  
Fig. 95

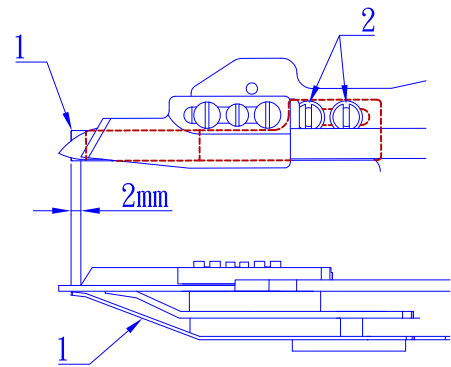


### 下勾針線固定板的調整 Under thread holder adjustment

請依照右圖所示，調整夾線固定片 1 向左與固定刀片尖點的距離為 2mm，鬆開螺絲 2 前後調整夾線固定片。請確認夾線固定片與活動刀平行。調整以上鎖緊螺絲 2。(圖96)

Position under thread holder 1 with 2 mm to the left from the tip of the upper knife as shown in the right illustration. Adjust the under thread holder front to back by loosening set screws 2. Be sure that the looper thread holder is parallel with the lower knife. After this adjustment is made, tighten screw 2. (Fig. 96)

圖96  
Fig. 96



### 下切刀、擋片的調整 Upper knife stopper adjustment

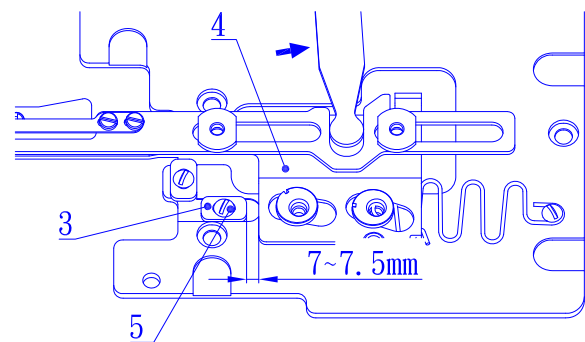
當刀座導片 4 在行程右死點時，刀座導片與固定刀擋片的距離為 7~7.5mm，請鬆開螺絲 5，移動固定刀擋片到正確位置後鎖緊螺絲 5。

- 要減少針線長度請加長這個距離
- 要增加針線長度請縮短這個距離。(圖97)

When knife holder guide 4 is at the extreme right end of its travel, the standard distance between the knife holder guide and upper knife stopper 3 is 7 to 7.5 mm. To make this adjustment, loosen screw 5 and move the upper knife stopper as required. After this adjustment is made, tighten screw 5.

- \* Increasing the clearance reduces the needle thread length.
- \* Decreasing the clearance increases the needle thread length. (Fig. 97)

圖97  
Fig. 97



### 調整夾線彈簧及刀的位置

#### Knife holder guide clamp spring adjustment

當固定刀和活動刀嚙合時，刀座導片彈簧 1 壓住導片 2 在正確位置。

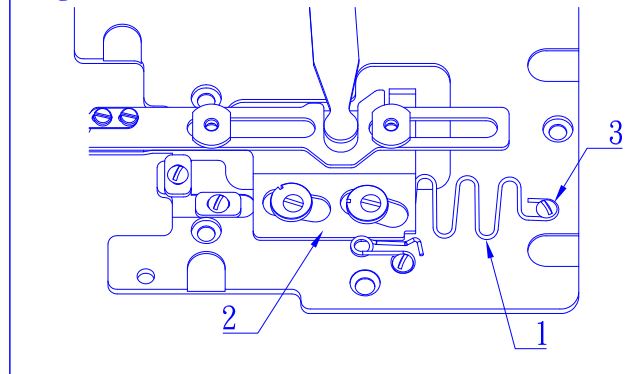
如果固定刀和活動刀不能夠順暢的移動，請鬆開螺絲 3 做調整，然後鎖緊螺絲。

如果彈簧壓力太大，固定刀和活動刀則無法正常地回到原位。(圖98)

Knife holder guide clamp spring 1 presses knife holder guide 2 to keep the upper knife in the position when the upper and lower knives overlap. In the standard setting, screw 3 should be centered in the set slot for spring 1. If the upper knife and lower knives are not activated properly in the standard setting, adjust the spring pressure by loosening screw 3. After this adjustment is made, tighten screw 3.

If the spring pressure is too heavy, the upper and lower knives will not return home correctly. (Fig. 98)

圖98  
Fig. 98



### 切線的調整

#### To position the knives

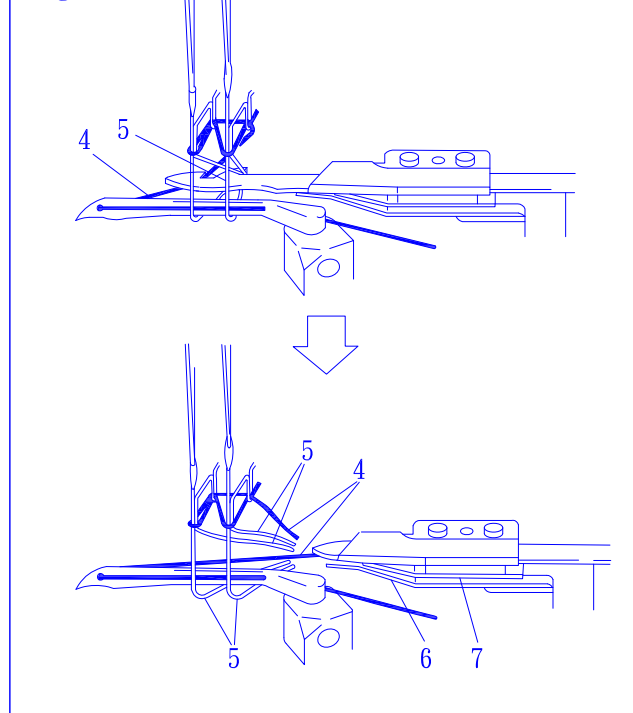
請用伸縮尼龍線測試切線功能。

下勾針線 4 和針線 5 能夠很順暢被切斷並且下勾針線 4 可以被夾線彈片夾住。如果針線無法切斷，請參照 31 頁再一次調整夾線彈片 7。

如果下勾針線無法被夾住，請參照 32 頁再一次調整夾線彈片 6。(圖99)

Check for proper cutting action using woolly threads. Check to see if looper thread 4 and needle thread 5 are smoothly cut, and looper thread 4 is clamped by looper thread clamp spring 6. If the thread are not smoothly cut, adjust flat spring 7 again by referring to page 31. If the looper thread is not clamped, adjust looper thread clamp spring 6 again by referring to page 32. (Fig.99)

圖99  
Fig. 99



### 調整氣動式撥線裝置

#### Adjusting the pneumatic needle thread wiper (air wiper)

當針棒在最高點時，調整吹氣孔 A 在左針針孔下緣 1~2mm 位置，調整最左針中心點到吹氣孔中心點的距離 B 約為 0.5~1.5mm，吹氣的角度 C 約為 0°~5°，鬆開螺絲 1 移動撥線器 2，調整後鎖緊螺絲 1。(圖100 & 圖101)

When the needle is at the highest position, set the opening A of the air wiper 1-2 mm below the eye of the left needle. Distance B from the center of the left needle to the air wiper on the backside of the needle should be 0.5-1.5 mm. Blowing angle C should be 0-5°. Adjustment is made by loosening screw 1 and moving air wiper 2. After this adjustment is made, tighten screw 1. (Fig. 100 & Fig. 101)

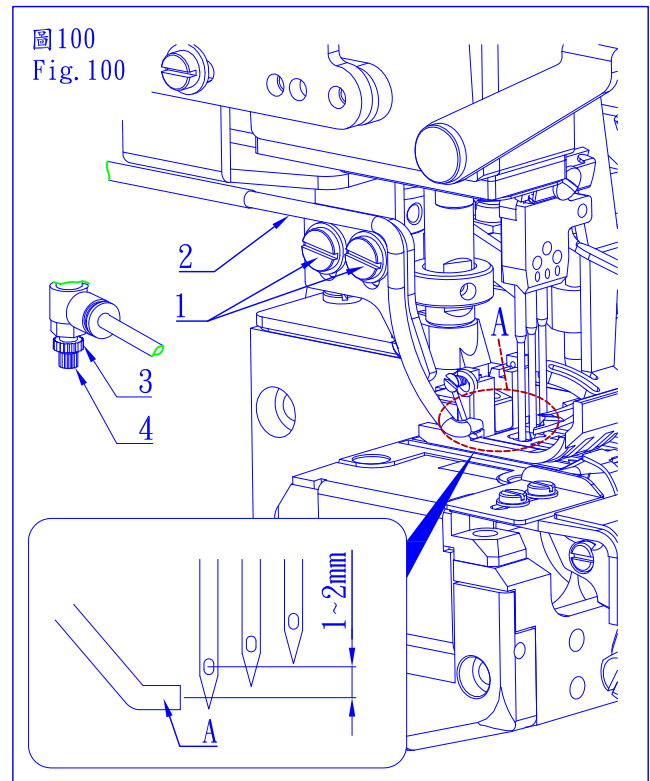


圖101  
Fig. 101

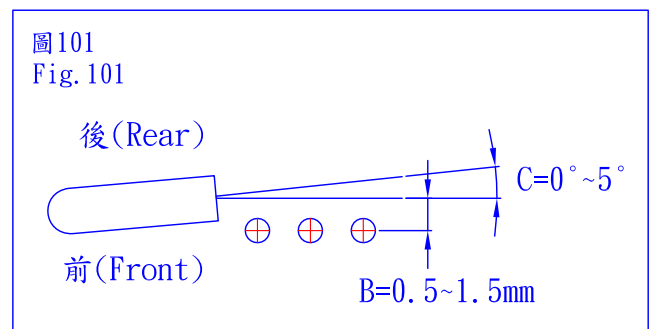
### 調整撥線器的風量

#### [ To adjust the amount of air from the air wiper ]

風量要能吹到線頭不會殘留在下一片車縫布上面。鬆開螺母 3，旋轉螺絲 4 到所需要風量後鎖緊螺母 3。

- 往順時針方向旋轉螺絲 4 可減少風量。
  - 往逆時針方向旋轉螺絲 4 可增加風量。
- (圖100)

The air should be the extent to which the trailing end of trimmed needle threads can be removed from the next fabric. Loosen nut 3. After this adjustment, tighten nut 3.  
\*To decrease the amount of air, turn screw 4 clockwise.  
\*To increase the amount of air, turn screw 4 counterclockwise. (Fig. 100)



**調整氣動式上切刀**  
**Adjusting the pneumatic top cover thread trimmer**

1. 當上切刀伸出後，其刀勾 1 要在上飾線 2 上面。  
 (如圖102所示)請鬆開螺絲 3 前後調整切刀，調整後鎖緊螺絲 3。(圖102)
2. 請參照(圖103)調整上切刀刀勾，上勾針和最左針相對的距離。請前後移動螺絲 3 及左右移動螺絲 6 和上下移動螺絲 7 做調整。調整後鎖緊螺絲 3、6、7。

**Caution !**

Pay close attention to the knife edges not to injure your hands and/or finger.

1. When hook 1 protrudes, point A should be positioned above top cover thread 2 (see the illustration). Adjustment is made by front-to-back positioning screw 3. After this adjustment is made, tighten screw 3. (Fig. 102)
2. Adjust hook, spreader 4 and left needle 5 by referring to the Fig. 103. Adjustment is made by turning front-to-back positioning screw 3, left-to-right positioning screws 6 and up-and-down positioning screw 7. After this adjustment is made, tighten screws 3, 6, 7.

圖102  
 Fig. 102

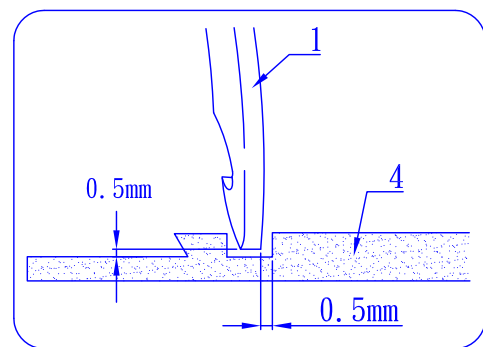
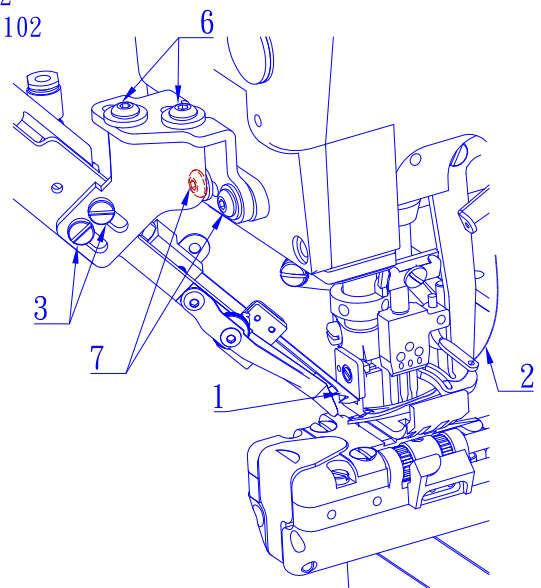
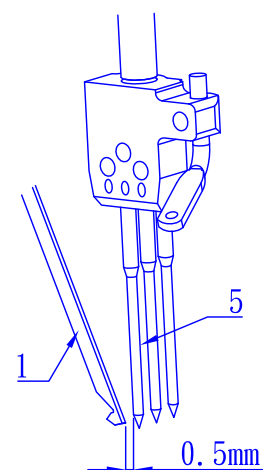


圖103  
 Fig. 103





## 調整鬆線器

### Adjusting the thread releaser

1. 調整鬆線棒的主軸 4 使鬆線盤 2 與鬆線指 3 的間隙為 0.2-0.5mm 然後鎖緊螺絲 1 .

(圖104、105)

2. 調整導桿 5 使 A 的距離為 38.5mm , 然後鎖緊螺絲 .

(圖105)

• 每一根針線的鬆線量依照導線塊 7 和鬆線器 8 的關係做調整, 如圖105 . 棉線: B=13mm , C=11mm , D=7mm , E=14mm , F=6mm , 但伸縮尼龍線從 B 到 F 的距離則要縮短一點 .

• 機器不裝上切刀時

調整上飾線鬆線器 9 , 當針線和下勾針線被放鬆時, 才不到被影響 .

• 機器裝上切刀時

調整 E 的距離為 14mm .

首先鬆開螺絲 10 調整鬆線量 .

• 上升提線器 11 可減少線量 .

• 下降提線器 11 可增加線量 .

調整以後鎖緊螺絲 10 . (圖106)

1. Loosen screw 1. Adjust bar shaft 4 to set a clearance of 0.2-0.5 mm between the thread tension disks 2 and fingers on thread releaser 3. Then tighten screw 1. (Fig. 104 & 105)

2. Adjust shaft 5 to obtain distance A (=38.5 mm). After this adjustment is made, tighten screws 6. (Fig. 105)

\* The releasing amount of each thread is made by the relationship between thread guides 7 and thread releasers 8. Cotton threads: B=13 mm, C=11 mm, D=7 mm, E=14 mm, F=6 mm for stretchable threads, such as woolly threads, all the distances above from B to F should be slightly shortened.

\* Without top cover thread trimmer

Position thread releaser 9 ( for top cover thread ) so that the top cover thread will not be affected if needle and looper threads are loosened.

\* With top cover thread trimmer Set E at 14 mm.

To adjust the releasing amount, loosen screw 10 first.

\* To decrease the amount, raise thread take-up 11.

\* To increase the amount, lower thread take-up 11.

After this adjustment is made, tighten screws 10.

(Fig. 106)

圖104  
Fig. 104

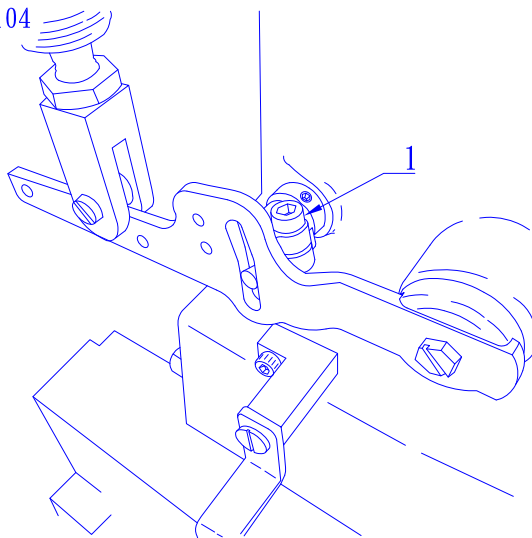


圖105  
Fig. 105

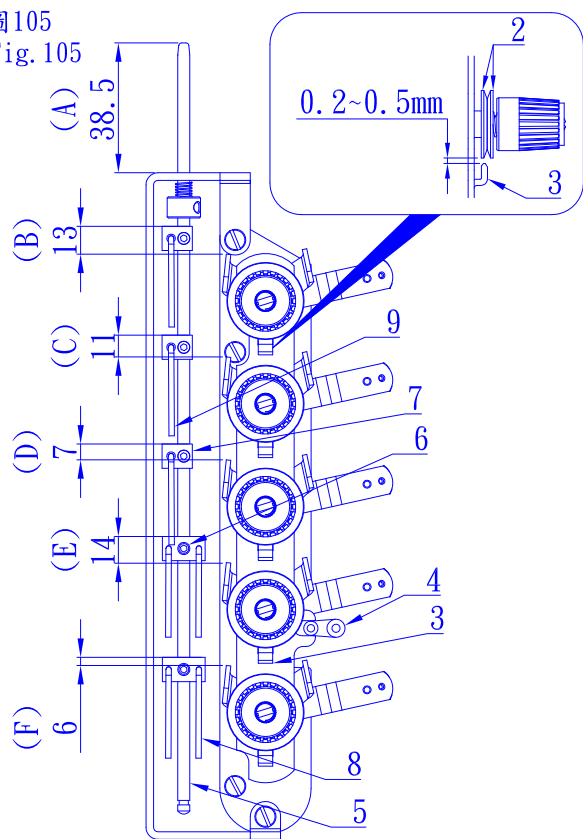
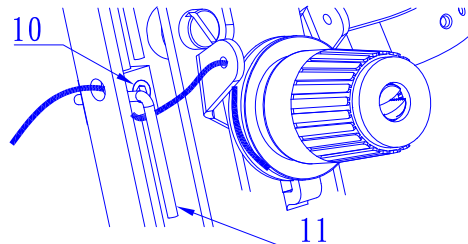


圖106  
Fig. 106



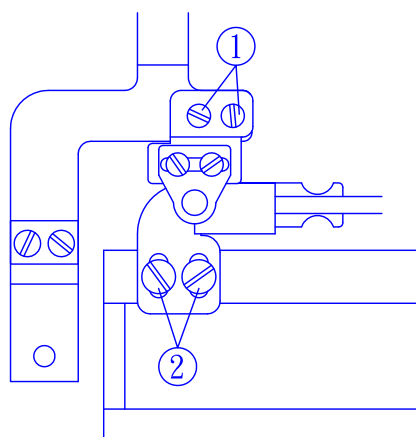
## 調整安全開關 Adjusting the safety switch

- (1) 鬆開螺絲 1 和 2 .
- (2) 當下切刀回到原點的位置時把微動開關打開到 ON .
- (3) 鎖緊螺絲 1 和 2 .

(圖107)

1. Loosen screw 1 and 2.
2. When moveable knife returning to the home position, turn on safety switch.
3. Tighten screw 1 and 2. (Fig. 107)

圖107  
Fig. 107





VG-999ES 規格表  
VG-999ES Series subclass specifications

用途 Application	型號 Subclass	針數 Number of needles	線數 Number of threads	針距(mm) Needle space(mm)	主齒最大運動量 Max. main feed dog's movement amount (mm)	上送前後運動量 Amount of top feed dog front-to-back movement (mm)
壓骨 Covering	VG-999ES-03F 立骨	3	5	5.6	3.2	1.0~2.5
	VG-999ES-03G 倒骨	3	5	5.6	3.2	1.0~2.5
折下擺 Hemming	VG-999ES-08A 折下擺	2	4	4, 4.8	3.2	1.0~2.5
		3	5	5.6, 6.4	3.2	1.0~2.5

用途 Application	上送上下運動量 Amount of top feed dog up-and-down movement (mm)	壓腳提升高度 Presser foot lift (mm)	最高迴轉數 Max. speed (r. p. m)	備考 Remarks
壓骨 Covering	標準 Standard 4.0	4.5	4000	
		4.5	4000	
折下擺 Hemming	最大 Max. 5.0	4.5	4000	
		4.5	4000	

縫目形式 Stitch type	602, 605	車頭淨重 Net weight (head only)	48 Kg
使用針 Needle size	UY128GAS#9S UY128GAS#10S	車頭加附屬配件總重量 Gross weight (with accessories)	60 Kg
車頭尺寸(WxDxH) Machine size (WxDxH)	W:430mm D:340mm H:460mm	噪音值 Working noise level	n=3, 600rpm: LpA ≤ 78.4dB DIN 45635 48A-1 Noise measurement according to DIN 45635 48A-1



