



特別事項 WARNING

- 為了避免機器故障及損壞，請先確定以下事項：
- 當您安裝好機器後，做第一次機器操作前，請徹底清潔機器。
 - 清除運送途中累積之灰塵及溢出的油垢。
 - 確定電壓及馬達相數(單相或三相)安裝正確。
 - 確定電源插頭正確地接上電源。
 - 當使用電壓與標示電壓不同時，請勿使用機器。
 - 確定機器轉動方向是否正確。
- Please confirm the followings to avoid malfunction or damage to this machine.
- After installing the machine, and before the first operation, please clean it completely.
 - Clean all dust and overflowed oil during transportation.
 - Confirm that the voltage and the phase (single or 3 phase) of motor are set correctly.
 - Confirm that the power plug is correctly connected to the power supply.
 - Never use the machine when the local voltage type is different from the marked voltage on the nametag attached on the machine.
 - Confirm that the rotating direction of the machine pulley is correct.

警告 WARNING

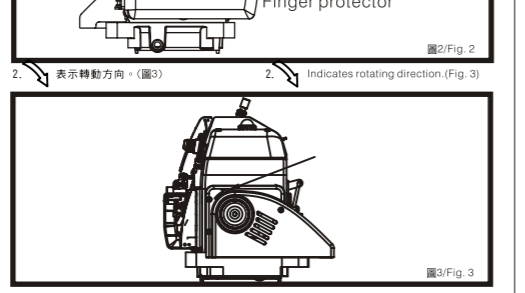
在操作或調整本書中所提到之各步驟前，請先將電源關閉，以免因為機器突然啟動造成之意外。

Before doing any operation or any adjustment described later in this manual, please turn the power off to prevent accidents caused by abrupt start of the sewing machine.

警告標籤 WARNING TAG

1. 安全防護裝置(圖2)
2. 表示轉動方向。(圖3)

T. Safety protection device (Fig. 2)
2. Indicates rotating direction. (Fig. 3)



搬運縫紉機 MOVING THE SEWING MACHINE

縫紉機之搬運(圖5)
1. 應按圖示用左手托住前機殼本體，右手撐扶住底盤進行搬運。

Moving the sewing machine (Fig. 5)
1. To move the sewing machine, please follow the figure shows. Using left hand to hold the front machine cover body, and right hand to hold the bottom plate to move.



- 勿將該縫紉機置於設備附近，如電視機、收音機或無線電話等，否則這些設備可能被縫紉機的電子干擾所影響。(圖6)
 - 應將縫紉機直接插入AC電源插座，如果使用延長線，可能會造成操作故障。(圖7)
- Please do not install the sewing machine near the equipments, such as Television, Radio, or Wireless Telephone. Or these equipments will experience electronic interference. (Fig. 6)
- The wire should insert to the AC power socket directly. If using the extension wire, this might cause malfunction. (Fig. 7)

規格 SPECIFICATION

1. 外銷型號分類 1. Description

747 K - 514 M 2 - 2 4 CT

① 表示線數 分3T、4T、5T、6T
② 機種別

① Thread numbers Four types: 737, 747, 757, 767
② Machine type

內銷型號分類 Description

989 - 4T - 514 M 2 - 2 4 CT

① 機種別
② 表示線數 分3T、4T、5T、6T
③ 縫合方式(圖表1)
有504、512、514、516、504+401五種型式

① Machine type
② Thread numbers Four types: 3T, 4T, 5T, 6T
③ Sewing type (Chart 1) Five types: 504, 512, 514, 516, 504+401

型式 TYPE	504	512	514	516	504+401
圖形 PATTERN					

④ 車縫布料
F: 輕薄布料
L: 薄布料
M: 中厚布料
H: 厚布料
X: 特厚布料

④ Sewing materials
F: Fine weight material
L: Light weight material
M: Medium weight material
H: Heavy weight material
X: Extra heavy weight material

⑤ 送具型式
⑥ 針寬
⑦ 包邊寬度(表1)

⑤ Feed dog type
⑥ Needle width (Table 1)
⑦ Seam width (Table 1)

編號 Code	包邊寬度 Seam Width
3	3mm
4	4mm
5	5mm
6	6mm

表1/Table 1

⑧ 配件 ⑧ Attachment

2. 規格說明 2. Specification

機型 Model	700K/988
最高轉速 Max Stitch Speed	7500rpm
噪音值 Noise Level	82分貝以下 under 82 dB
縫距 Stitch Length	4/5/6 mm
針桿行程 Stroke of the needle bar	24.3±0.2 mm
押具揚程 Presser Foot Lift	5.5 mm
押具壓力 Presser Foot Pressure	5kg
送具高度(高出針板面) Feed Dog Height (over the needle plate)	0.7-0.9 mm
送具齒寬度 Teeth Width of the Feed Dog	1.6 mm
縫目調整裝置 Stitch Adjusting Device	按鈕調整 Button Adjustment
押具裝置 Presser Foot Device	彈簧式、旋鈕調整式 Spring type, Knob Adjustment Type
加油方式 Oil Filling	儲油槽儲存方式、毛氈、棉線毛細管自動供油 Oil tank storage type. Automatic oil supply by felt, cotton thread capillary action.
回油方式 Oil Return Solution	偏心泵浦 Eccentric Pump
使用油 Oil for Use	提供專用油(MOBIL#10) Provide Specific Oil (MOBIL#10)

表2/Table 2

安裝 INSTALLATION

注意 CAUTION

請讓受過培訓的技術人員來安裝縫紉機。 Machine installation should only be carried out by a qualified technician.

請委託購買商店電氣專業人員進行電氣配線。 Contact your dealer or a qualified electrician for any electrical work that may need to be done.

縫紉機重48公斤，安裝工作必須由兩人以上來完成。 The sewing machine weighs 48kg. The installation should be carried out by two or more people.

在安裝完成前，請不要連接電源，如果誤接啟動開關，縫紉機動作會導致受傷。 Do not connect the power cord until installation is complete. The machine may operate if the treadle is depressed by mistake, which could result in injury.

縫紉機傾倒或下壓起時，請用雙手進行操作。單手操作時因縫紉機的重量單一滑落導致受傷。 Use both hands to hold the machine head when tilting it back or returning it to its original position. If only using one hand, the weight of the machine head may be too heavy to hold, and may cause human physical injuries.

1. 縫紉機箱搬運過程中，不可扶持布蓋板下方。(圖9)

1. While moving the sewing machine after opening the box, please do not hold the below side of the cloth cover. (Fig. 9)

- 依本機所附裝機圖及零件組合圖所列之配件，依序安裝防震機座板(圖10)
 - 請參閱圖10，將防震機座板安裝於機座下方。
 - 裝置導布筒及線架。(圖11)
 - 馬達啟動踏板①裝於左邊，押具腳踏墊②則裝於右邊。(圖12)
- Please refer to the attached table cut-out drawing and the parts list to assemble the anti-shock machine aluminum plate (Fig. 10)
- Please refer to Fig. 10 to install the anti-shock machine aluminum plate below the machine bed.
- Assemble the waste disposal set and the thread stand. (Fig. 11)
- Assemble the motor starting pedal (1) to the left side, and the presser foot pedal (2) to the right side. (Fig. 12)

本體與車板不得干涉
The machine and the machine bed shall not interfere with each other.

5. 注意馬達之轉向為順時鐘方向，皮帶①之鬆緊度以用手指向內壓下約10 mm之緊度為宜。皮帶輪②大小與車縫轉速請參照表3及圖13。

5. Please be noted that the turning direction of the motor is clockwise. The best tension of the motor belt (1) is that the belt can be pressed in about 10 mm by a finger. Please refer to Table 3 and Fig. 13 about the size of the pulley (2) and the sewing speed.

圖13/Table 3

Machine (S.P.M.)	Motor pulley Diameter(mm)	60Hz	50Hz
6,000	95	115	
6,500	105	125	
7,000	110	135	
7,500	120	145	

照明設備 LIGHTENING EQUIPMENT

貼心使用者設計的照明設備，其採用不發熱、壽命長之發光二極體LED燈具，讓使用者更方便於穿線。(圖14)

A thoughtful lightening equipment is designed for the operators. Non-heating and long life LED lamps are adopted so that the operators can thread easily. (Fig. 14)

LED燈具 LEDLamps

新機器啟用規定 HOW TO OPERATE THE NEW MACHINE

- 新機器在最初啟用磨合期的四個星期內，請用低於最高速度20%的速度運轉，之後換上新潤滑油，才可運轉至最高速度。
- 定期之清潔保養，確保延長機器之使用壽命。

Please operate this machine in 80% of the maximum speed in the first four weeks for engagement. After four weeks, please do not operate under the maximum speed until replacing the new lubrication oil.

Periodically maintain and clean the machine to ensure and extend the usage term of the machine.

潤滑油之注入與更換 LUBRICATION AND DRAINAGE

- 潤滑油之注入(圖15)
(1) 將螺絲①放鬆，以包裝箱內所附之超高速潤滑油或選用ESSO#32 (或 MOBIL#10)等相當之機油加入，使油量指示標位於油標上下之間即可，然後再鎖緊螺絲①。
- 潤滑油之更換(圖16)
(1) 將螺絲①放鬆後，使油槽內的油完全排出後再鎖緊。
(2) 為延長本機器之壽命，請於開始使用後四星期更換新油，爾後約每四個月更換一次。

Fill the lubrication oil (Fig. 9)
(1) Remove the screw (1), and fill it with the attached ultra high speed lubricating oil, or choose ESSO #32 (or MOBIL #10) or equivalent. Tighten the screw (1) after the oil level indicator locates between the two marking lines.

Drainage and refill the oil (Fig. 16)
(1) Loosen the screw (1) and drain all the oil inside the oil tank. Then, tighten the screw (1) again.
(2) In order to extend the term of usage, please replace the oil after the first four week, and then replace it every four months.

- 新縫紉機或久置未使用時，請在針桿、上鉤針台等加油潤滑。
 - 潤滑油之更換(圖16)
(1) 將螺絲①放鬆後，使油槽內的油完全排出後再鎖緊。
(2) 為延長本機器之壽命，請於開始使用後四星期更換新油，爾後約每四個月更換一次。
 - 為延長本機器之壽命，特別裝有濾油器之機油，請在每使用一個月後卸下濾油器，並用乾淨之布擦拭。必要時得更換新品。
- Please lubricate the needle bar and the upper looper shaft before starting operating a new machine or a long idling machine.
- Drainage and refill the oil (Fig. 16)
(1) Loosen the screw (1) and drain all the oil inside the oil tank. Then, tighten the screw (1) again.
(2) In order to extend the term of usage, please replace the oil after the first four week, and then replace it every four months.
- To extend the usage term, this machine has equipped an oil filter. Please disassemble and clean it every month, as well as change it if needed. (Fig. 17)

穿線方法 THREADING

請確實按照圖示穿線，錯誤之穿線將引起斷線、跳針及車縫不平坦...等現象。(圖19-22)

Follow the procedures for threading. Wrong threading may cause thread breaking, stitch skipping, puckering or unexpected sewing. (Fig. 19-22)

濾油器 Filter

3. 針之冷卻油
使用油：矽油(圖18)

3. Needle cooling lubrication oil: SILICON OIL. (Fig. 18)

只有三線-737/988-3T For Three Thread Only 737

四線-747/988-4T For Four Thread Only 747

五線-757/988-5T For Five Thread Only 757

六線-767/988-6T For Six Thread Only 767

控線調整 ADJUST THREAD TENSION

線張力必須根據縫合布料種類、布料厚薄、線及包邊寬度等之差異而做不同的調整。順時針旋轉線力控制螺帽，線張力加大，反之減弱。

The thread tension should be adjusted properly according to the kinds and the thickness of the materials, stitch length, and seam width, etc. In addition, adjust the nuts case by case individually. Turn the nuts clockwise will increase the thread tension. Otherwise, the thread tension will be decreased.

- 調整鈕之控線關係(圖23)
(1) 第一調整鈕①控制雙環針線或左邊跨線
(2) 第二調整鈕②控制包邊針線
(3) 第三調整鈕③控制上勾針線
(4) 第四調整鈕④控制下勾針線
(5) 第五調整鈕⑤控制雙環勾針線

1. Thread tension adjusting nuts (Fig. 23)
(1) The first adjusting nut (1) controls double chain stitch threads or the left over-loop needle thread.
(2) The second adjusting nut (2) controls the seam lock needle thread.
(3) The third adjusting nut (3) controls the upper looper thread.
(4) The fourth adjusting nut (4) controls the lower looper thread.
(5) The fifth adjusting nut (5) controls the double chain looper thread.

2. 針線控線關係(圖24、圖25)
(1) 在縫合方式504、512、514時，將過線組①移至最下處，縫合方式516時，則將過線組①、②移至最上處。

2. Needle thread control (Fig. 24, Fig. 25)
(1) When the sewing type is 504, 512, or 514, move the threading part (1) to the lowest part. When the sewing type is 516, move the threading part (1) and (2) to the highest point.

(2) (+)表示增加針線放線量。
(3) (-)表示減少針線放線量。

The (+) direction indicates to increase the needle thread length.
(3) (-) means to decrease the needle thread length.

3. 勾針控線關係(圖26)
(1) 若縫合方式為503、504、505及上勾針移至最低時，將①及②調整至⊖位置。若縫合方式為505時，則移至⊕。

3. Looper thread control (Fig. 26)
(1) When the sewing type is 503, 504, 505, and the upper looper is on the lowest point, adjust (1) and (2) at the position of ⊖. When the sewing type is 505, set the take-up (1) and (2) at the position of ⊕.

(2) 固定線導板③、④如下：
⊕方向為縫合線較多，反之較少。

(2) Adjust fixed thread guide plate (3) and (4) as follows:
The direction ⊕ is for more thread in sewing seam, and the ⊖ direction is for less thread in sewing seam.

4. 環縫線齒輪控線關係(圖27)
(1) 調整螺絲導致線環不穩定(鬆垮或成形不足)時。
(2) ⊕表示增加針線放線量。
(3) ⊖表示減少針線放線量。

4. Chainstitch thread cam control (Fig. 27)
(1) Adjusting the lower thread causes the thread ring unstable (too loose or didn't form a thread ring).
(2) ⊕ means to have more thread amount while sewing.
(3) ⊖ means to have less thread amount while sewing.

換針方法 REPLACE THE NEEDLE

- 使用DCX27或同規格之針。(圖28)
- 旋開螺絲①並取下針。
- 將新針插至針孔最底處，並使針之長溝面向自己，固定螺絲①。

Please use the needle DCX27 or the equivalents. (Fig. 28)

Loosen the screw (1) and take off the needle.

Insert the new needle till reaching the end, as well as the long groove faces your side. Tighten the screw (1).

線距調整 RBPLUCREINISREBUENGLNTH

通常依縫合布料，差數比等之不同而調整。持續壓下按鈕①並轉動送布輪使針卡住，再轉動送布輪至所需之針距後按此按鈕。(圖29、表4)

The stitch length is adjusted according to the fabrics, the differential ratio, or other factors. Keep pressing the button (1) and turn the pulley till the button is locked. Then, release the button after reaching the desired stitch length. (Fig. 29, Table 4)

1. 調整方法一：
放鬆調整鈕①，當調整鈕②向下調整時使布料收縮，反之則伸張，調整後再鎖調整鈕①。(圖30、表5)

1. Adjust solution 1:
Loosen the adjusting nut (1). Adjust the adjusting rod (2) downward will shrink the fabric, whereas move it upward will extend the fabric. Tighten the adjusting nut (1) after the adjustment finishes. (Fig. 30, Table 5)

2. 調整方法二：
(1) 鬆開螺絲④，並從機台後方移開外蓋⑤。
(2) 鬆開螺絲⑥，上下移動連桿⑦。

2. Adjust solution 2:
(1) Loosen the screw (4) and remove the cover (5) from the rear side of the machine bed.
(2) Loosen the nut (6), and move the connecting rod (7) upward and downward.

Scale	1	2	3	4	5
Differential feed ratio	1:1.3	-	1:0.7	1:0.9	1:1.1
	1:2	1:0.7	1:1	1:1.14	1:1.17
	1:3	1:1	1:1.5	1:2	1:2.5
	1:4	1:1.1	1:1.6	1:2.3	1:3

表5/Table 5

diff Ratio	Machine type	1	2	3	4	5	6	7	
M	1:2	Scuming	0.6	1.13	1.66	2.19	2.72	3.25	3.8
	1:3	Shirring	0.6	1.03	1.46	1.89	2.32	2.71	3.2
	1:1.3	Sergimz	0.8	1.5	2.2	2.9	3.6	4.3	5
	1:4	Special	0.6	1.02	1.44	1.66	2.28	2.7	-

表4/Table 4

差數比調整 ADJUST THE DIFFERENTIAL FEED RATIO

若主送具之運動行程大於差數送具運動行程時，布料車縫時會伸張，反之則會收縮。

If the stroke of the main feed dog is larger than the stroke of the differential feed dog, the fabric will be extended while sewing. Otherwise, it will be shrunk.

1. 調整方法一：
放鬆調整鈕①，當調整鈕②向下調整時使布料收縮，反之則伸張，調整後再鎖調整鈕①。(圖30、表5)

1. Adjust solution 1:
Loosen the adjusting nut (1). Adjust the adjusting rod (2) downward will shrink the fabric, whereas move it upward will extend the fabric. Tighten the adjusting nut (1) after the adjustment finishes. (Fig. 30, Table 5)

2. 調整方法二：
(1) 鬆開螺絲④，並從機台後方移開外蓋⑤。
(2) 鬆開螺絲⑥，上下移動連桿⑦。

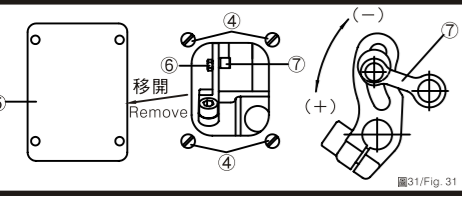
2. Adjust solution 2:
(1) Loosen the screw (4) and remove the cover (5) from the rear side of the machine bed.
(2) Loosen the nut (6), and move the connecting rod (7) upward and downward.

伸張 Stretch
收縮 Shrink

欲增加差動比，把連桿往(+)方向移動。
To increase the differential feed ratio, move the connecting rod (+) direction.

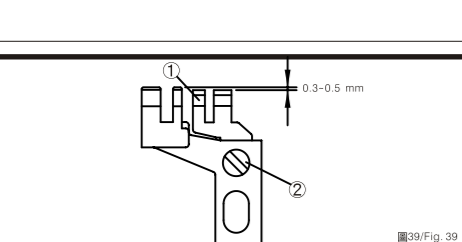
欲減少差動比，把連桿往(-)方向移動。
To decrease it, move the connecting rod (-) direction.

(3) 在調整過後，把外蓋5放回機台後方並鎖緊螺絲4。(圖31)
(3) After adjusting, put the cover 5 back to the rear of the machine bed and tighten the screw 4. (Fig. 31)



更換切刀 REPLACE THE TRIMMERS

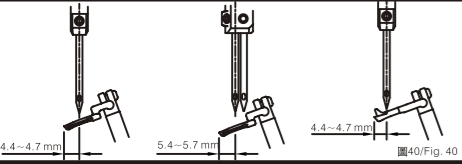
- 更換上切刀(圖32)
 - 放鬆螺絲1將下刀座2向左邊推，鬆螺絲1。
 - 取下螺絲3，換上新刀片後，輕輕鎖上螺絲3。
 - 轉動皮帶輪使上刀移至下死點，調整上刀高低使上刀與下刀相交約0.5-1.0 mm，鎖緊螺絲3。
 - 放鬆螺絲1，使下刀座還原位置，並試驗上下刀能確實剪斷車縫線，鎖緊螺絲1。
- 更換下切刀(圖32)
 - 放鬆螺絲1將下刀座2向左邊推，鬆螺絲1。
 - 放鬆螺絲4，取下舊刀片換上新刀。
 - 調整下刀之刀口與針板面平齊後，鎖緊螺絲4。
 - 放鬆螺絲1，使下刀座還原位置，並試驗上下刀能確實剪斷車縫線，鎖緊螺絲1。



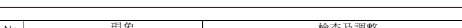
針與勾針之關係 THE RELATIONSHIP BETWEEN NEEDLE AND LOOPER

- 針與上勾針之關係(圖40)

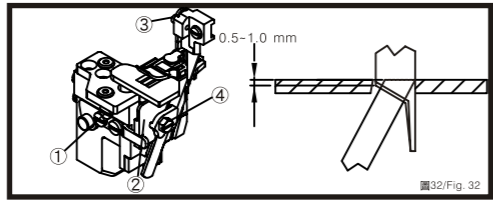
當上勾針移至最左時，勾針尖與針中心距離4.4-4.7 mm，雙針時其左針中心與勾針尖距離約5.4-5.7 mm。



- 針與下勾針之關係
 - 當下勾針移至最左時，勾針尖與針中心距離約3.7-3.9 mm (雙針時以左針為主)。(圖41)



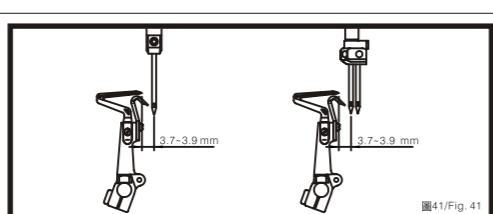
No.	現象 Problem	檢查及調整 Exam and Adjustment
2.	針線的跳線現象 The Skipping Stitch of Needle Thread	<ul style="list-style-type: none"> ●針線的張力太緊? The tension of the needle thread is too tight? ◎(1)把針線張力的速度調整。 (1)Loose the tension of the needle thread properly. ◎(2)把針線的線路(A)調整在最高位置，使針線的勾線器(B)的針線放出量減少。 (2)Adjust the line (A) of the needle thread to the highest position, so that the release amount of the needle thread from thread hooking will decrease. ◎(3)把線路(C)左傾一點，以增加勾針的線放出量。 (3)Lean the line (C) to a little to increase the release amount of the looper thread.
3.	右勾針線的跳線 The Skipping Stitch of the Right Looper Thread	<ul style="list-style-type: none"> ●右勾針與左針的間隙太大? The space between the right looper and needle is too wide? ◎右勾針向右退後時，和車針的間隙必須1.1mm 乃使用正規的右勾針。(備有單針、雙針、厚料、薄料用各種適合的右勾針) When the right looper turn right and backward, the distance to the needle has to be 0.1 mm, which is using the correct right looper. (The appropriate right looper for each type, such as single need, 2 needles, materials, and thin fabrics, are included) ●雙針時，右勾針與左針的間隙大? The distance is too wide between the right and left needle when using 2 needles? ◎由於右勾針安裝時的左右位置以及右勾針框上下運動量之雙方關係，予以調整在勾針的運動軌跡。在右勾針下降時，將左針到右針的下落量予以減少。Because the correlations of the left/right position of the right looper while assembling and the up/down moving position of the right looper seat, adjust the movement path of the looper. When the right looper descends, decrease the descending amount from left needle to right needle.
4.	左勾針線的跳線 The Skipping Stitch of Left Looper	<ul style="list-style-type: none"> ●左右勾針交叉時，右勾針不會勾到左勾針? The right looper didn't hook the left looper thread while they are crossing each other? ◎換新左勾針。(左勾針尖端磨損，要修正時，不得把頭部凸出處予以磨取(磨薄)) Change the new left looper. (The top of the left looper is worn. When fix and replace, the protrusion to the looper top shall not be worn.)



- 更換下切刀(圖32)
 - 放鬆螺絲1將下刀座2向左邊推，鬆螺絲1。
 - 放鬆螺絲4，取下舊刀片換上新刀。
 - 調整下刀之刀口與針板面平齊後，鎖緊螺絲4。
 - 放鬆螺絲1，使下刀座還原位置，並試驗上下刀能確實剪斷車縫線，鎖緊螺絲1。

包邊寬度調整 ADJUST THE HEM WIDTH

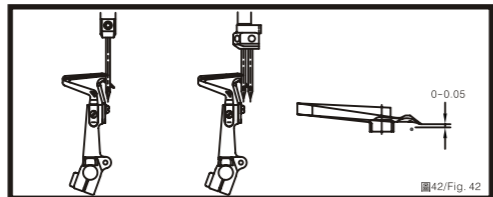
- 轉動皮帶輪，將上刀移至下死點。(圖33)
 - 轉動皮帶輪1，向左移動下刀座2後，暫時鬆螺絲1。
 - 放鬆螺絲3，移動上刀座向左或向右，直到達到所要的包邊寬度後再鎖緊螺絲3。
 - 鬆開螺絲1，使下刀座位置還原，並測試能切斷車縫線後，鎖緊螺絲1。



針與環縫針之關係 THE RELATIONSHIP BETWEEN NEEDLE AND CHAINSTITCH LOOPER

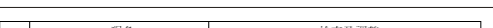
- 針與環縫針之關係(圖42)

當上下勾針相交時，兩勾針盡量接近，但不可摩擦碰撞。其間隙A點為0.5 mm，B點為0.2 mm。

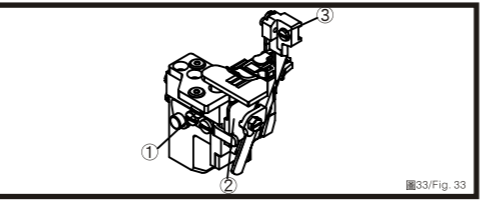


- 上勾針與下勾針之關係(圖43)

當上下勾針相交時，兩勾針盡量接近，但不可摩擦碰撞。其間隙A點為0.5 mm，B點為0.2 mm。

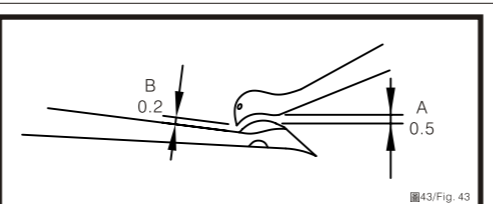
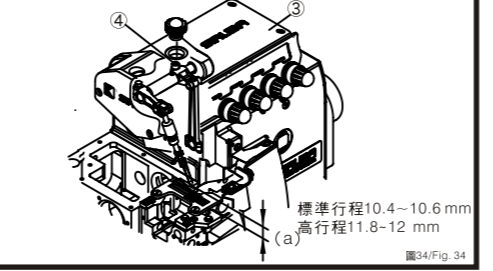


No.	現象 Problem	檢查及調整 Exam and Adjustment
4.	左勾針線的跳線 The Skipping Stitch of Left Looper	<ul style="list-style-type: none"> ●右勾針尖磨損? The wear of the right looper top? ◎(1)把針線張力的速度調整。 (1)Loose the tension of the needle thread properly. ◎(2)把針線的線路(A)調整在最高位置，使針線的勾線器(B)的針線放出量減少。 (2)Adjust the line (A) of the needle thread to the highest position, so that the release amount of the needle thread from thread hooking will decrease. ◎(3)把線路(C)左傾一點，以增加勾針的線放出量。 (3)Lean the line (C) to a little to increase the release amount of the looper thread.
5.	斷針 Needle Broken	<ul style="list-style-type: none"> ●車針的選擇不對? Choose the wrong needle? ◎在有布料不發生針孔的範圍內，使用稍粗一點的車針，Use thick needle within the range that there will be no pinhole occurred on the fabric. ●車針的安裝不對? Bad assembling of the presser foot? ◎安裝時必須使用車針會插進押具落針處中央。 During assembly, make sure the needle can insert to the central point of the presser foot. ●線架的安裝高低不對? Wrong assembling height of the feeding teeth? ◎調整送布齒的高度為 0.8mm-1mm，同時保持適當的押具壓力。 Adjust the height of the feeding teeth to be around 0.8 mm to 1 mm. Meanwhile, keep the appropriate presser foot pressure. ●線路不對? Bad threading? ◎線路有結頭要事先加以處理後，重新穿線。 If there is any connecting part of the thread, it needs to be dealt first. Then, rethreading.
6.	車針尖端受損 The Top of the Needle Damaged	<ul style="list-style-type: none"> ●右勾針及車針高低不對? The right looper and the needle have wrong height position? ◎車針在上死點附近時，用手指故意把車針向前彎曲，看看尖端會不會碰到右勾針，然後調整車針高低或右勾針的運動位置。 When the needle moves close to the upper dead point, push the needle forwards a little by finger. See whether the top of the needle touches the right looper or not. Then adjust the height of the needle position or the moving position of the right looper.



針高度之調整 ADJUST THE NEEDLE HEIGHT

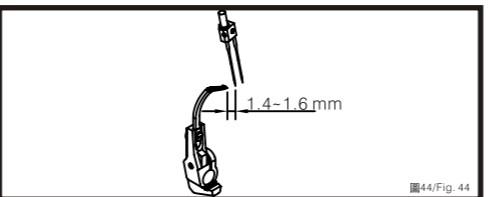
- 轉動皮帶輪使針尖上升至最高點時，針尖至針板面之距離為(a)。(圖34)
 - 轉動皮帶輪使針尖上升至最高點時，針尖至針板面之距離為(a)。(圖34)
 - 調整：
 - 打開上蓋3。
 - 放鬆螺絲4，移動針棒至所需高度，鎖緊螺絲4。
 - 放回上蓋3，並且密合鎖緊。



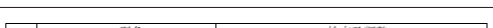
環勾針運動量之調整 ADJUST THE CHAINSTITCH LOOPER MOVEMENT AMOUNT

- 環勾針之運動量之調整(圖44)

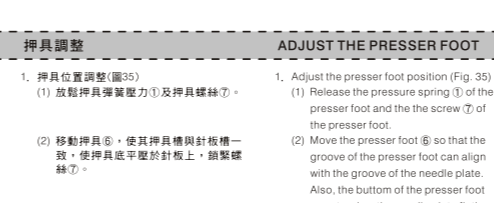
環勾針之運動量呈橢圓形，當針號數變動過大時或有必要調整勾針之前後運轉量時，請依照以下步驟調整。(圖46)



- 針與環縫針片之關係(圖45)
 - 當下勾針由左向右至針中心時(雙針時以左針為主)，針與環縫針片之間隙為0-0.05 mm。
 - 當針在下死點時，針與前護針片之間隙為0.1-0.2 mm。

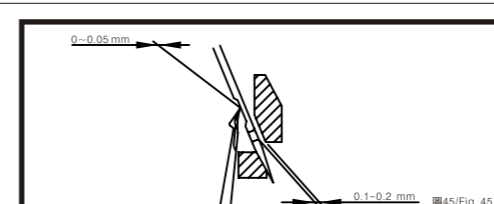
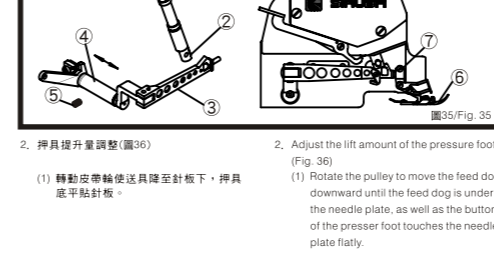


No.	現象 Problem	檢查及調整 Exam and Adjustment
6.	車針尖端受損 The Top of the Needle Damaged	<ul style="list-style-type: none"> ●車針的選擇不對? Choose the wrong needle? ◎在有布料不發生針孔的範圍內，使用稍粗一點的車針，Use thick needle within the range that there will be no pinhole occurred on the fabric. ●車針的安裝不對? Bad assembling of the presser foot? ◎安裝時必須使用車針會插進押具落針處中央。 During assembly, make sure the needle can insert to the central point of the presser foot. ●線架的安裝高低不對? Wrong assembling height of the feeding teeth? ◎調整送布齒的高度為 0.8mm-1mm，同時保持適當的押具壓力。 Adjust the height of the feeding teeth to be around 0.8 mm to 1 mm. Meanwhile, keep the appropriate presser foot pressure. ●線路不對? Bad threading? ◎線路有結頭要事先加以處理後，重新穿線。 If there is any connecting part of the thread, it needs to be dealt first. Then, rethreading.
7.	斷線與縫合不順 Broken Thread and Rough/Uneven Stitch	<ul style="list-style-type: none"> ●線架的線孔沒有磨光? The thread hole of the thread stand did not polish? ◎用砂布把線孔周圍磨光。 Use emery cloth to polish the surroundings of the thread hole. ●線的選擇錯誤? Choose the wrong thread? ◎更換較好的線，使細線均勻。 Change a better thread to balance the threads. ●線的張力調整不好? Cannot adjust to the best thread tension? ◎注意左右勾針的線不要太鬆，要調整一支針線時也要注意到有關的線變化。 Please be noted that the threads of the left/right looper should not be too loose. When adjust the position of one needle, the related changes of the threads are needed to be noticed. A. 拉緊左針線→左勾針線會鬆→右勾針線會鬆。 Pull the needle thread tightly→the left looper is looser→the right looper is tighter B. 拉緊右針線→右勾針線會鬆→針線也會鬆。 Pull the right looper thread tightly→the right looper is looser→the needle thread is looser, too. C. 拉緊右勾針線→左勾針線會鬆→針線會鬆。 Pull the right looper thread tightly→the left looper thread is looser→the needle thread is looser



押具調整 ADJUST THE PRESSER FOOT

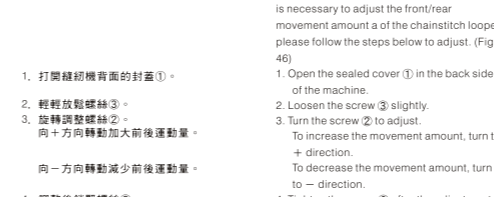
- 押具位置調整(圖35)
 - 放鬆螺絲1將下刀座2向左邊推，鬆螺絲1。
 - 移動螺絲3，使其押具與針板槽一致，使押具底面與針板上，鎖緊螺絲3。
 - 調整：
 - 打開上蓋3。
 - 放鬆螺絲4，移動針棒至所需高度，鎖緊螺絲4。
 - 放回上蓋3，並且密合鎖緊。



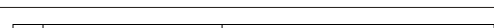
環勾針運動量之調整 ADJUST THE CHAINSTITCH LOOPER MOVEMENT AMOUNT

- 環勾針之運動量之調整(圖44)

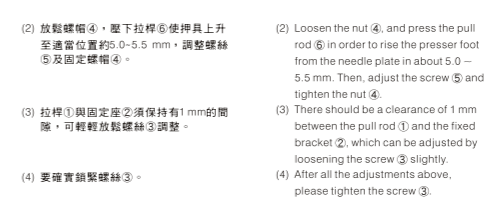
環勾針之運動量呈橢圓形，當針號數變動過大時或有必要調整勾針之前後運轉量時，請依照以下步驟調整。(圖46)



- 針與環縫針片之關係(圖45)
 - 當下勾針由左向右至針中心時(雙針時以左針為主)，針與環縫針片之間隙為0-0.05 mm。
 - 當針在下死點時，針與前護針片之間隙為0.1-0.2 mm。

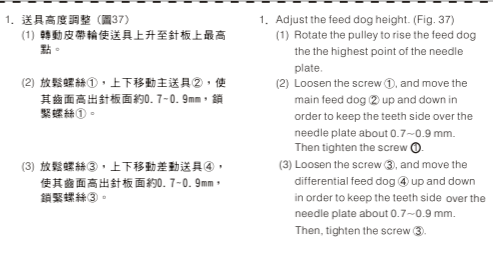


No.	現象 Problem	檢查及調整 Exam and Adjustment
6.	車針尖端受損 The Top of the Needle Damaged	<ul style="list-style-type: none"> ●車針的選擇不對? Choose the wrong needle? ◎在有布料不發生針孔的範圍內，使用稍粗一點的車針，Use thick needle within the range that there will be no pinhole occurred on the fabric. ●車針的安裝不對? Bad assembling of the presser foot? ◎安裝時必須使用車針會插進押具落針處中央。 During assembly, make sure the needle can insert to the central point of the presser foot. ●線架的安裝高低不對? Wrong assembling height of the feeding teeth? ◎調整送布齒的高度為 0.8mm-1mm，同時保持適當的押具壓力。 Adjust the height of the feeding teeth to be around 0.8 mm to 1 mm. Meanwhile, keep the appropriate presser foot pressure. ●線路不對? Bad threading? ◎線路有結頭要事先加以處理後，重新穿線。 If there is any connecting part of the thread, it needs to be dealt first. Then, rethreading.
7.	斷線與縫合不順 Broken Thread and Rough/Uneven Stitch	<ul style="list-style-type: none"> ●線架的線孔沒有磨光? The thread hole of the thread stand did not polish? ◎用砂布把線孔周圍磨光。 Use emery cloth to polish the surroundings of the thread hole. ●線的選擇錯誤? Choose the wrong thread? ◎更換較好的線，使細線均勻。 Change a better thread to balance the threads. ●線的張力調整不好? Cannot adjust to the best thread tension? ◎注意左右勾針的線不要太鬆，要調整一支針線時也要注意到有關的線變化。 Please be noted that the threads of the left/right looper should not be too loose. When adjust the position of one needle, the related changes of the threads are needed to be noticed. A. 拉緊左針線→左勾針線會鬆→右勾針線會鬆。 Pull the needle thread tightly→the left looper is looser→the right looper is tighter B. 拉緊右針線→右勾針線會鬆→針線也會鬆。 Pull the right looper thread tightly→the right looper is looser→the needle thread is looser, too. C. 拉緊右勾針線→左勾針線會鬆→針線會鬆。 Pull the right looper thread tightly→the left looper thread is looser→the needle thread is looser



送具調整 ADJUST THE FEED DOG

- 送具高度調整(圖37)
 - 轉動皮帶輪使送具上升至針板上最高點。
 - 放鬆螺絲1，上下移動送具2，使其齒面高出針板面約0.7-0.9mm，鎖緊螺絲1。
 - 放鬆螺絲3，上下移動送具2，使其齒面高出針板面約0.7-0.9mm，鎖緊螺絲3。

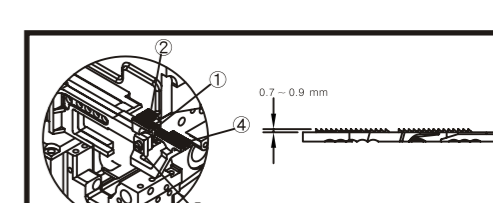


保養 MAINTENANCE

- 清潔作業前，請切斷電源。當誤觸起動開關時，縫紉機動作易導致人員受傷。
Turn off the power switch before starting cleaning. The machine may operate if the treadle is pressed incautiously, which could result in injury.
- 加潤滑油和黃油時，務必戴好保護眼鏡和手套，以防潤滑油進入眼中或沾在皮膚上，易引起發炎。
Be sure to wear protective goggles and gloves when handling the lubricating oil and grease so that they do not get into your eyes or onto your skin, otherwise inflammation can be resulted.
- 潤滑油或黃油不能飲用，否則將會引起嘔吐和腹瀉。將油放在小孩拿不到的地方。Furthermore, do not drink or eat the oil or the grease for they can cause vomiting and diarrhea. Keep the oil away of the reach of children.
- 縫紉機傾倒下或聲起時，請以雙手進行操作。Use both hands to hold the machine head when tilting or returning it to its original position.
- 單手操作時，因縫紉機的重量較重，萬一滑落易導致受傷。If only using one hand to move the machine, the weight of the machine head may cause slipping and you may get hurt.

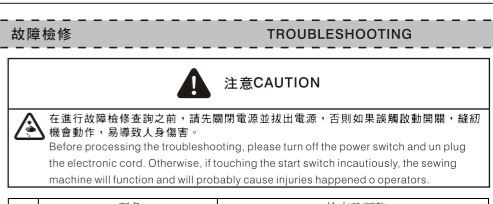
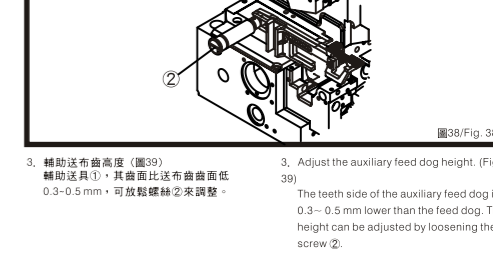
保養循環 Maintenance Cycle	保養項目 Maintenance Items
每天 Daily	<ol style="list-style-type: none"> 清潔送料具上之棉絮 1. Clean the lint on the feed dog. 檢查油盤是否有足夠之液體油。(油量在油盤之上，下兩紅漆記號間) 2. Check if there has enough liquid oil inside the oil pan. (The amount should be between the red up and down paint mark of the oil gauge.) 保持機器及操作台清潔 3. Keep the machine and the operation table clean.
每週 Weekly	<ol style="list-style-type: none"> 保持電源外觀乾淨 1. Keep the power cords looking clean and neat. 保持操作面板乾淨 2. Keep the operational panel clean 檢查電源零件是否鬆動或在正確位置 3. Check if the power parts is loosening or still at the right position
每三個月 Quarterly	<ol style="list-style-type: none"> 更換油盤內之液體油 1. Change the liquid oil inside the oil pan
每年 Annually	<ol style="list-style-type: none"> 檢查傳動皮帶是否疲乏或損壞 1. Check the transmission belt to see if it is wearful or damaged.

表6/Table 6



送具調整 ADJUST THE FEED DOG

- 送具水平調整(圖38)
 - 這具曲齒的齒在運轉的過程中，必須保持針板面至水平。
 - 調整時放鬆螺絲1，旋轉後軸輪2，齒面呈水平後固定螺絲1。



故障檢修 TROUBLESHOOTING

No.	現象 Problem	檢查及調整 Exam and Adjustment
1.	針線太過緊密/繃緊 Needle thread too tight/loose	<ul style="list-style-type: none"> ●針線張力是否過大或過小? The tension of the needle thread is too loose or to tight? ◎調整針線張力。 Adjust the needle thread tension
2.	針線的跳線現象 The Skipping Stitch of Needle Thread	<ul style="list-style-type: none"> ●車針的選擇不對? Choose the wrong needle? ◎選擇配合布料的車針與縫線號碼。 Select the needle and thread number match the fabrics ●車針不良? Bad needle? ◎換新車針。 Change a new needle ●車針與左右針尖端之間有間隙? Any clearance between the needle and the top of the left looper? ◎調整左右針尖端與車針之間距。 Adjust the distance from the top of the left looper to the needle to be 0 ●張力調整小彈簧不起作用? ◎(1)小彈簧不起作用時，要把彈簧拉緊一點。(注意)拉太長則會發生斷線。 (1) If the small spring does not function, pull it to be more tightened. (Note) The broken thread will happen if pull the spring too tight. ◎(2)張力調整發生溝槽時，則須更換調整板。 (2) If there is any groove existing on the tension adjusting plate, please change a new one.

圖表2/Chart 2

No.	現象 Problem	檢查及調整 Exam and Adjustment
10.	大聲、異聲 Loud Noise, Strange Noise	<ul style="list-style-type: none"> ●布板蓋之前蓋碰撞聲? Crashing noise form the side cover of the fabric plate cover? ◎校正布板蓋之側蓋的角度，使之不會碰到下勾針刀片。 Correct the angle of the side cover of the fabric plate cover to keep it from the lower looper and the upper knife seat.
11.	不能噴油 The Oil Does Not Splash	<ul style="list-style-type: none"> ●泵不出油? The oil does not come out from the pump? ◎(1)重新校正位置。 (1)Recheck it to the correct position ◎重新組裝泵中齒輪與軸心軸位置。 (2)Reassemble the gear of the pump to the main shaft and adjust the position. ◎上機油不噴油? Upper mechanism does not splash the oil? ◎(1)清除頂頭鎖針出油螺絲。 (1)Clean the lints and change the oil releasing screw. ◎(2)換新濾油器。 (2)Change a new filter ◎(3)清除污穢的東西或換新。 (3)Clean the dirt or change a new one ◎(4)用鐵絲通油路。 (4)Use the iron wire to clean through the oil path.
12.	刀片不利 The Knife Is Not Sharp	<ul style="list-style-type: none"> ●刀片不利? The knife is not sharp? ◎(1)磨利或更換新品。 (1)Polish/or change a new one ◎(2)校正上下刀片角度。 (2)Correct the angle of the upper and lower knife seat ◎(3)重新正確安裝(按基準調整安裝) (3)Reassemble it correctly (to assemble and adjust based on the norm) ◎(4)更換新品。 (3)Change a new one. ●上下刀位置不對? Incorrect position of the upper and the lower knife? ◎調整上下刀角度。 Adjust the angles of the upper and the lower knife.