



FW-740TB



星銳牌工業用縫紉機

SHING RAY BRAND INDUSTRIAL SEWING MACHINE

曲臂式四針六線拼縫機

FOUR-NEEDLE AND SIX-THREAD FEED-OFF ARM
MODEL INDUSTRIAL INTERLOCK SEWING MACHINE



使用說明 & 維修手冊

Instruction & Maintenance BOOK



星銳縫紉機股份有限公司



SHING RAY SEWING MACHINE CO., LTD

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一、安全上的注意事項

使用本機前，請詳細閱讀本說明書，及所搭配之馬達說明書，配合正確使用方式，並須由受過正確訓練之人員來安裝或操作。

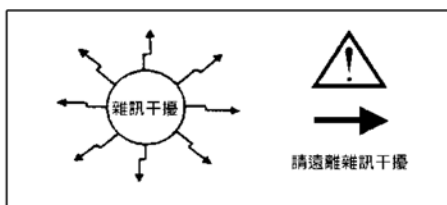
1-1. 作業環境的安全

1-1-1 電源電壓：

電源電壓請遵照馬達與控制箱銘牌所標示之規格 $\pm 10\%$ 範圍內操作。

1-1-2 電磁波干擾：

請遠離高週波器或電波發射器等，以免產生電磁波干擾本驅動裝置，因而發生錯誤動作。



1-1-3 溫濕度：

- (1) 請不要在室溫 45 度 C 以上或 5 度 C 以下的場所操作。
- (2) 請不要在日光直接照射的場所或室外運作。
- (3) 請不要在暖氣(電熱器)旁運作。
- (4) 請不要在相對濕度 30%以下或 95%以上或有露水的場所運作。

一、SAFETY PRECAUTION

Please read this manual carefully, also with related manual for the machine head before use. For perfect operation and safety, installing and operating this product by trained personal is required. When install and operate HVP-70 MINI SERVO MOTOR, precaution must be taken as the following. This product is designed for specify sewing machine and must not be used for other purposes.

1-1. WORK ENVIRONMENT

1-1-1 Power voltage:

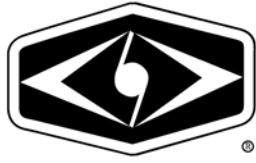
Only use Power Voltage indicated on the name plate of the HVP-70 $\pm 10\%$ ranges.

1-1-2 Electromagnetic pulse interference:

To avoid the false operate; please keep the product away from the high electromagnetic machinery or electro generator.

1-1-3 Temperature:

- (1) Please don't operate in room temperature is above 45°C or 5°C.
- (2) Avoid operating in direct sun light or outdoors area.
- (3) Avoid operating near the heater.
- (4) Avoid operating in the area which humidity is 30% or less and 95% or more, also stay away from dew area.



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1-2. 安裝的安全

1-2-1 機器、馬達、控制箱：

請遵照說明書正確安裝。

1-2-2 接地：

- (1) 為防止雜訊干擾或漏電事故，請作好接地工程。
- (2) 電源線的接地線須以適當大小的導線和接頭連接到生產工廠的系統地線，此連接必須被永久固定。
- (3) 詳細參閱馬達使用說明說。

1-3. 操作中的安全

1-3-1 在第一次開電後，請先以低速操作縫紉機，並檢查轉動方向是否正確。

1-3-2 縫紉機運轉時，請勿去觸摸手輪、針、押腳.....等，易造成人體傷害的機構部位。

1-3-3 請不要在拆下馬達護蓋及其他安全裝置的情形下操作。

1-2. SAFETY IN INSTALLATION

1-2-1 Motor and control box:

Follow the instruction in this manual for correct installation.

1-2-2 Grounding:

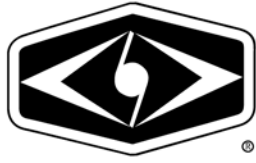
- (1) To avoid the static interference and correct leakage, all grounding must do.
- (2) Use the correct connector and extension wire when connecting ground wire to Earth and secure it tightly.
- (3) Detailed please consult the motor operation instruction.

1-3. SAFETY IN OPERATING

1-3-1 When turn on the machine in the first time, use low speed to operate and check the correct rotation direction.

1-3-2 During the machine operated, please don't touch hand-wheel, needle, presser foot.....which are easy to injured parts.

1-3-3 Please don't operate the machine under to take out the belt cover and another safety advice.



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1-4. 保養維修的安全

在操作以下動作前，請先關閉電源：

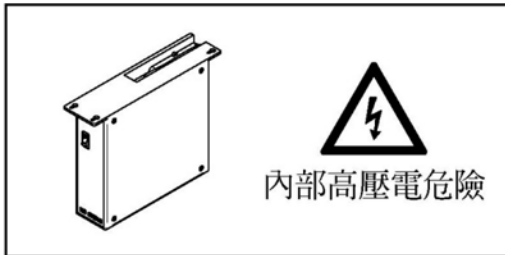
1-4-1 要拆卸馬達或控制箱時，或在控制箱上插或拔掉任何連接插頭時。

1-4-2 控制箱裡面有危險高壓電，所以關閉電源後要等 10 分鐘以上，方可打開控制箱蓋。

1-4-3 更換車針或穿線時。

1-4-4 機械上的修理及調整時。

1-4-5 機械休息不用時。



1-4. SAFETY IN MAINTENANCE

AND REPAIRS

Power must be turned off first, when:

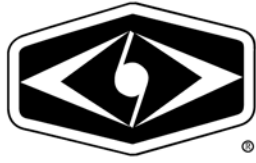
1-4-1 Uninstall the motor to the control box, or plug and unplug any connector.

1-4-2 Turn off the power and wait 10 minutes before opening box cover.

1-4-3 Raising the machine arms or changing needle, or threading needle. (show as above)

1-4-4 Repairing or doing any mechanical adjustment.

1-4-5 Machines rest.



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1-5. 警告標示

1-5-1 以下的這些符號即表示有一定程度上的危險，如發生錯誤會造成人體上的傷害，亦可能造成機器上的損壞，所以縫紉機上有危險的地方會有此標示。



這標示代表危險警告：如果不注意可能導致手指或眼睛傷害。



這標示代表高壓電警告：如果不注意可能導致觸電或電擊傷害。



這標示代表注意警告：如果不注意可能導致死亡或嚴重傷害。



這標示代表接地線：如果未確實施行接地工程，可能導致機械損害或引發個人傷害。

1-5. WARNING SIGNS

1-5-1 These below symbols indicate a kind of dangerous, it may cause personal injury or machine's broken down. It's the reason that we indicate at dangerous place of machine.

This symbol indicates dangerous warning which may cause finger & eyes injury in careless.

This symbol indicates electrical risk warning which may cause electric shock in careless.

This symbol indicates attentive warning which may cause death or serious injury in careless.

This symbol indicates ground wire. It may cause machine's broken down or personal injury, if the ground wire didn't be connected.



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1-5-2 縫紉機上的警告標示:



沒有手指護罩和安全裝置時不能操作。
在穿線、更換車針、清潔.....等之前，請先關閉電源。



機械運轉時，敬請注意手指與眼睛的防護。



馬達運轉方向。



請確實施行接地工程，否則可能引發靜電導致機械損害或個人傷害。

1-5-2 The warning symbols on the machine:

Please don't operate the machine without finger guard cover & safety devices. Switch off the electric power before threads, exchange the needle, clear the machine.....etc.

Please take care finger & eyes when machine be operated.

The operation way of & motor.

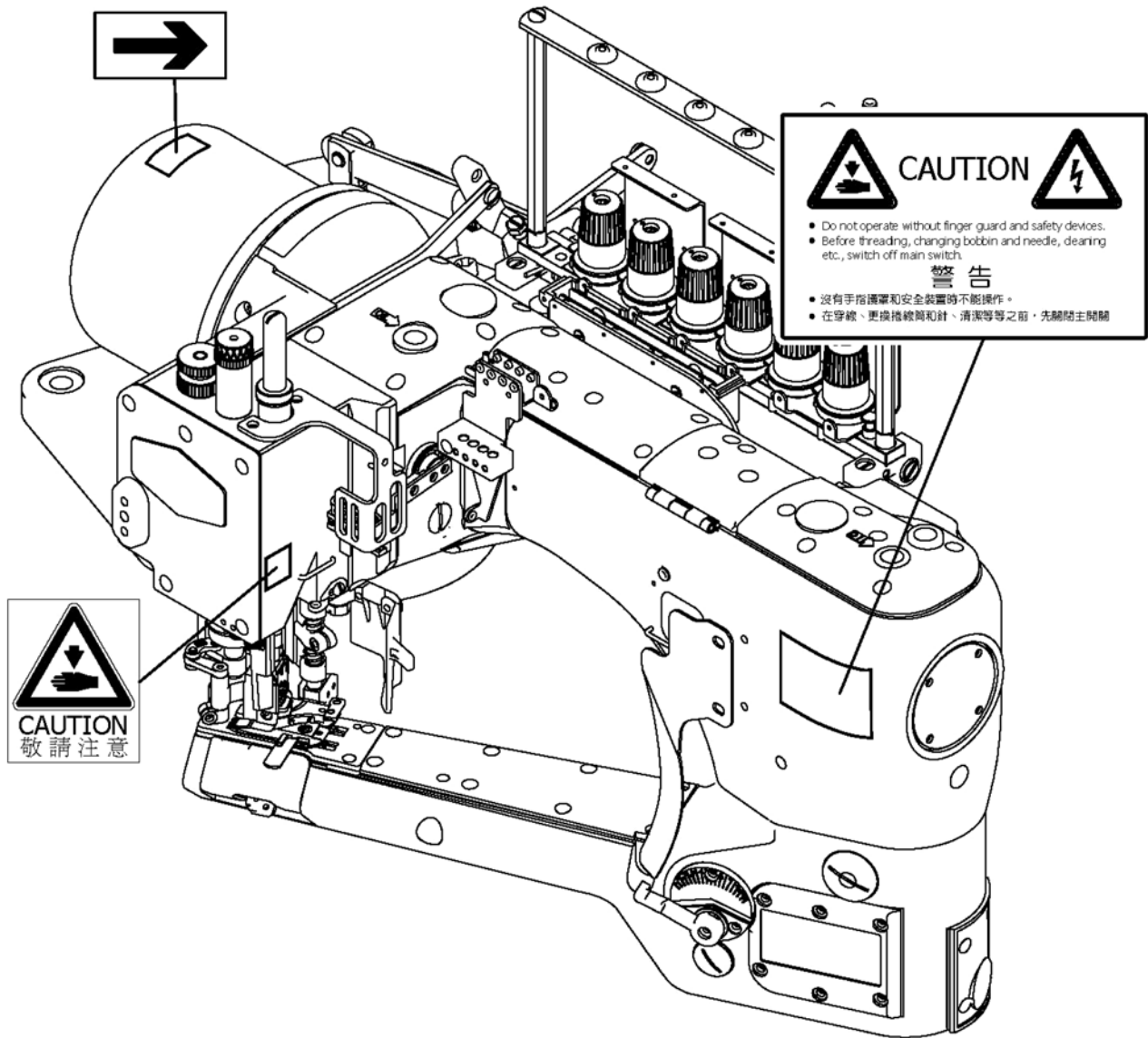
Please connect the ground wire in certainly. If not, the static electricity may cause machine's broken down or personal injury.

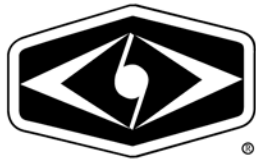


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1-5-3 警告標示位置圖:

The location of warning signs:





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二、使用說明

為延長本機的使用壽命，請於開始使用的一個
月內更換第一次新油，往後約六個月更換一次。

2-1. 潤滑油之添加

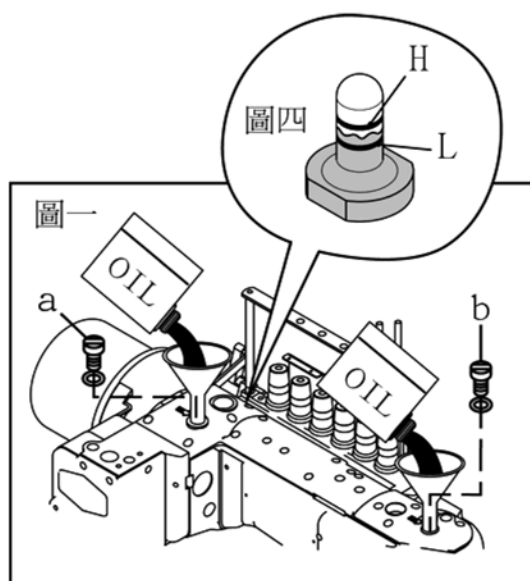
警告!!

如果長期未更換潤滑油，會使潤滑油惡
化變質，導致機械損害。

2-1-1 請選用與 DAPAE FLUID 32T(針車油)同級
之潤滑油。

2-1-2 在新機使用前，請先注入潤滑油。鬆開
取下螺絲 a 和 b，將油緩慢注入機器中(圖一)。

從油孔 a 加油直到油量到(圖四)最上方的線，
從油孔 b 加油直到油量到(圖二)最上方的線。



二、OPERATION GUIDE

For extend the machine's operation life,
please exchange new oil within one month after
machine be operated in first time.

2-1. THE FILLING OF LUBRICATION

OIL

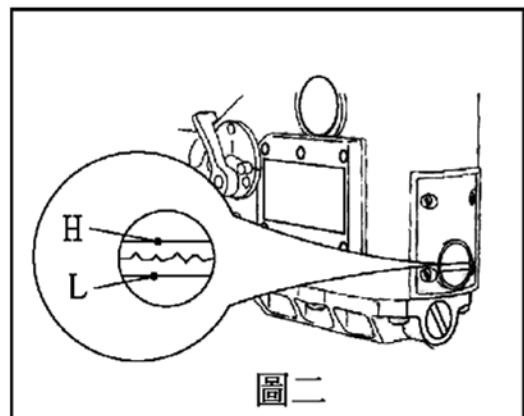
Warning!!

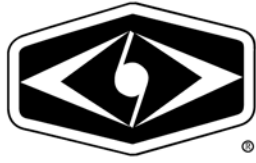
If the oil didn't be exchanged for a long
time. The dirty oil will cause the machine
's broken down.

2-1-1 Please use DAPAE FLUID 32T oil. Or, the
oil is equivalent.

2-1-2 Please fill up the oil before the machine
be operated. Loosen the screw "a" and fill the oil
into the machine in slowly (Fig 1).

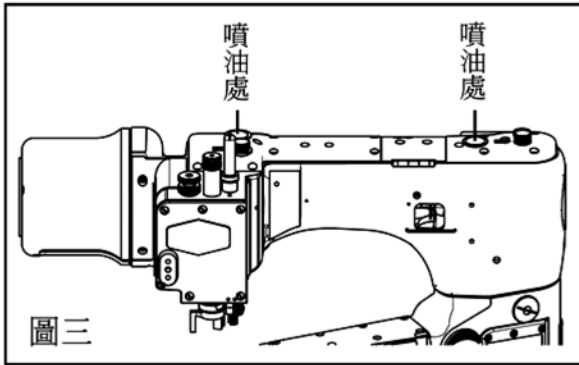
From the plug screw "a", supply oil until the oil
level indicator top reaches the upper line in the
oil sight gauge(Fig 4). Form the plug screw "b",
supply oil to the upper line in the oil sight
gauge(Fig 2).



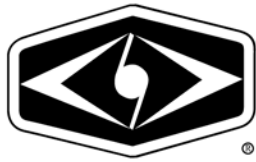


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2-1-3 於每天開機操作時，請先目視檢查噴油狀態是否正常(圖三)，且注意油量是否低於指示窗之下限(圖二 H 為上限，L 為下限)若低於下限請隨時補充新油。



2-1-3 Please double check the oil ejective situation in everyday before the machine be operated (Fig 3). If the oil level is lower than low line (Fig2. H: top line & L: low line), please refill it all the time!



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2-2. 潤滑油之更換

警告!!

如果長期未更換潤滑油，會使潤滑油惡化變質，導致機械損害。

2-2-1 潤滑油的更換，將放油螺絲 a、b 鬆開，使油槽內的舊油完全排出後，再將放油螺絲 a、b 鎖緊 (圖四)。

2-2-2 注入新油的方法，可參照 2-1-2 的圖一。

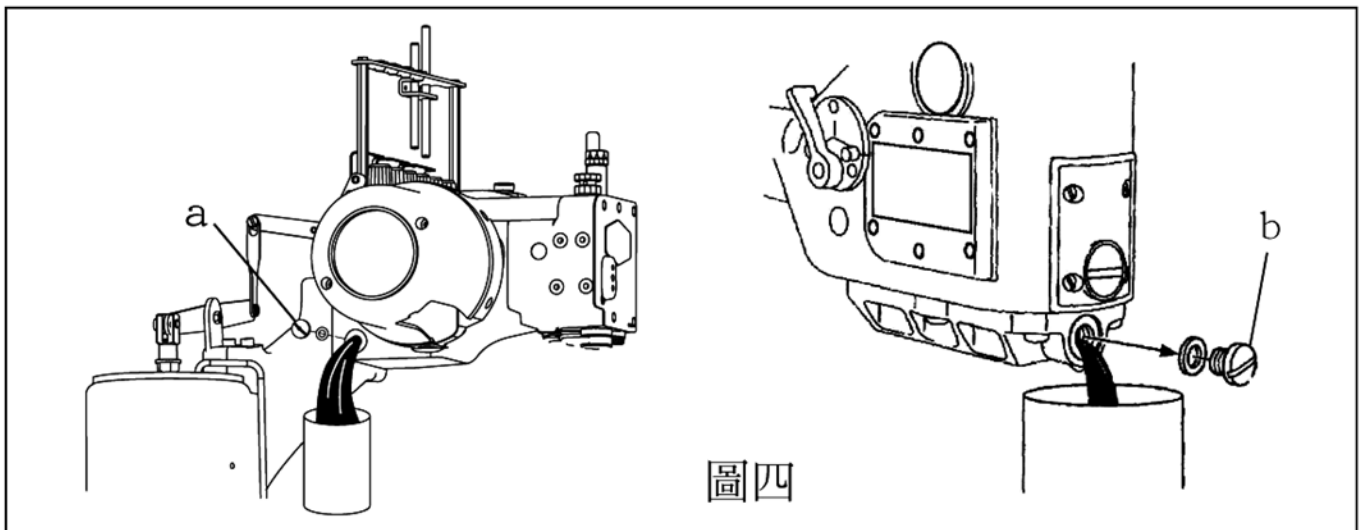
2-2. OIL CHANGE

Warning!!

If the oil didn't be exchanged for a long time. The dirty oil will cause the machine's broken down.

2-2-1 Loosen the screw "a", "b" and drain all of old oil from the tank. Then, tighten the screw "a", "b" (Fig 4).

2-2-2 Please refer to 2-1-2 (Fig 1) to refill the new oil.





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三、調整說明

3-1. 下飾線勾針安裝與調整

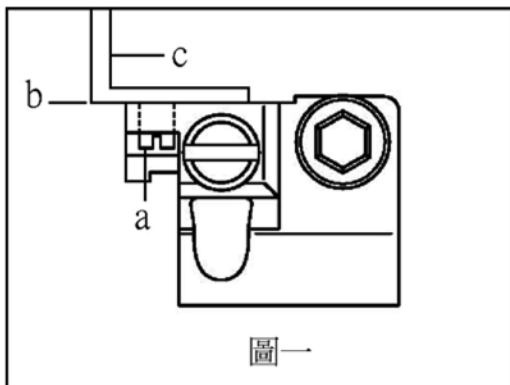
警告!!

組裝維修作業前，請先關閉電源。

3-1-1 檢查螺絲 a 不可突出下勾針固定座 b 的平面 (圖一)，並將下勾針固定座固定於下勾針搖桿軸 d (圖二)。

3-1-2 將下飾線勾針 c 組裝於下勾針固定座 b，再將固定螺絲 e 鎖緊，並且將螺絲 a 鎖至頂到下飾線勾針 c 即可 (圖二)。

*注意！螺絲 a 鎖上施力不可過大，以頂到下飾線勾針 c 即停止施力，否則將造成下飾線勾針 c 位移問題。



三、ADJUSTMENT GUIDE

3-1. THE INSTALLATION &

ADJUSTMENT OF LOOPER

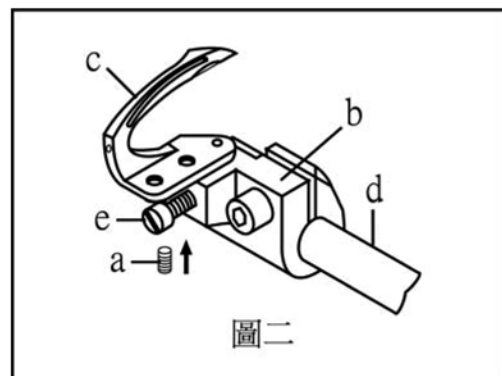
Warning!!

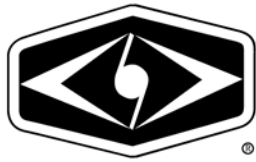
Please switch off electric power before installation & maintenance.

3-1-1 Please check that the screw "a" couldn't jut out from the plane of looper holder "b" (Fig 1) and install the looper holder on the looper rocker shaft "d" (Fig 2).

3-1-2 Please install looper "c" on the looper holder "d" and tighten fixed screw "e". Then, to screw on the screw "a" to hold the looper "c". (Fig 2).

*Remark: Please don't screw on the screw "a" too over which will cause the location of looper "c" be lost. Please stop to screw on the screw "a" immediately when it hold the looper "c".





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3-2. 下飾線勾針量具與針板距離

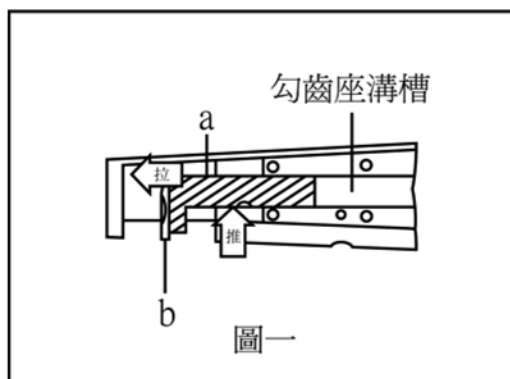
警告!!

組裝維修作業前，請先關閉電源。

3-2-1 將量具 **a** 放入勾齒座溝槽內，並向上推進，再向左拉靠至下飾線勾針 **b**，目視檢查勾齒座溝槽壁面是否與下勾針平面呈現垂直狀態 (圖一)。

3-2-2 裝上針板 **c**，並以針板 **c** 下方平面與下飾線勾針 **b** 最接近點至少要保持 0.2mm 的間隙 (圖二)。

量具 **a**：零件本校車定規 K13-5 或 K19-23
(ERP NO. 07401923)



3-2. THE CLEARANCE BETWEEN

LOOPER AND NEEDLE PLATE

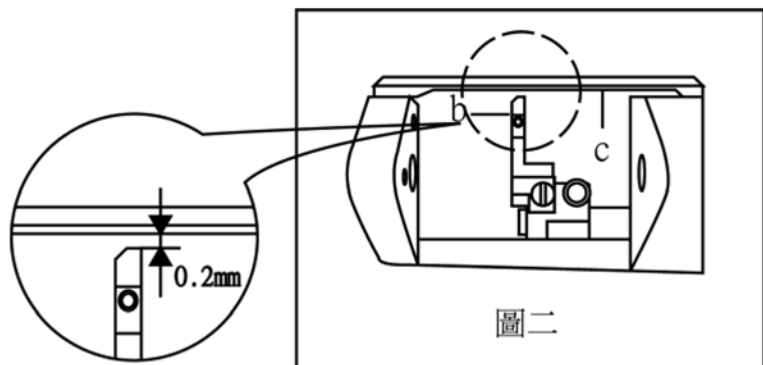
Warning!!

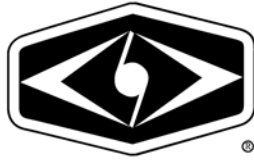
Please switch off electric power before installation & maintenance.

3-2-1 Please put the measuring gauge "a" into the groove of feed dog driving mechanism on the cylinder bed. The top edge of gauge "a" close to inside of cylinder bed groove. Then, moved measuring gauge "a" to the left and close the looper "b". Please check the looper is vertical to inside of cylinder bed groove. (Fig 1)

3-2-2 Put on the needle plate "c". To check the clearance between the bottom of needle plate and the top of looper is 0.2mm. (Fig2)

Measuring gauge "a": K13-5 or K19-23 in spare parts book. (ERP NO.07401923)





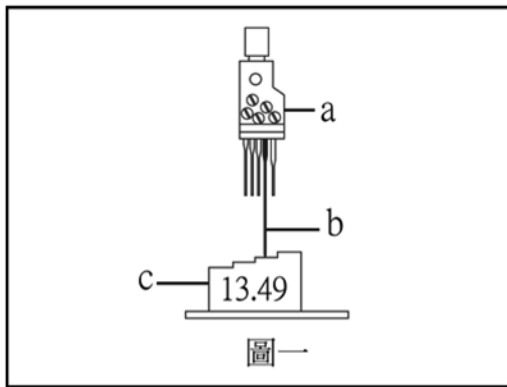
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3-3. 針位高度與水平

警告!!

組裝維修作業前，請先關閉電源。

3-3-1 將針鋸 **a** 移動至最高點位置後，再鬆開調整螺絲 **d**，並使針柱 **e** 上下移動來調整高度 (圖二)，再以正長針 **b** 為基準，依針距配合選用使用量具 **c** 量測得規格高度，(圖一) 範例是使用 4 針 5.2 針距，故以 13.49 為校正規格。



*使用針距不同，其量具 **c** 校正規格亦不同，如下表所示：

| 針數 | 針距 | 量具 c 校正規格 |
|----|-----|------------------|
| 4 | 4.8 | 13.89 |
| 4 | 5.2 | 13.49 |
| 5 | 5.2 | 13.49 |
| 4 | 6.0 | 12.7 |
| 4 | 6.4 | 12.7 |
| 4 | 7.0 | 10.5 |
| 4 | 8.0 | 10.5 |

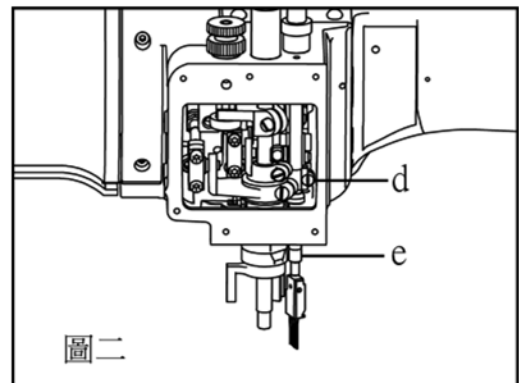
3-3. THE HEIGHT OF NEEDLE BAR

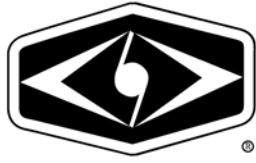
Warning!!

Please switch off electric power before installation & maintenance.

3-3-1 To lift the needle bar to the highest position. Please use the measuring gauge "c" to measure the height of longest needle to the needle plate in accordance with needle gauge. For example (Fig 1), the needle gauge is 4 needle 5.2mm and the correct height is 13.49mm. Please loose the screw "d" to adjust the height of needle bar "e" (Fig 2).

*Please note the height of different needle gauge is different. Please refer to the correct needle bar height from gauge "c" and following specification table.



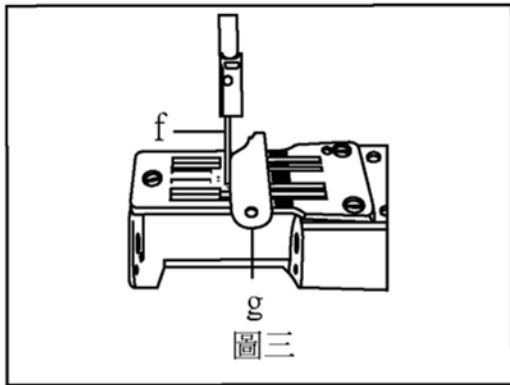


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3-3-2 以正針 f 為基準，使用輔助量具 g 目測針的中心應平均位於針板孔的中心位置，且中心線應重疊對齊（圖三）；調整針的中心對齊應稍微鬆開螺絲 d，左右轉動針柱 e 來調整對齊（圖二），須注意針柱上下作動時不可使針與針板干涉撞擊！

量具 c：零件本校車定規 K13-14A or K19-17A
(ERP NO.07401314A)

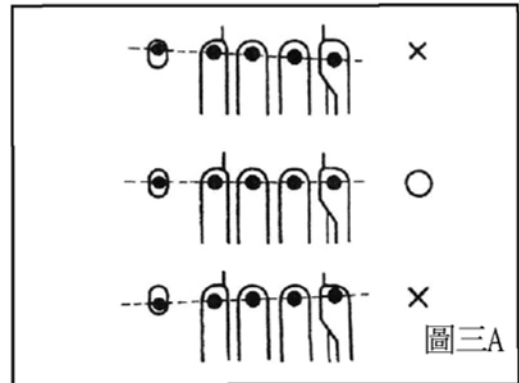
量具 g：零件本校車定規 K13-13 or K19-16
(ERP NO.07401916)

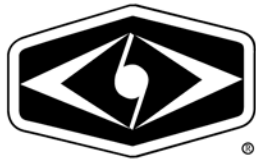


3-3-2 Please use the measuring gauge “g” to make sure that every needle are passed though the center of the needle hole no the needle plate. In the meantime, all of needle have to be in parallel and the gap have to be even.

Measuring gauge “c”: K13-14A or K19-17A in spare parts book. (ERP NO.07401314A)

Measuring gauge “g”: K13-13 or K19-16 in spare parts book. (ERP NO.07401916)





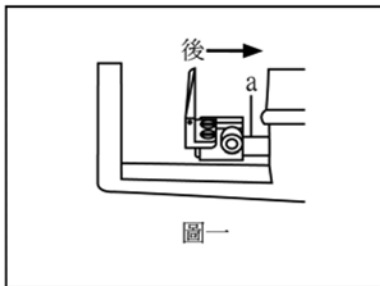
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3-4. 下飾線勾針前後調整

警告!!

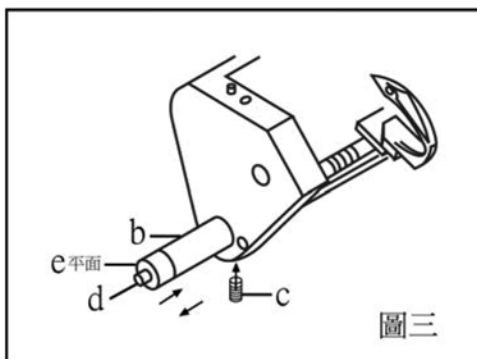
組裝維修作業前，請先關閉電源。

3-4-1 旋轉手輪，使下勾針搖桿軸 **a** 移動至最後位置 (圖一)，並且調整螺絲 **f**，讓下勾針前後連桿 **h** 位移至勾齒台座 **g** 的溝槽最高位置 (圖二)。



圖一

3-4-2 將量具 **b** 從下巴套筒前端的孔裝入，調整量具 **b**，使柱塞 **d** 與 **e** 平面切齊，再以螺絲 **c** 固定量具 **b** 鎖緊 (圖三)，完成後可以參考 (圖四 A)。



圖三

3-4. THE ADJUSTMENT OF LOOPER

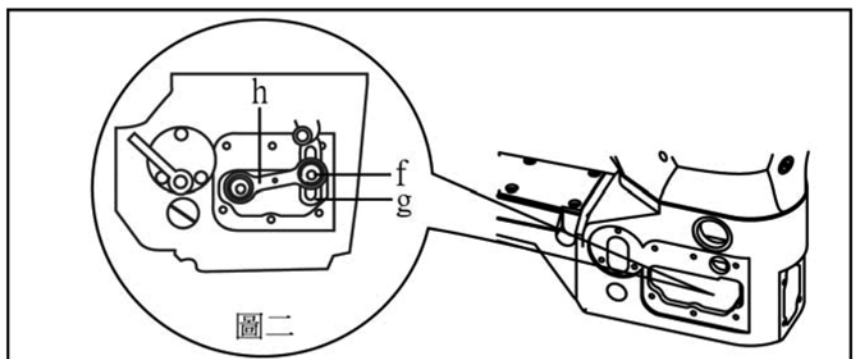
MOVED FRONT & REAR POSITION

Warning!!

Please switch off electric power before installation & maintenance.

3-4-1 To turn the hand-wheel and move the looper rocker shaft "a" to the end (Fig 1). Then, to loosen the screw "f" and adjust feed rocker link "h" to the supreme of feed drive/looper avoid lever groove. (Fig 2)

3-4-2 To install the measuring gauge "b" into the hole of front cylinder bed and tight it up by screw "c". The inner shaft "d" and plane "e" of measuring gauge "b" have to cut evenly when the big side of inner shaft close the looper holder. If not, please adjust the feed rocker link to make the inner shaft "d" and plane "e" cut evenly. (Fig 3)



圖二



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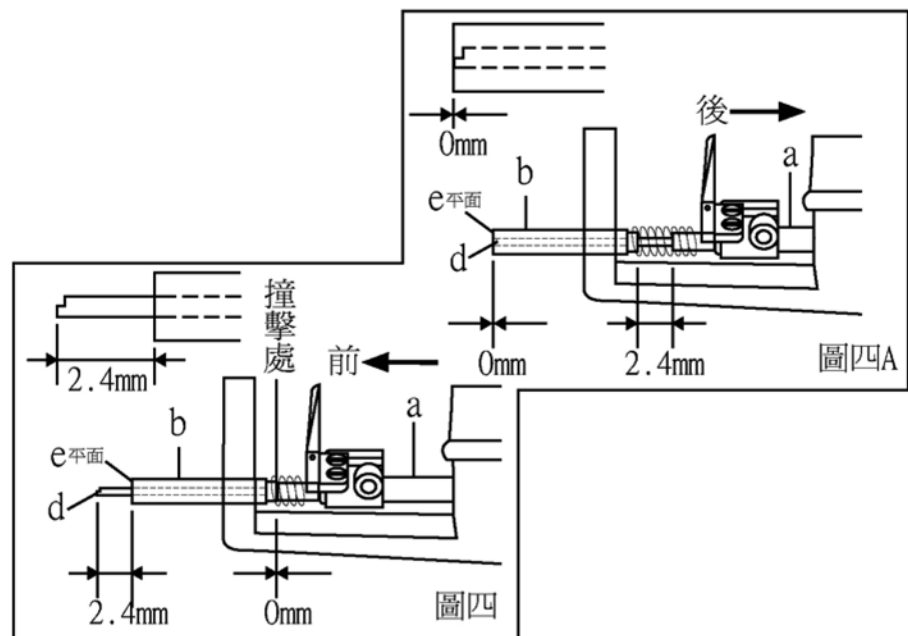
3-4-3 旋轉手輪，使下勾針搖桿軸 a 移動至最前位置，此時量具 b 內的柱塞 d 會被推出，而推出長度需控制在 2.4mm；內部空隙則需為歸零 (圖四)。當下勾針搖桿軸 a 再移動至最後的位置，柱塞 d 需如圖切齊 e 平面，即表示歸零，其內部空隙則為 2.4mm (圖四 A)。

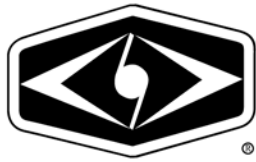
量具 b：零件本校車定規 K13-3
(ERP NO.07401303)

3-4-3 To turn the handwheel and move the looper rocker shaft "a" to the beginning. The inner shaft "d" of measuring gauge "b" will be pushed out by looper rocker shaft "a" at this moment. The pushed out length of inner shaft "d" is 2.4mm. In the meanwhile, the clearance between the big side of inner shaft "d" and the bushing of measuring gauge "b" is 0mm. (Fig 4)

Oppositely, to move the looper rocker shaft "a" to the end. The inner shaft "d" and plane "e" of measuring gauge "b" have to cut evenly. In the meanwhile, the clearance between the big side of inner shaft "d" and the bushing of measuring gauge "b" is 2.4mm. (Fig 4A)

Measuring gauge "b": K13-3 in spare parts book.
(ERP NO.07401303)

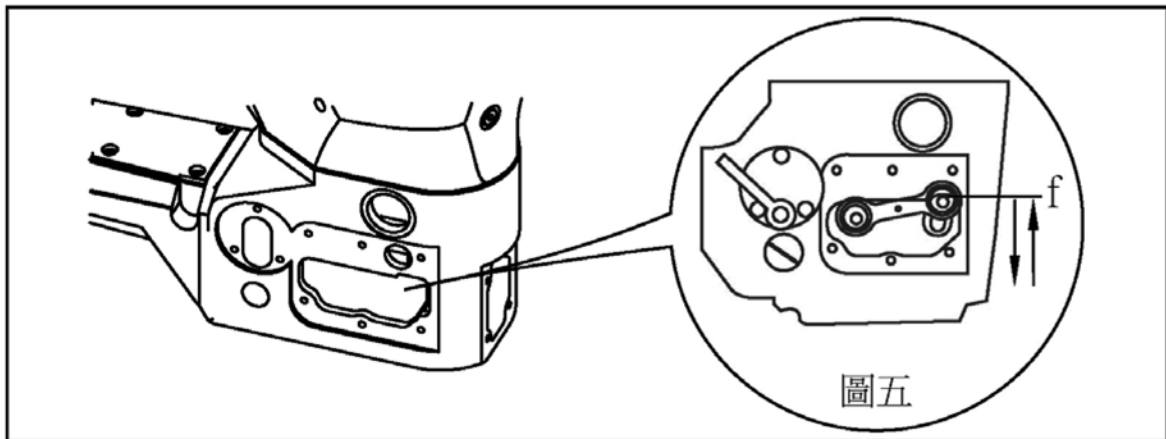


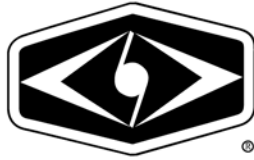


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3-4-4 如發生量具 b 突出不足，或產生撞擊現象時 (圖四)，則由螺絲 f 進行尺寸調整 (圖五)；提高則前後量變小，降低則前後量變大。

3-4-4 If the moving distance of looper rocker shaft from the beginning to the end is more or less than 2.4mm. (Fig 4) Please loosen the screw "f" (Fig 5) to adjust the distance. The distance will be decreased when the feed rocker link "h" is moved up. In the other way, the distance will be increased!!





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3-5. 下飾線勾針左右運動量調整

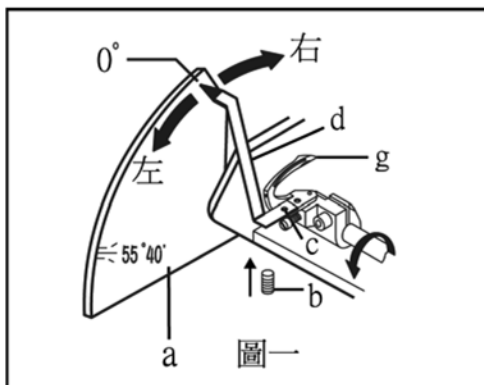
警告!!

組裝維修作業前，請先關閉電源。

3-5-1 在下巴前端孔，裝上刻度板 a，以螺絲 b 輕輕鎖上(不要鎖緊)，利用下飾線勾針 g 上的螺絲 c 鎖住指針 d，而指針 d 儘量接近刻度板 a，旋轉手輪使下飾線勾針 g 擺動到最右邊，再把指針 d 調整到刻度板 a 的 0° 刻度對齊，並以螺絲 b 鎖緊；再旋轉手輪，使下飾線勾針 g 擺動到最左邊，當指針 d 所指的刻度停在 55°40' 時，為標準位置 (圖一)。若指針 d 停在 54°40' -56°40' 時，也可以接受。

刻度板 a：零件本校車定規 K13-2
(ERP NO.07401302)

指針 d：零件本校車定規 K13-6
(ERP NO.07401306)



3-5. THE ADJUSTMENT OF LOOPER

MOVED RIGHT & LEFT POSITION

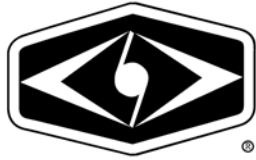
Warning!!

Please switch off electric power before installation & maintenance.

3-5-1 Please install the scale plate "a" to the front hole of cylinder bed and hold it up by screw "b" (Don't tighten it!). Please install the pointer "d" by screw "c" on looper "g" and close to the scale plate "a". Turning the handwheel to move the looper "g" to the right dead point. Please adjust the 0 degree of scale plate to the tip of pointer "d". Then, tighten the scale plate "a" by screw "b". Turing the handwheel to move the looper "g" to the left dead point. 55°40' is the standard, but 54°40'-56°40' may be passable.

Scale plate "a": K13-2 in spare parts book.
(ERP NO.07401302)

Pointer "d": K13-6 in spare parts book.
(ERP NO.07401306)



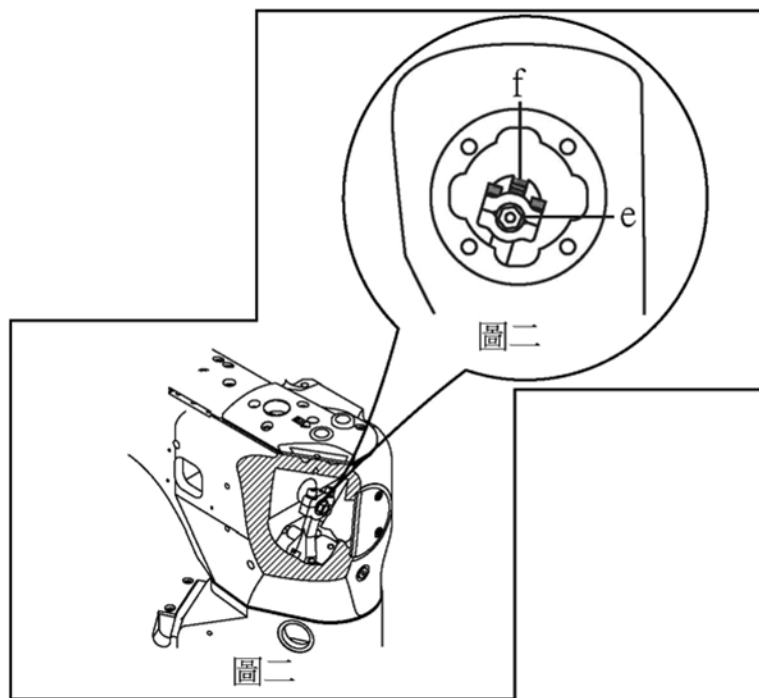
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3-5-2 調整左右量的方法，先鬆開螺母 e，由螺絲 f 上下位移，使得指針 d 左右調整角度變化，向右調整運動量變少，向左調整運動量增加 (圖二)。

*注意！螺母 e 位在螺紋方向，非一般右螺紋，故在拆裝時，順時針方向為鬆開，逆時針方向為鎖緊，應特別注意！並在鎖緊時，施力需適當，過緊將造成零件卡死，轉動阻力備增而故障。

3-5-2 To adjust the angle of looper moved right & left position, loosen the nut "e" and moved the screw "f" for adjusting. The angle will be decreased when the screw be moved to the right. The angle will be increased when the screw be moved to the left. (Fig 2)

*Notice!! The screw "e" is a left-handed thread! It's different than normal screw. Please loosen the screw by clockwise and tighten it by counterclockwise. Please tighten the nut "e" in appropriately. If the nut "e" is tighten up too much. The machine is going to be stuck in easily.





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3-6. 下飾線勾針左右量調整

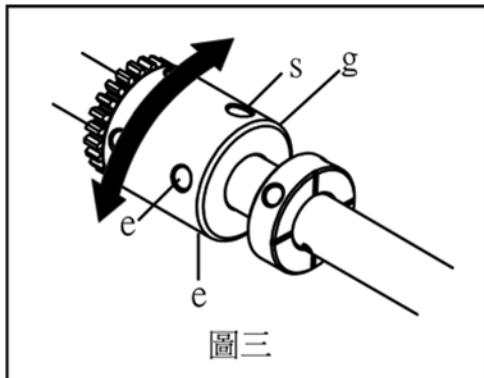
與針柱距離

警告!!

組裝維修作業前，請先關閉電源。

3-6-1 旋轉手輪，使針柱位移至最高點位置，此時先鬆開螺絲 s (圖三，如註解*)。

*在組裝圖一、圖二的量具後，左右擺動會受到限制，而螺絲 s 會朝向車台內部，在進行左右量具調整時，螺絲 s 會因方向問題而無法鬆開。



3-6-2 刻度量具 c 放置於押腳套管 f 上，利用調整螺絲 i 鎖住，旋轉手輪使針柱 a 位移最低點位置，同時調整止塊螺絲 j 與止塊螺絲 h，使得止塊螺絲 h 下方平面與針柱頂端距離 3.97mm 的間隙 (圖一)。

3-6. THE DISTANCE BETWEEN THE

LOOPER MOVED RIGHT & LEFT

POSITION AND NEEDLE BAR

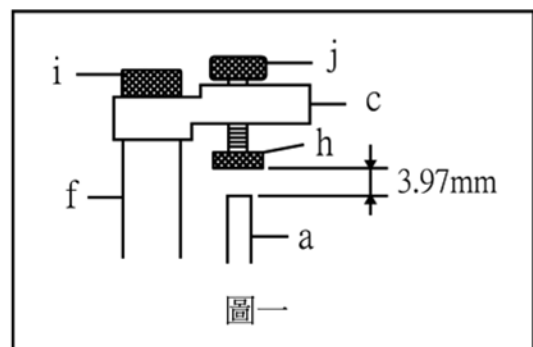
Warning!!

Please switch off electric power before installation & maintenance.

3-6-1 To turn the handwheel and move the needle bar to the highest position. Loosen screw "s".

*Remark: After installed the measuring gauges at Fig1 & Fig 2, the screw "s" will be faced on the inside of the machine's body which couldn't be touched & adjusted. That's the reason the screw "s" has to be loosen first!!

3-6-2 To put the measuring gauge "c" on the presser foot bushing "f" and tight it up by screw "i". To turn the handwheel and move the needle bar "a" to the lowest position. In the meantime, please adjust the stop screw "j" & "h" to make the clearance between the bottom of screw hand top of needle bar is 3.97mm. (Fig 1)

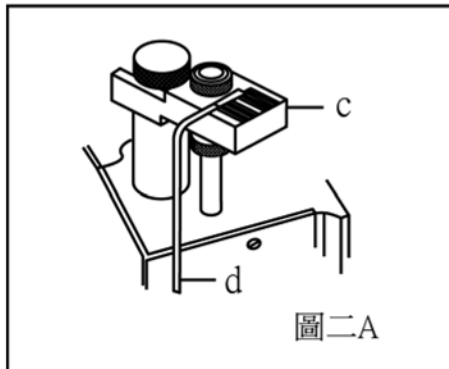




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3-6-3 組裝指針組 A 於下飾線勾針 b 上，將螺絲 p 鎖緊，同時調整指針 d 的尖端指在刻度量具 c 的刻度上，再將螺絲 k 鎖緊，旋轉手輪，向左擺動當針柱 a 頂到止塊螺絲 h 時，注意指針 d 所指示的刻度；當再旋轉手輪，向右擺動到同樣位置時檢查指針 d，是否位於前述情形位於同一個刻度上 (圖二)。

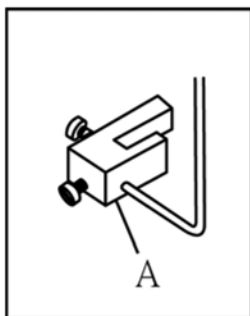
3-6-4 將指針左右擺動於同一刻度上的調整方法，由前後軸連接襯套 g 鬆開螺絲 e 進行調整 (圖三)。



刻度量具 c：零件本校車定規 K13-11
(ERP NO.07401311)

指針組 A：零件本校車定規 K13-10
(ERP NO.07401310)

指針 d：零件本校車定規 K13-1
(ERP NO.07401301)



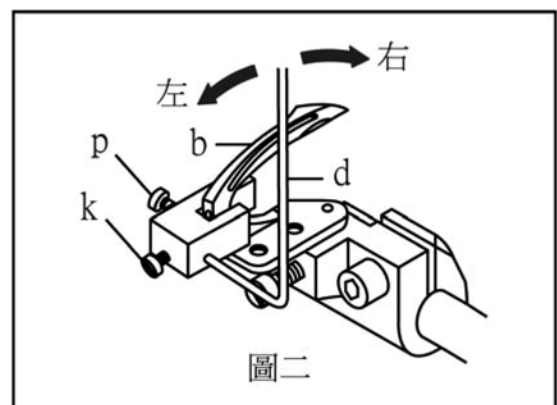
3-6-3 Please install the measuring gauge pointer set "A" on the looper "b" and tighten it by screw "p". In the meantime, please adjust the tip of pointer "d" to the scale of measuring gauge "c" and tighten it by screw "k". To turn the handwheel and move the pointer "d" to the left till the top of needle bar push the stop screw "h". Please make a noted of the scale of pointer "d". In the other way, to move the pointer "d" to the right and make sure it to indicate in the same scale or not?? (Fig 2)

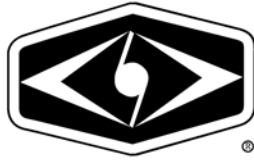
3-6-4 Please loosen the screw "e" on the front & rear connecting sleeve "g" for adjusting the pointer "d" to locate at same scale. (Fig 3)

Measuring gauge "c": K13-11 in spare parts book.
(ERP NO.07401311)

Measuring gauge pointer set "A": K13-10 in spare parts book. (ERP NO.07401310)

Pointer "d": K13-1 in spare parts book.
(ERP NO.07401301)





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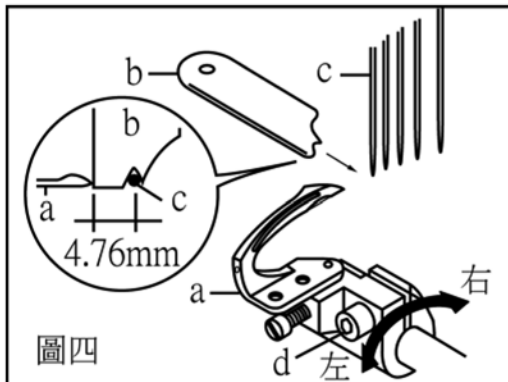
3-7. 下飾線勾針與針距離

警告!!

組裝維修作業前，請先關閉電源。

3-7-1 使用量具 **b** 測量下飾線勾針 **a** 尖端與機針 **c** 的間隙，應確實將針卡入量具 **b** 凹槽內，此時旋轉手輪擺動下飾線勾針 **a** 到最左邊，其距離應為 4.76mm，調整方法由鬆開螺絲 **d** 來進行微調 (圖四)。

量具 **b**：零件本校車定規 K13-13 or K19-16
(ERP NO.07401916)



3-7. THE DISTANCE BETWEEN THE

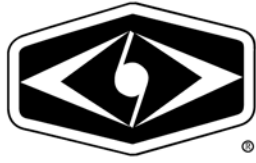
LOOPER AND NEEDLE

Warning!!

Please switch off electric power before installation & maintenance.

3-7-1 To turn the handwheel and move the looper "a" to the left dead point. Please lock the needle "c" into the groove of measuring gauge "b". The distance between the tip of looper and needle "c" is 4.76mm. Please loosen the screw for adjusting. (Fig 4)

Measuring gauge "b": K13-13 or K19-16 in spare parts book. (ERP NO.07401916)



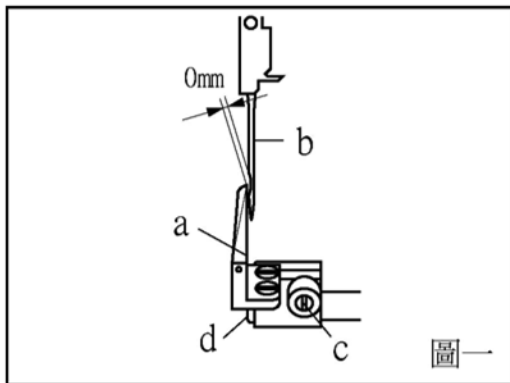
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3-8. 針擋與勾齒安裝與調整

警告!!

組裝維修作業前，請先關閉電源。

3-8-1 旋轉手輪，檢查下飾線勾針 **a** 是否與機針 **b** 有產生撞針現象，如果有產生撞針，先鬆開螺絲 **c**，由調節螺絲 **d** 進行間隙調整，調整時必須要注意下飾線勾針 **a** 與機針 **b** 第一隻短針接觸間隙為 0mm；當旋轉手輪時，下飾線勾針 **a** 從第二隻針到第五隻針所經過路徑與針的間隙呈現由小至大的變化（圖一）。



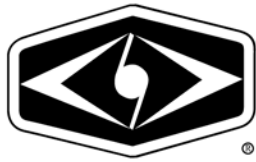
3-8. THE NEEDLE GUARD AND FEED

DOG

Warning!!

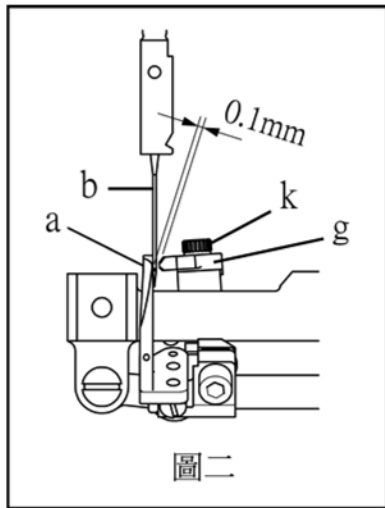
Please switch off electric power before installation & maintenance.

3-8-1 To turn the handwheel and check looper "a" has hit the needle "b" or not?? If yes, please loosen the screw "c" and adjusted the clearance via screw "d". Please note the clearance between the looper "a" and shortest needle is 0mm. Then, the clearance between looper "a" and 2nd needle to 5th needle are going to from small to a little large when turn the handwheel. (Fig 1)

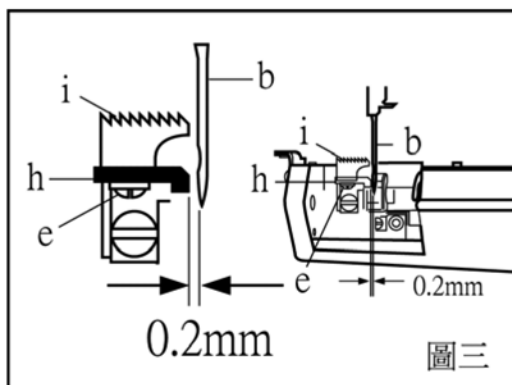


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3-8-2 旋轉手輪，當下飾線勾針 a 至機針 b 的第一支針時，用 2.5mm L 型板手打開螺絲 k 調整前針擋 g，前針擋 g 距離第一支針約 0.1mm 間隙，與第二、第三、第四、第五針皆為微小間隙不得碰撞 (圖二)。



3-8-3 將後針檔 h 鎖在後送齒 i 旁下的固定平面，鎖上後旋轉手輪時，機針 b 與後針檔 h 在最接近的距離應為 0.2mm，而間距的大小以鬆開螺絲 e 來調整 (圖三)。

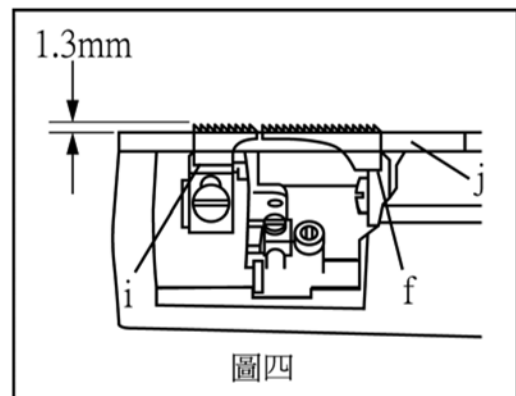


3-8-4 鎖上前送齒 f 後，利用針板 j 為基準平面，來調整前送齒 f 與後送齒 i 的高度，其作動時突出的高度的標準為 1.3mm (圖四)。

3-8-2 When turn handwheel to move looper "a" touch 1st needle (shortest one), please use 2.5mm Hex Key to loosen screw "k" for adjust front needle guard "g". The clearance between front needle guard and 1st needle is approx 0.1mm. Please also keep a minute clearance between 2nd, 3rd, 4th, 5th needle and front needle guard to avoid the collision. (Fig. 2)

3-8-3 Please install the rear needle guard "h" on the fixed plate of main feed dog "i". To turn the handwheel and make sure the closest clearance between needle "b" and rear guard "h" is 0.2mm. If the clearance isn't correct, please loosen the screw "e" to adjust it. (Fig 3)

3-8-4 Please adjust the height of feed dog after installed the differential feed dog. Please height of differential & main feed dog is 1.3mm from the needle plate "j" to the tip of feed dog. (Fig 4)





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3-9. 押腳組、上飾線勾針

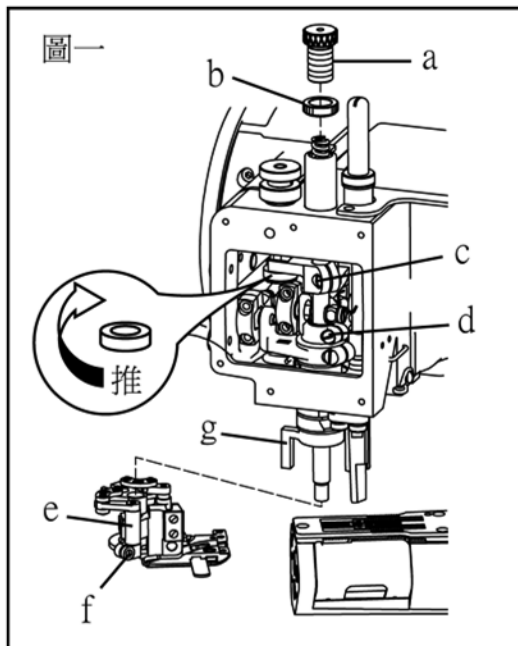
安裝與調整

警告!!

組裝維修作業前，請先關閉電源。

3-9-1 先取下調節螺絲 a 與保險螺帽 b，鬆開連接架上的螺絲 c；不論拆裝，勾夾襯套上的螺絲 d 絕對不可鬆開！否則會造成押腳有上下位移間隙產生 (圖一)。

*如果不小心鬆開，請參照步驟 3-9-6 操作！



3-9. THE INSTALLATION &

ADJUSTMENT OF PRESSER

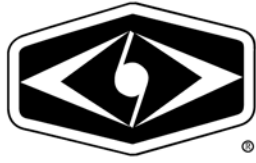
FOOT AND TOP COVER THREAD

Warning!!

Please switch off electric power before installation & maintenance.

3-9-1 Please take adjusting screw "a" and lock nut "b" out. Loosen the screw "c" on the connecting bracket. Please don't loosen the screw "d" on the carrier hook sleeve whether assembled or disassembled. If the screw "d" is loosen which will cause a unnecessary clearance at the presser foot lifted. (Fig 1)

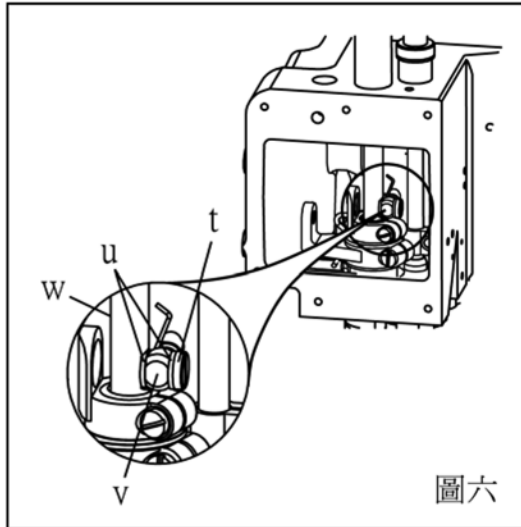
*Remark: If the screw "d" is loosen in incautious, please refer to the procedure of 3-9-6 to tighten it.



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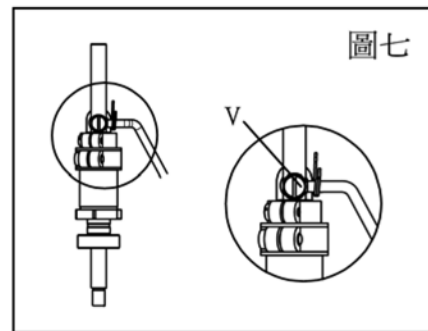
3-9-2 將螺絲 t 加裝 2 個墊片 u 穿過油管接頭 v，然後鎖上押腳推桿 w，再把螺絲 t 鎖緊 (圖六)，油管接頭 v 角度約略水平 (圖七)。

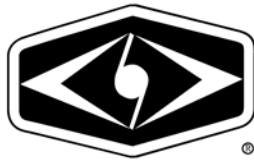
*注意！油管與針柱間需留有間隙，避免作動碰撞。



3-9-2 Please add 2 pieces spacers "u" on screw "t" and pass oil pipe fitting "v". Then, lock in presser bar "w". Please tighten screw "t" (Fig. 6) and keep the angle between screw "t" and oil pipe fitting "v" in level. (Fig. 7)

*Caution! Please always keep a clearance between oil pipe and presser bar to avoid those parts to hit each other.



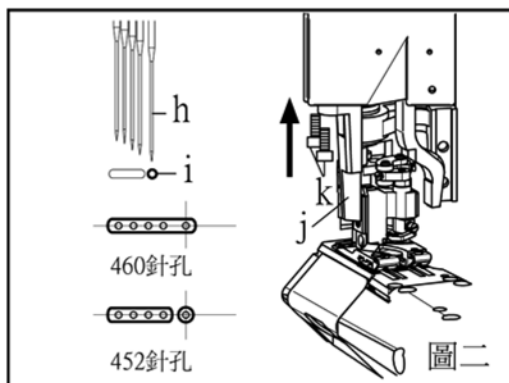


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3-9-3 將押腳 f 裝入導件 g 並貼靠於導件 g，再放入押腳軸心並鎖上螺絲 e (圖一)，以假針中心 h 對應到押腳假針孔中心 i，再裝上導件 j 並確時貼靠密合，注意螺絲 k 應平均施力鎖入，確認押腳無間隙，手持推動上下能滑順 (圖二)！旋轉手輪，在下停針位置裝回調節螺絲 a 與保險螺帽 b 鎖緊連接架螺絲 c (圖一)。

*注意！鎖緊連接架螺絲 c 時，應注意其下方矽膠墊圈不可壓迫過緊，需保持手指仍可稍微出力推動旋轉為原則。

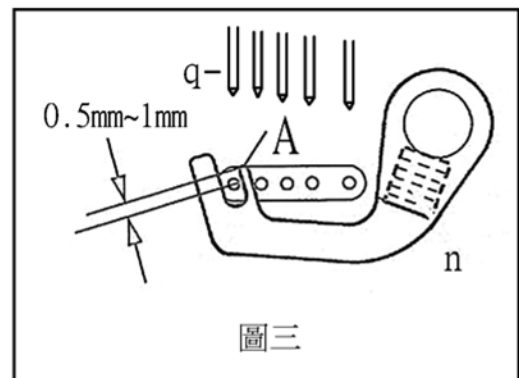
3-9-4 機針 q 在行進至短上飾線勾針 n 尖端的凹槽 A 內，機針 q 與凹槽 A 開口部位應保持 0.5mm~1mm 的距離 (圖三)。



3-9-3 Please install the presser foot "f" with presser foot guider "g" in close. Then, to install to the presser bar and tighten it by screw "e". (Fig 1) The fake needle "h" aims to the center of needle hole "i" and install presser foot guide "j" in close. Please tighten the 2 screws "k" in equally and make sure there isn't any unnecessary clearance. Then, the presser foot is lifted in smoothly by hand (Fig 2) ! To turn the handwheel and install the adjusting screw "a" and lock "b". To tighten the screw "c" on the connecting bracket (Fig 1).

*Remark: When tighten the screw "c" on the connecting bracket, please don't press the connecting bracket cushion too hard which could be gone around by finger push.

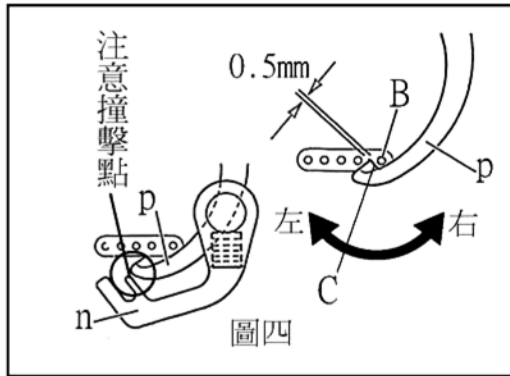
3-9-4 When the shortest needle "q" move to the groove "A" of short top cover thread carrier tip. The clearance between the shortest needle "q" and the top of groove "A" is 0.5mm ~ 1mm (Fig 3).





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3-9-5 旋轉手輪，將長上飾線勾針 p 的 C 斜面邊緣底部與假針 B 應距離約 0.5mm，並必須注意短上飾線勾針 n 與長上飾線勾針 p 在會合時不可以撞擊 (圖四)。



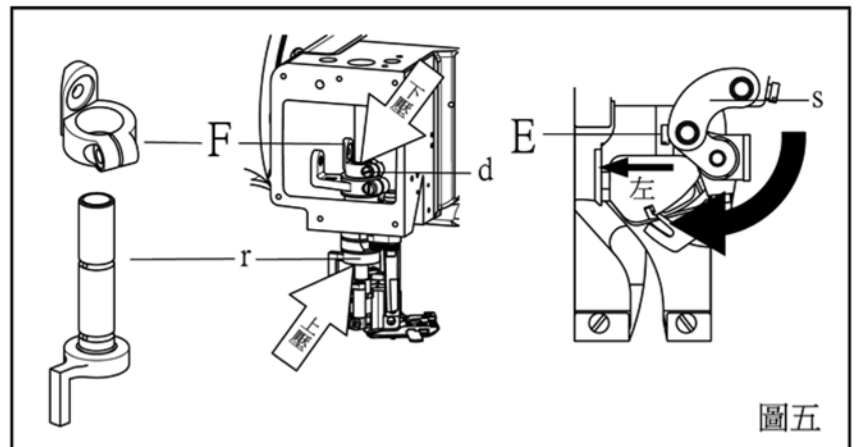
3-9-6 當不小心鬆開勾夾襯套螺絲 d 的操作說明：(圖一)

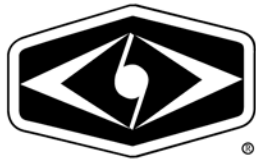
將組件 s 向左轉動，讓螺絲 E 朝向左邊，手指壓住勾夾襯套 F 與組件 r 再鎖緊螺絲 d (圖五)。

3-9-5 To turn the handwheel and move the hook edge "C" of long top cover thread carrier "p" to the fake needle "B". The clearance between the hook edge "C" of long top cover thread carrier "p" and fake needle "B" is 0.5mm. Please take care that the short & long top cover thread carrier can't be hit each other when they be crossed (Fig 4).

3-9-6 The operated procedure how to tighten the screw "d" (Fig 1) :

To turn the parts "s" to the left which to let the screw "E" face to the left. To press the carrier hook sleeve lever and parts "r". Then, tighten the screw "d" (Fig 5).





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3-10. 切布刀組裝與押腳調整

警告!!

組裝維修作業前，請先關閉電源。

3-10-1 將上刀片固定座組 C 用螺絲 b 鎖入，暫時固定，再把上刀片固定座組 C 往上推緊靠固定孔上緣再鎖緊螺絲 b (圖一)；鬆開螺絲 Q 裝入下刀片 a，刀尖 A 點必須對應到第一支短針 B 中心；旋轉手輪，帶動活動刀座 F 至最左停止點，將螺絲 R 鬆開，將位移上刀片 c 上的 k 點接觸保持與下刀片 a 約 0.5mm 的長度量即可 (圖一 A)。

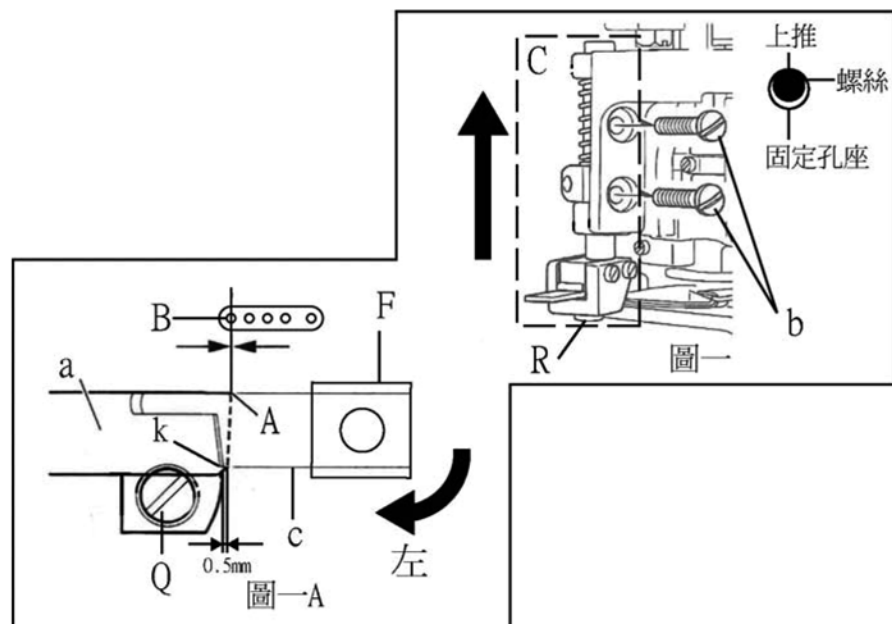
3-10. THE ADJUSTMENT OF FABRIC

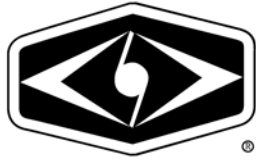
CUTTER AND PRESSER FOOT

Warning!!

Please switch off electric power before installation & maintenance.

3-10-1 Please use the screw "b" to hold the upper knife holder guide collar "C". Then, to push upper holder guide collar "C" up to close the top of fixed hole and tighten it by screw "b" (Fig 1). Loosen screw "Q" and install the lower knife "a". The tip of lower knife has to aim the center of shortest needle. To turn the handwheel and move the moving knife holder "F" to the left dead point. Loosen the screw "R" and adjust the clearance of upper and lower knife. The touch point clearance between the "k" point of upper knife "c" and lower knife "a" is 0.5mm (Fig 1A).

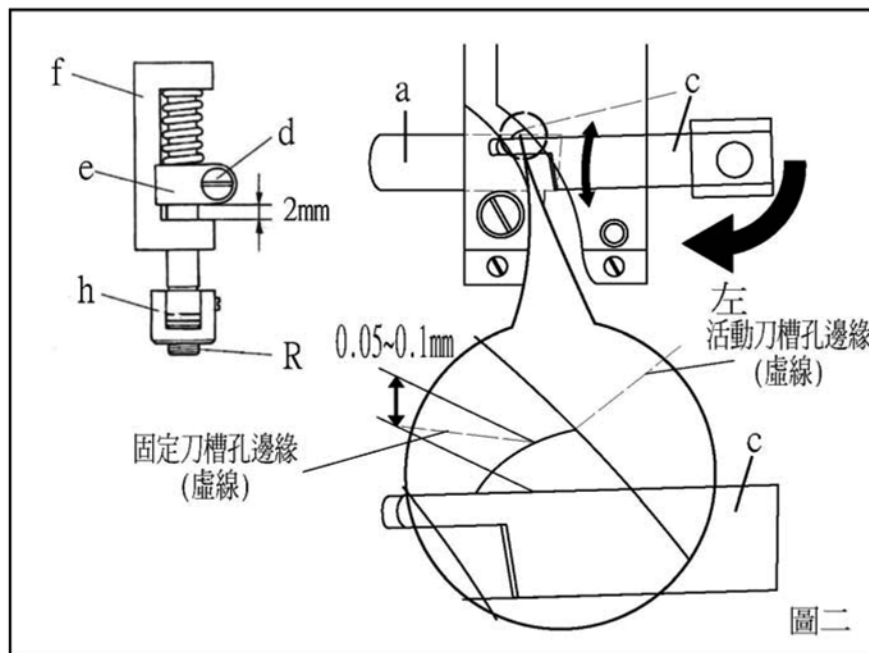


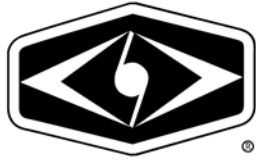


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3-10-2 調整活動刀片彈簧壓力與刀片前後組裝位置；襯套 e 上的螺絲 d 保持鬆開狀態，並與 f 接觸平面的位置放入 2mm 厚的墊塊，接著將 h 稍微上推（注意押腳不可隨著連動或位移），在調整刀片 c 時，應與固定刀槽孔邊緣應保持約 0.05~0.1mm 之距離（避免活動刀 c 作動時撞擊），然後鎖緊螺絲 d（圖二）。

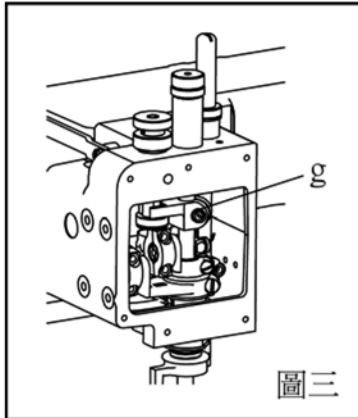
3-10-2 How to adjust the pressure of moving knife spring and the front -rear position of knife blade. Loosen the screw "d" of knife guide collar "e". Then, please push the upper knife holder "h" up and insert "a" 2mm pad between knife holder guide collar "e" and knife holder shank support "f" (Remark : The presser foot couldn't be moved when you push the knife holder "h"). The clearance between the fixed knife and moving knife is 0.05mm ~ 0.1mm which to avoid the moving knife hit the fixed knife. Then, tighten the screw "d" (Fig 2).



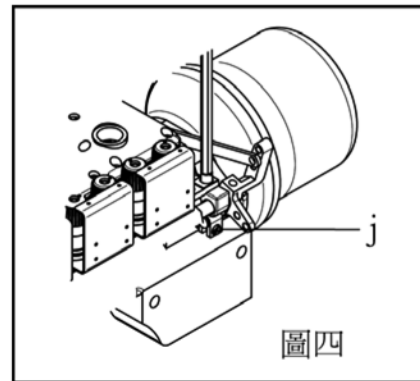


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3-10-3 在押腳抬高作動時，須注意押腳推桿連接架 g 避免撞擊車台本體 (圖三)，並同時應注意上切刀固定座柄 f 也不能碰撞上切刀固定座 h (圖二)；當撞擊發生時，調整抬押腳軸上的螺絲 j (圖四)。



3-10-3 When the presser foot is lifted. Please avoid the presser bar connecting bracket to hit the machine body (Fig 3) and the upper knife holder "h" hit the knife holder shank support "f" (Fig 2). When the hit is be happen. Please loosen the screw "j" of presser foot lifter shaft to adjust it (Fig 4).





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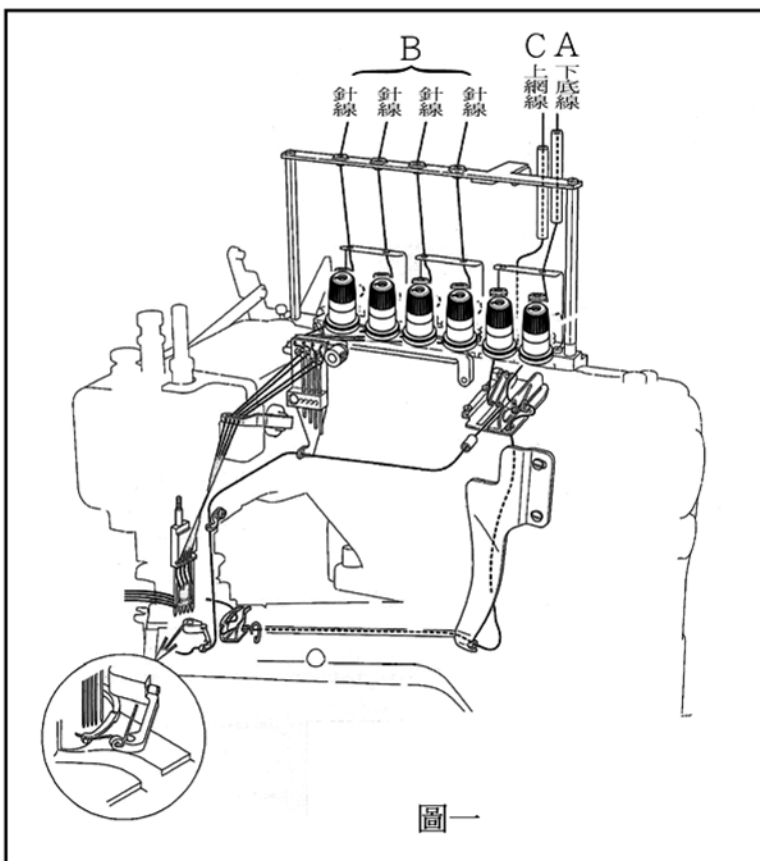
3-11. 線基本安裝與調整

警告!!

組裝維修作業前，請先關閉電源。

3-11-1 在進行穿線作業時，請依 A、B、C 順序穿線 (圖一)。

3-11-2 在進行 B 穿線時，必須讓線確時穿入鬆緊調鈕線槽內 (圖二 A) 及過線彈簧 a 的底部 (圖二)。



圖一

3-11. THE THREADING AND

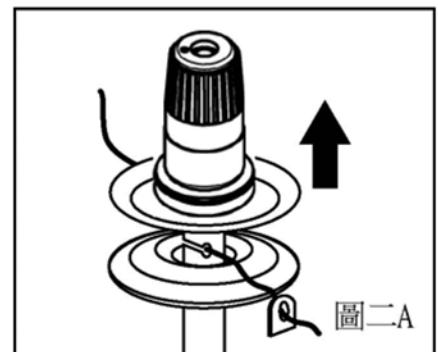
ADJUSTMENT

Warning!!

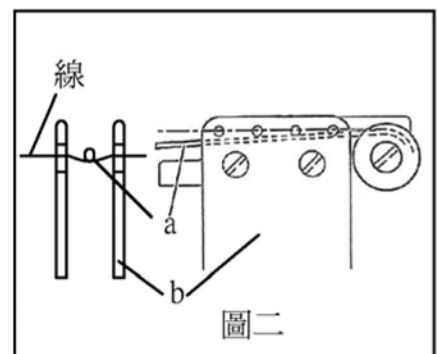
Please switch off electric power before installation & maintenance.

3-11-1 Please follow the procedure A.B.C. to thread (Fig 1).

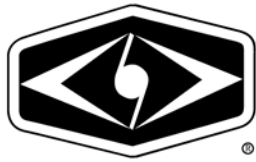
3-11-2 The thread have to pass the inside of thread tension disc (Fig 2A) and the bottom of stitch unlocking spring "a" when thread the "B" section (Fig 2).



圖二A



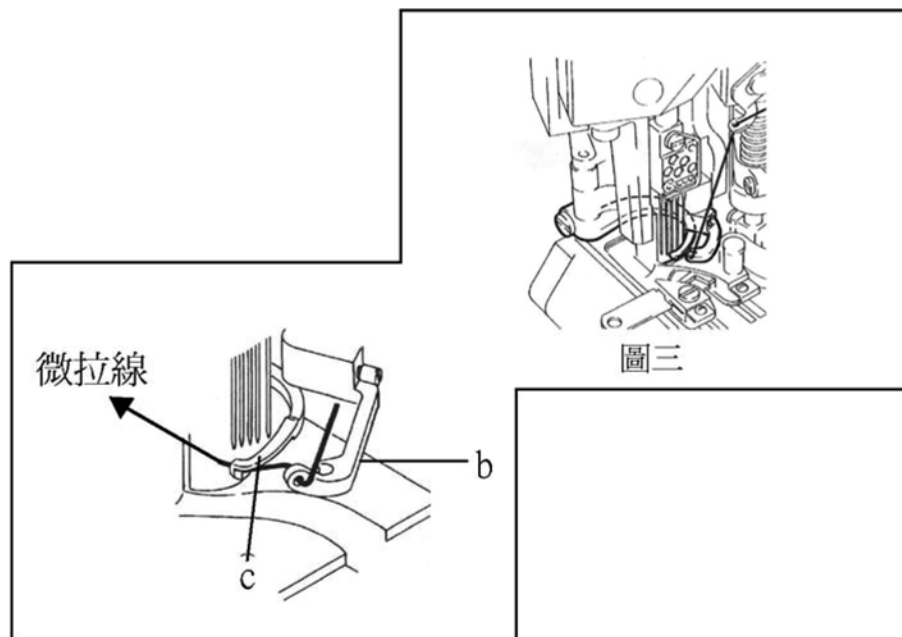
圖二



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3-11-3 在進行長上飾線勾針 c 穿線前，抬高押腳組，將布放在針板上，旋轉手輪兩圈，先讓針線與下底線實施縫紉打結動作，並注意上網線確實勾於短上飾線勾針 b 前端凹槽內，再將手微拉緊線，旋轉手輪一圈，讓線勾在長上飾線勾針 c 上，才可以試車，實施縫紉作業 (圖三)。

3-11-3 After thread the "c" section, please lift the presser foot and put in the fabric. To turn the hand-wheel in 2 times which to let the needle thread have interlocked with looper thread. Please make sure the top cover thread have hooked on the front groove of short top cover thread carrier "b". Then, pull the top cover thread by hand lightly. To turn the handwheel in one time and make sure the top cover thread have hooked on the long top cover thread carrier. Then, the machine could be operated as usual (Fig 3).



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星銳牌工業用縫紉機

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