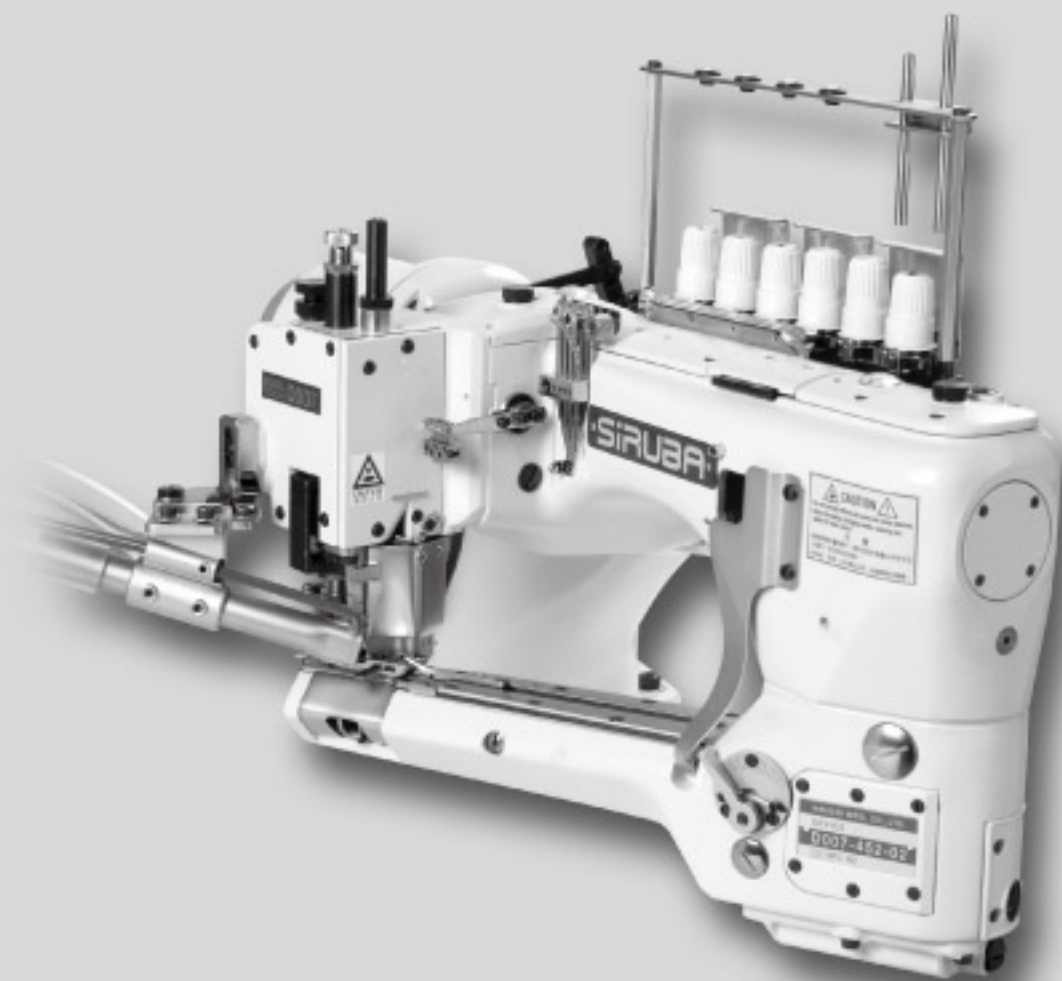


SIRUBA®
銀箭牌工業用縫紉機
INDUSTRIAL SEWING MACHINE

D007R

使用說明書 INSTRUCTION BOOK



CE

 高林股份有限公司
KAULIN MFG. CO., LTD.

一. 安全上的注意事項

1-1 作業環境的安全	1
1-2 安裝的安全	1
1-3 操作中的安全	2
1-4 保養維修的安全	2
1-5 警告標示	3

二. 使用說明

2-1 潤滑油之添加	5
2-2 潤滑油之更換	6

三. 調整說明

3-1 下飾線勾針安裝與調整	7
3-2 下飾線勾針量具與針板距離	7
3-3 針位高度與水平	8
3-4 下飾線勾針前後調整	9
3-5 下飾線勾針左右運動量調整	11
3-6 下飾線勾針左右量調整與針柱距離	12
3-7 下飾線勾針與針距離	13
3-8 針檔與勾齒安裝與調整	13
3-9 押腳組. 上飾線勾針安裝與調整	14
3-10 切布刀組裝與押腳調整	15
3-11 線基本安裝與調整	16

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，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：

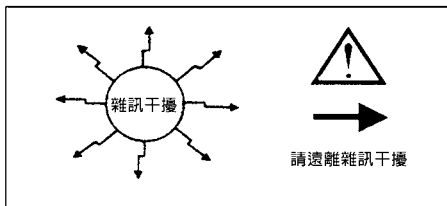
電源電壓請遵照馬達與控制箱銘牌所標示之規格±10%範圍內操作。

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。



1-2 安裝的安全

1-2-1 機器、馬達、控制箱：

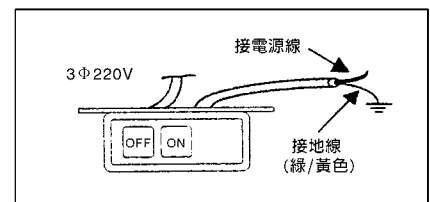
請遵照說明書正確安裝。

1-2-2 電源線：

- (1) 請注意不要被外物壓住或過度扭曲電源線。
- (2) 裝釘電源線時請不要靠近會轉動的手輪、皮帶輪及三角皮帶，最少要離開3~5公分以上。

1-2-3 接地：

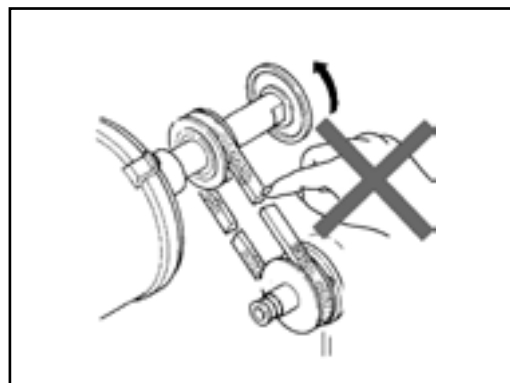
- (1) 為防止雜訊干擾或漏電事故，請作好接地工程。
- (2) 電源線的接地線須以適當大小的導線和接頭連接到生產工廠的系統地線，此連接必須被永久固定。



接地線(綠/黃色)請務必做好接地工程。
如果沒有接地，漏電流，將對人體造成不適或傷害。

1-3 操作中的安全

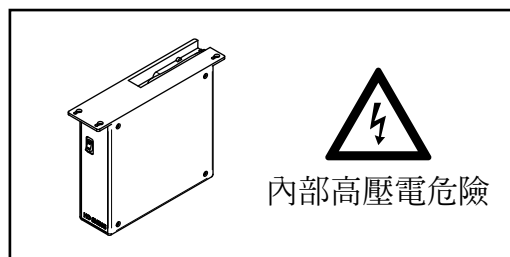
- 1-3-1 在第一次開電後，請先以低速操作縫紉機，並檢查轉動方向是否正確。
- 1-3-2 縫紉機運轉時請勿去觸摸手輪、針、押腳.....等易造成人體傷害的機構部位。
- 1-3-3 請不要在拆下馬達護蓋及其他安全裝置的情形下操作。
- 1-3-4 操作縫紉機時，針棒前方之鋁製護目板，不可以打開。
- 1-3-5 縫紉機運轉時，請不要用手或其他物品觸碰皮帶以免造成人體傷害。（圖一）



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。



1-5 警告標示

1-5-1 以下的這些符號即表示有一定有程度上的危險，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。

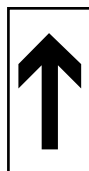
1-5-2 縫紉機上的警告標示：



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。

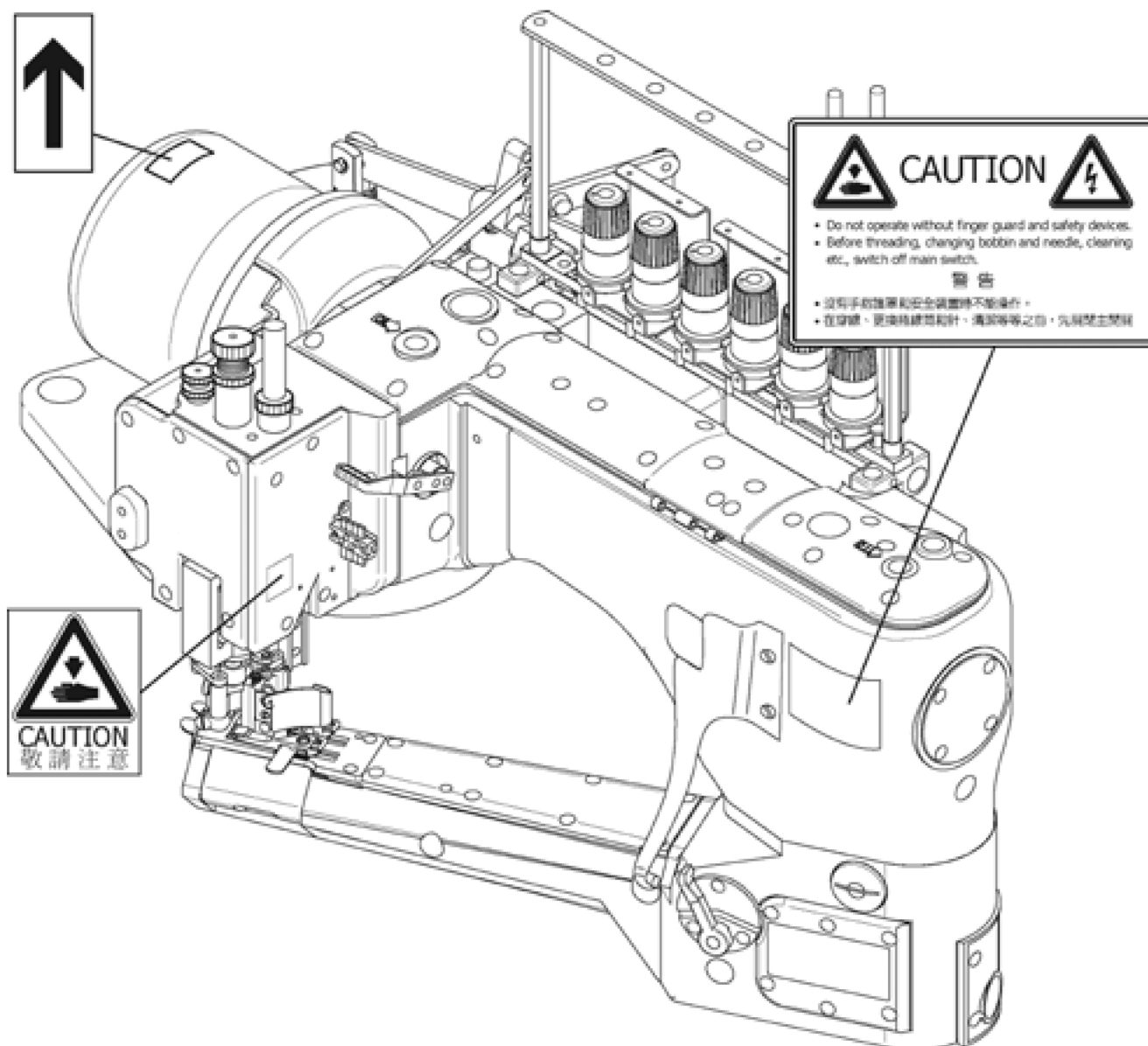


皮帶輪與馬達運轉方向。



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。

1-5-3 警告標示位置圖：



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

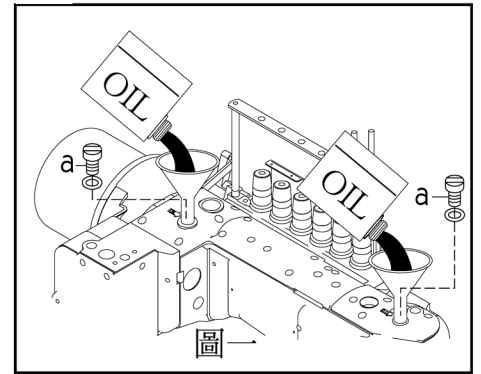
2-1 潤滑油之添加



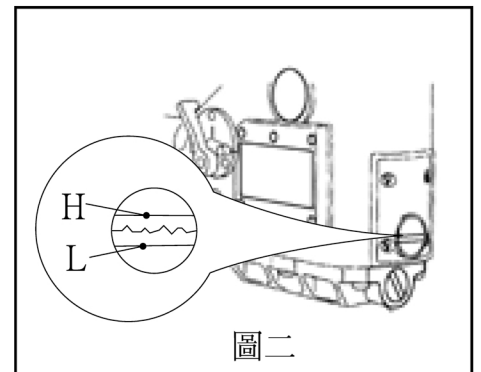
警告

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

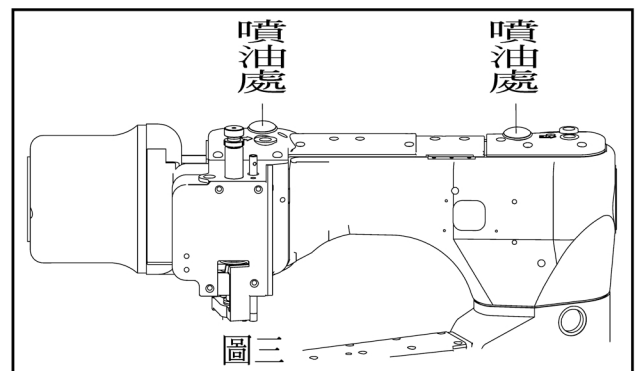
- 2-1-1 請選用與DAPAE FLUID 32T(針車油)同級之潤滑油。



- 2-1-2 在新機使用前請先注入潤滑油。鬆開取下螺絲a，將油緩慢注入機器中（圖一），待油量滿至油標指示窗（圖二）上下線之間即可。



- 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。

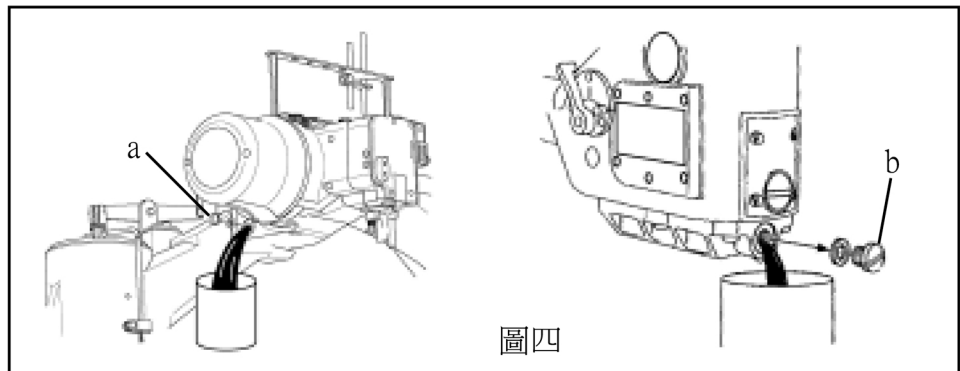


2-2 潤滑油之更換



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。



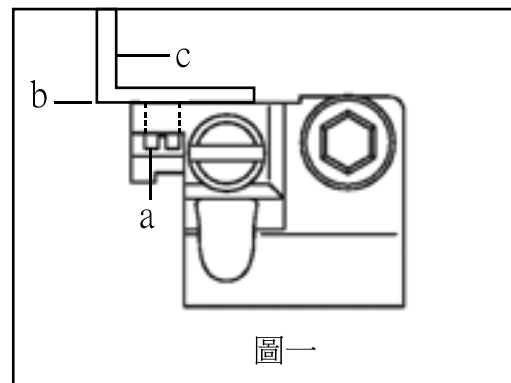
3-1 下飾線勾針安裝與調整



警告

組裝維修作業前,請先關閉電源

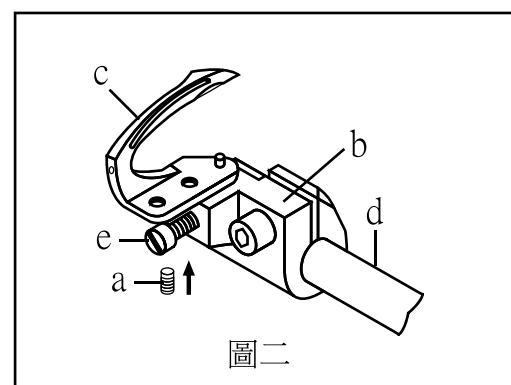
3-1-1. 檢查螺絲a不可突出下勾針固定座b的平面 (圖一)並將下勾針固定座固定於下勾針搖桿軸d (圖二)。



圖一

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鎖緊並且將螺絲鎖上頂到下飾線勾針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



圖二

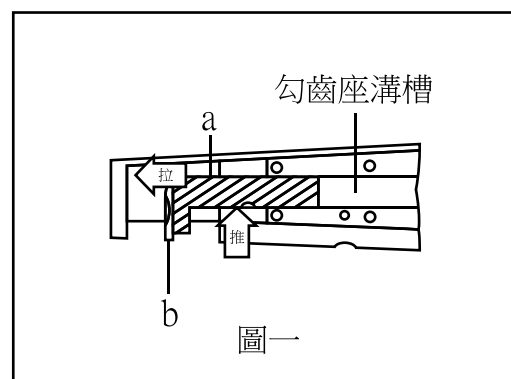
3-2 下飾線勾針量具與針板距離



警告

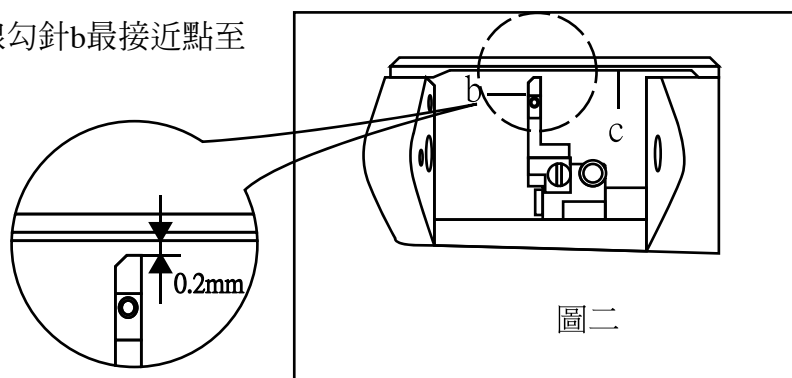
組裝維修作業前,請先關閉電源

3-2-1. 使用量具a時,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平面呈現垂直狀態 (圖一)。



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)。



圖二

3-3 針位高度與水平



警告

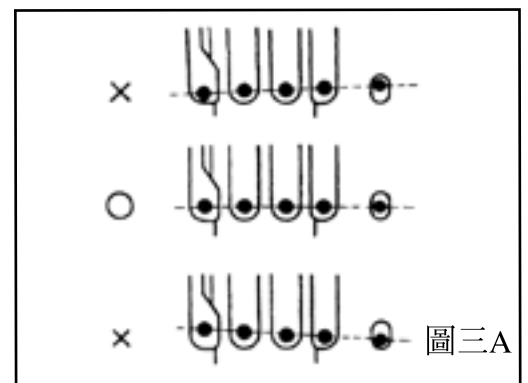
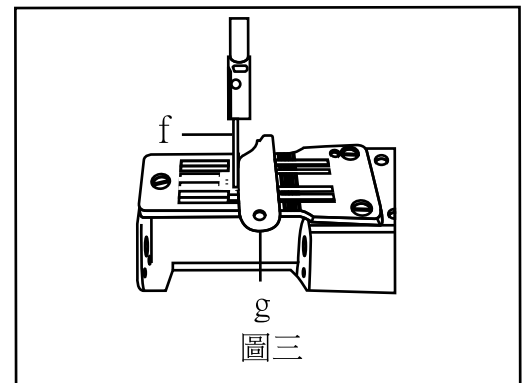
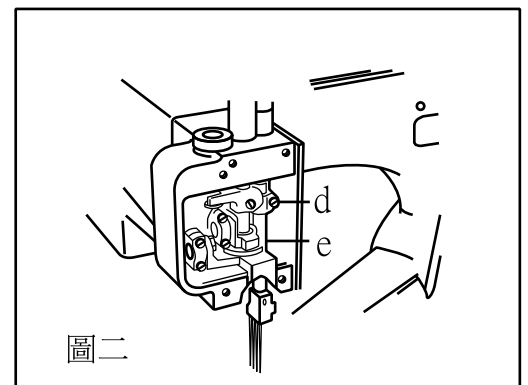
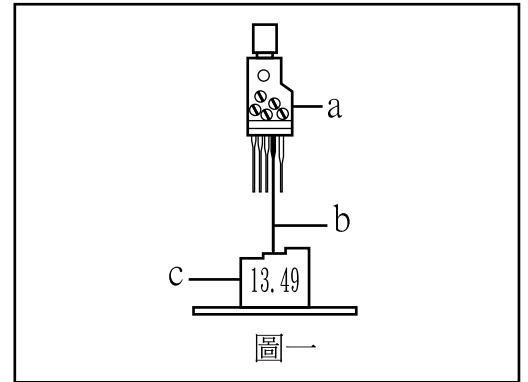
組裝維修作業前，請先關閉電源

- 3-3-1. 將針錐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	13.08
4	6.4	12.70

- 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！



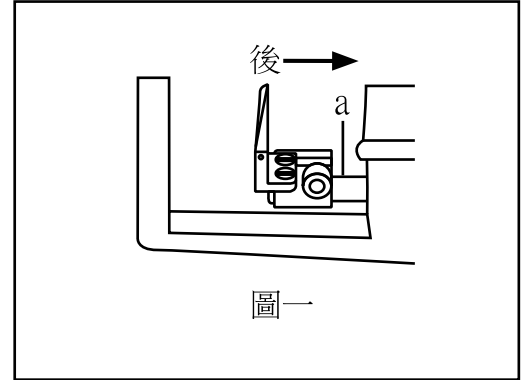
3-4 下飾線勾針前後調整



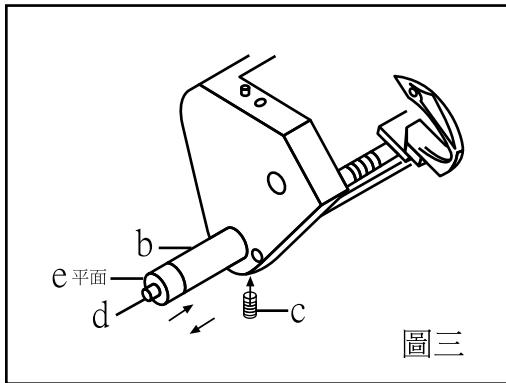
警告

組裝維修作業前,請先關閉電源

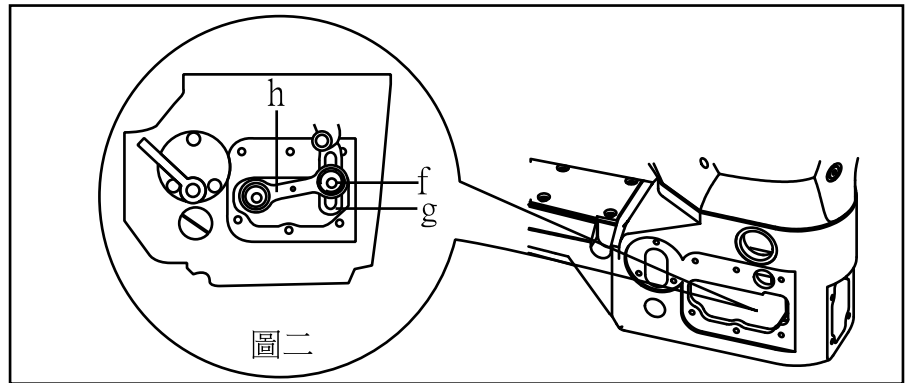
- 3-4-1. 旋轉手輪,使下勾針搖桿軸a移動至最後位置(圖一)並且調整螺絲f讓下勾針前後連桿h位移至勾齒台座g的溝槽中間位置(圖二)。
- 3-4-2. 將量具b從下巴套筒前端的孔裝入,調整量具b使柱塞d與e平面切齊再以螺絲c固定量具b鎖緊(圖三),完成後可以參考(圖四A)。



圖一

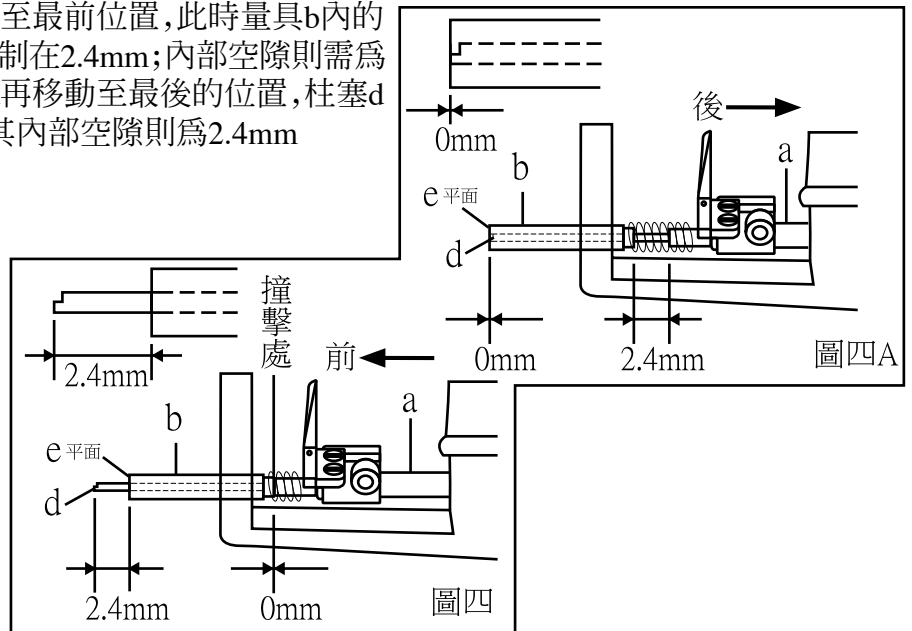


圖三



圖二

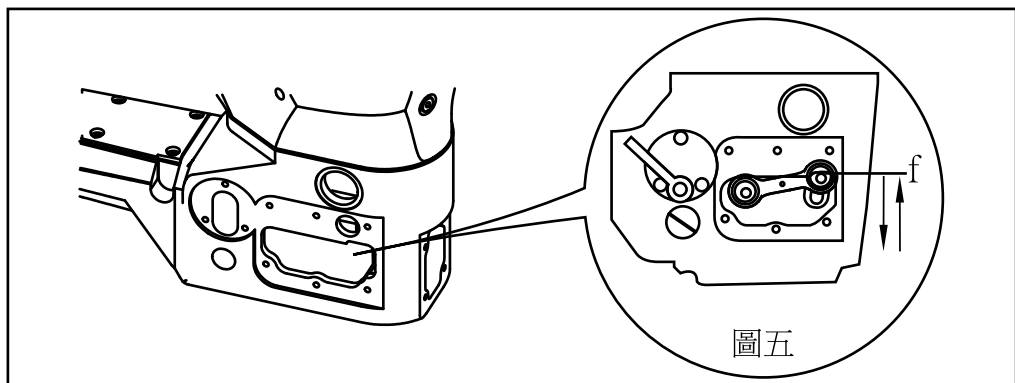
- 3-4-3. 旋轉手輪,使下勾針搖桿軸a移動至最前位置,此時量具b內的柱塞d會被推出,而推出長度需控制在2.4mm;內部空隙則需為歸零(圖四)。當下勾針搖桿軸a再移動至最後的位置,柱塞d需如圖切齊e平面,即表示歸零,其內部空隙則為2.4mm(圖四A)



圖四A

圖四

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。



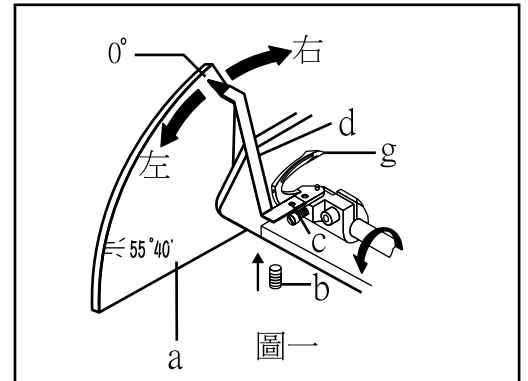
3-5 下飾線勾針左右運動量調整



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盡量接近刻度板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，使指針d所指的刻度55°40'不可有偏差(圖一)。

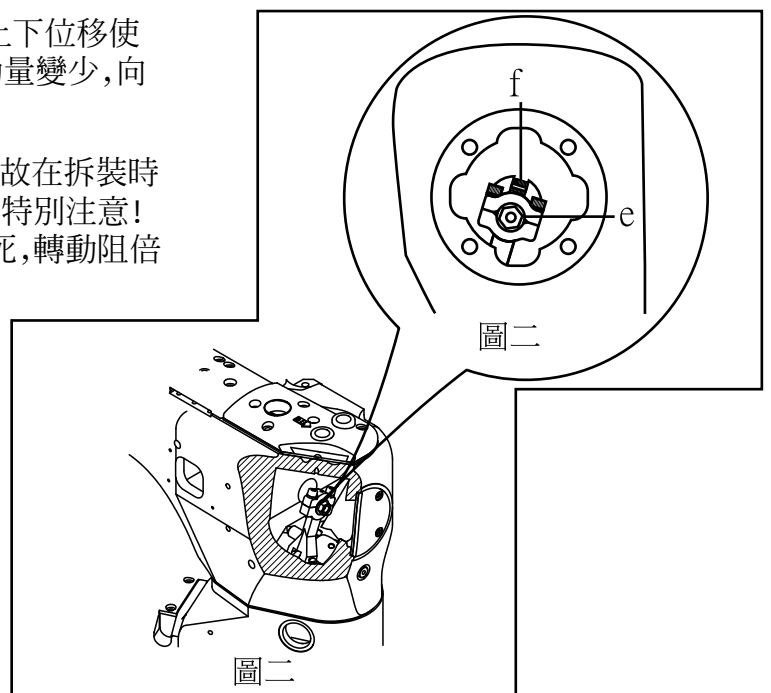


*使用針距規格不同，其量具a校正規格亦不同，如下表所示：

針數	針距	量具c校正規格
4	4.8	54°40'
4	5.2	55°40'
5	5.2	55°40'
4	6.0	56°40'
4	6.4	57°40'

- 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!並在鎖緊施力需適當，過緊將造成零件卡死，轉動阻倍增而故障。



3-6 下飾線勾針左右量與針柱距離



警告

組裝維修作業前,請先關閉電源

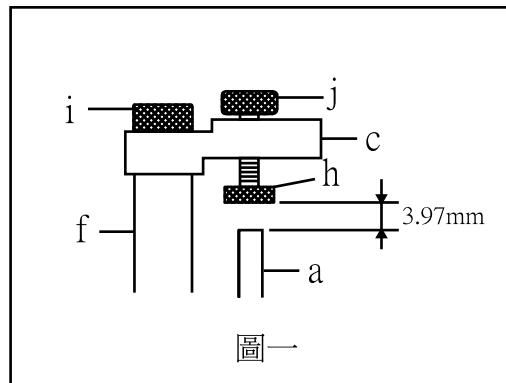
3-6-1. 旋轉手輪,使針柱位移至最高點位置,此時鬆開*螺絲s(圖三) 註解*

*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。

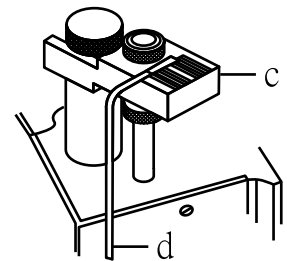
3-6-2. 刻度量具c放置於押腳套管f上,利用調整螺絲i鎖住,旋轉手輪使針柱a位移最低點位置,同時調整止塊螺絲j與止塊螺絲h,使得止塊螺絲h下方平面與針柱頂端距離3.97mm的間隙(圖一)。

3-6-3. 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)。

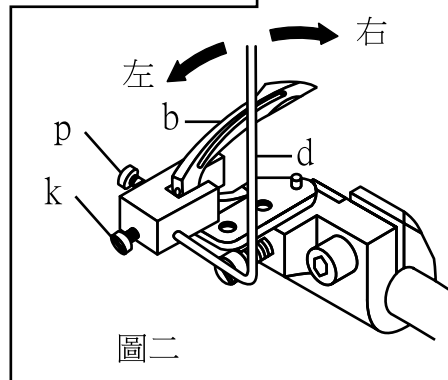
3-6-4. 將指針左右擺動於同一刻度上的調整方法,由前後軸連接襯套g鬆開螺絲e進行調整(圖三)。



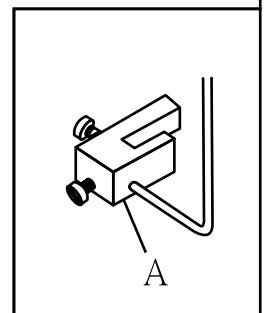
圖一



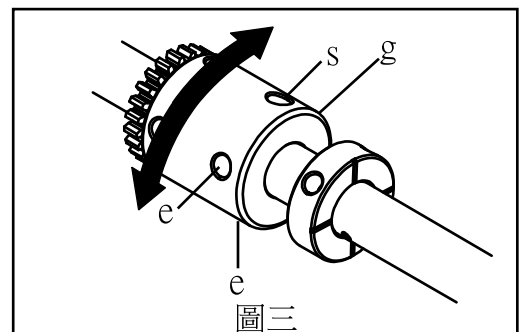
圖二A



圖二



A



圖三

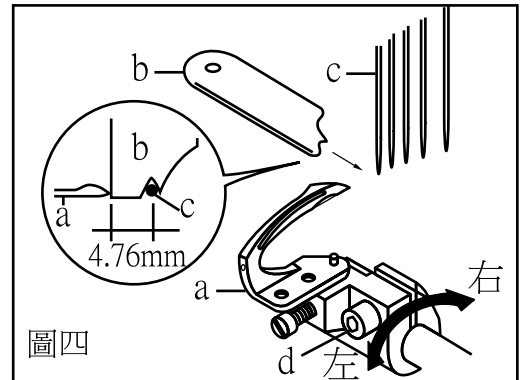
3-7 下飾線勾針與針距離



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尖端與擊針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）。



圖四

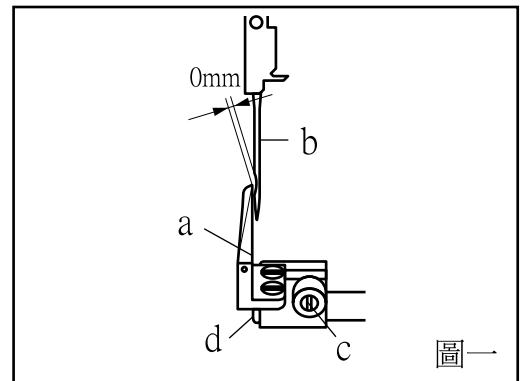
3-8 針檔與勾齒



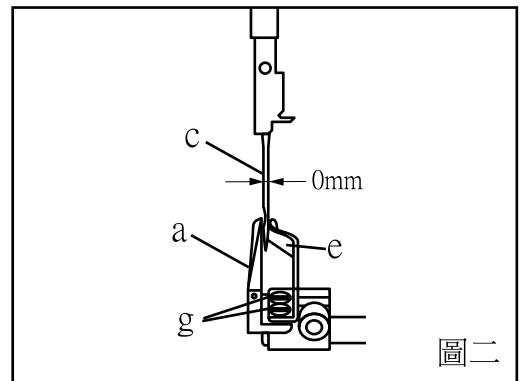
警告

組裝維修作業前，請先關閉電源

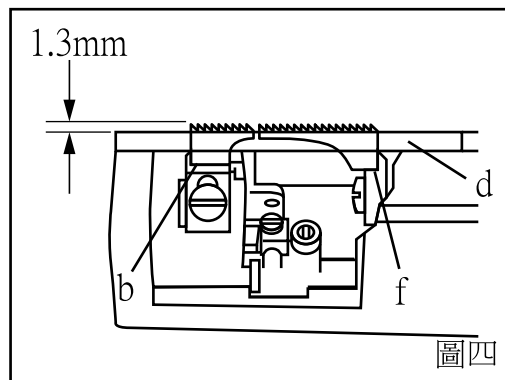
- 3-8-1. 旋轉手輪，檢查下飾線勾針a是否與擊針b有產生撞針現象，如果有產生撞針，先鬆開螺絲c由調節螺絲d進行間隙調整，調整時必須要注意下飾線勾針a與擊針b第一隻短針接觸間隙為0mm；當旋轉手輪時，下飾線勾針a從第二隻針到第五隻針所經過路徑與針的間隙呈現由小至大的變化（圖一）。
- 3-8-2. 使用螺絲g將前針檔e鎖在下飾線勾針a的固定平面上，調整前針檔e使擊針c緊貼下飾線勾針a併列與前針檔e的中間，不可以有間隙，在進行擺動時，又不能產生撞針現象（圖二）。
- 3-8-3. 將後針檔c鎖在後送齒b旁下的固定平面，鎖上後旋轉手輪時，擊針a與後針檔c在最接近的距離應為0.5mm，而間距的大小以鬆開螺絲e來調整（圖三）。
- 3-8-4. 鎖上前送齒f後，利用針板d為基準平面，來調整前送齒f與後送齒b的高度，其作動時突出的高度的標準為1.3mm（圖四）。



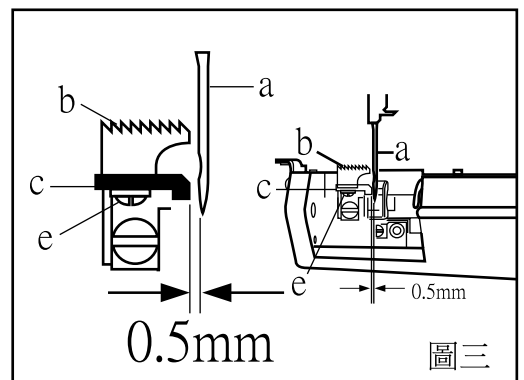
圖一



圖二



圖四



圖三

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5操作!

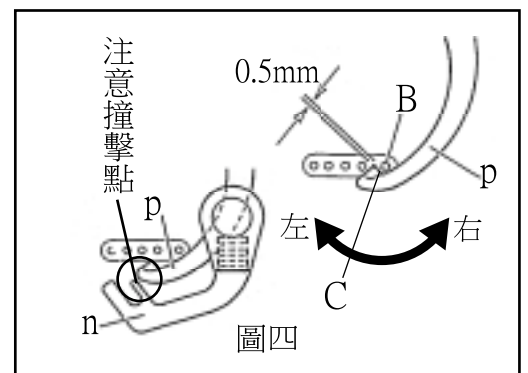
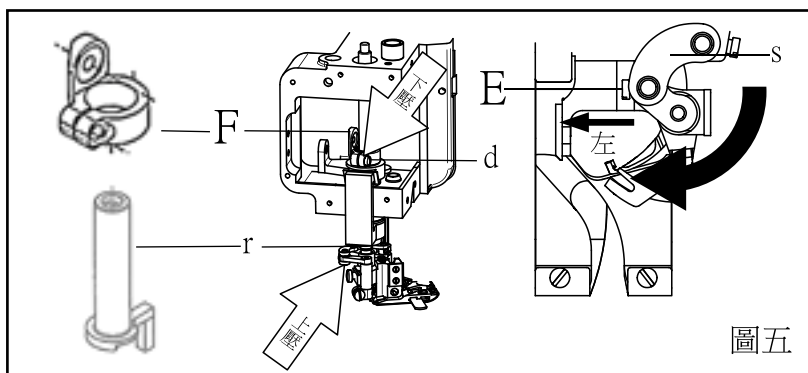
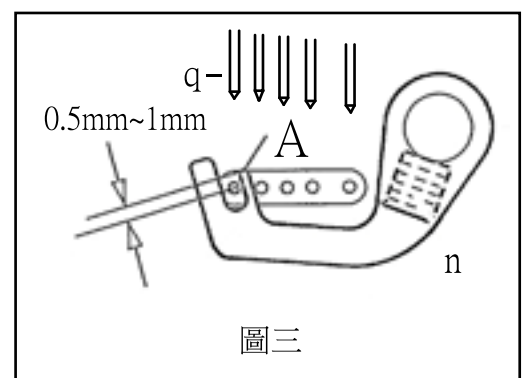
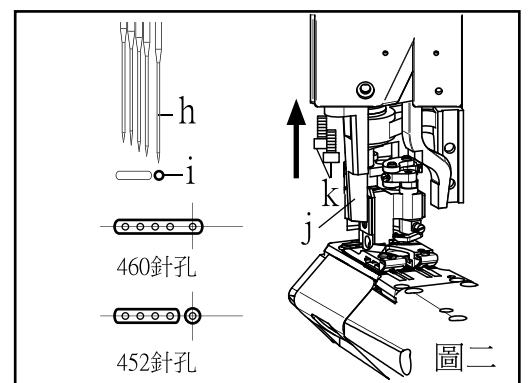
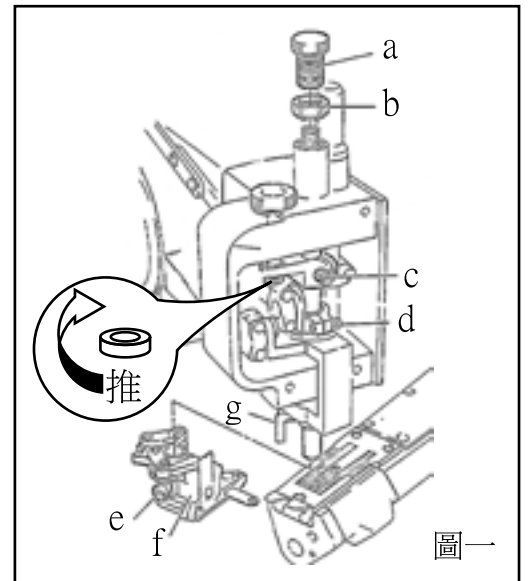
3-9-2. 將押腳f裝入導件g並貼靠於導件g,再放入押腳軸心並鎖上螺絲e(圖一),以假針中心h對應到押腳假針孔中心i再裝上導件j並確時貼靠密合,注意螺絲k鎖入應平均施力鎖入,確認押腳無間隙,手持推動上下能滑順(圖二)!旋轉手輪,在下停針位置裝回調節螺絲a與保險螺帽b鎖緊連接架螺絲c(圖一)。

*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。

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

3-9-4. 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)。

3-9-5. 當不小心鬆開(圖一)勾夾襯套螺絲d的操作說明: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)。



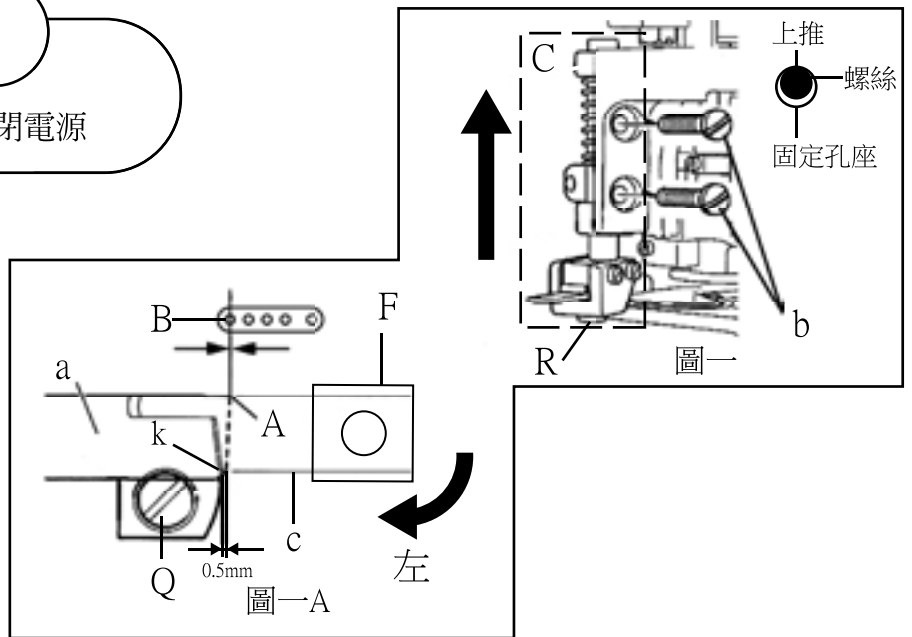
3-10 切布刀組裝與押腳調整



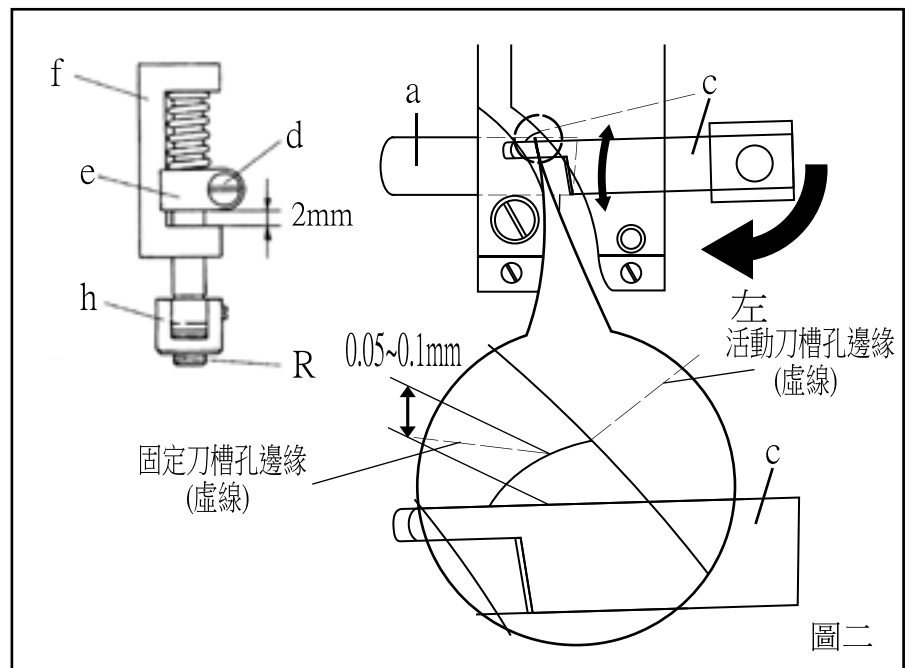
警告

組裝維修作業前，請先關閉電源

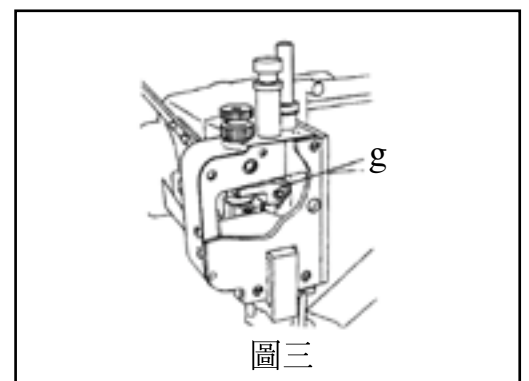
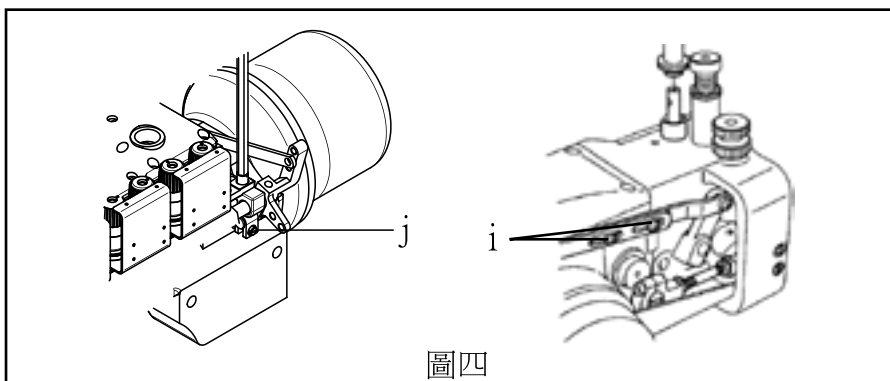
3-10-1. 將上刀片固定座組C用螺絲b鎖入暫固定，再把上刀片固定座組C往上推緊靠固定孔上緣再鎖緊螺絲b(圖一)；鬆開螺絲Q裝入下刀片a，刀尖A點必須對應到第一支短針B中心；旋轉手輪，帶動活動刀座F至最左停止點，將螺絲R鬆開，將位移上刀片c上的k點接觸保持與下刀片a約0.5mm的長度量即可(圖一A)。



3-10-2. 調整活動刀片彈簧壓力與刀片前後組裝位置；e襯套上螺絲d保持鬆開狀態並與f接觸平面位置放入2mm厚的墊塊，將h稍微上推(注意壓腳不可隨著連動或位移)，在調整刀片c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)，鎖緊螺絲d(圖二)。



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，可利用鬆開螺絲i調整，或調整抬押腳軸上的螺絲j(圖四)。



3-11 線基本安裝與調整

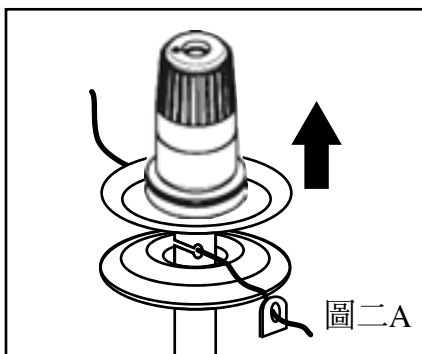


警告

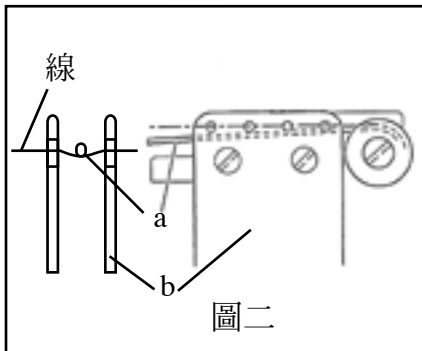
組裝維修作業前，請先關閉電源

3-11-1. 在進行穿線作業時，請依A.B.C順序穿線（圖一）。

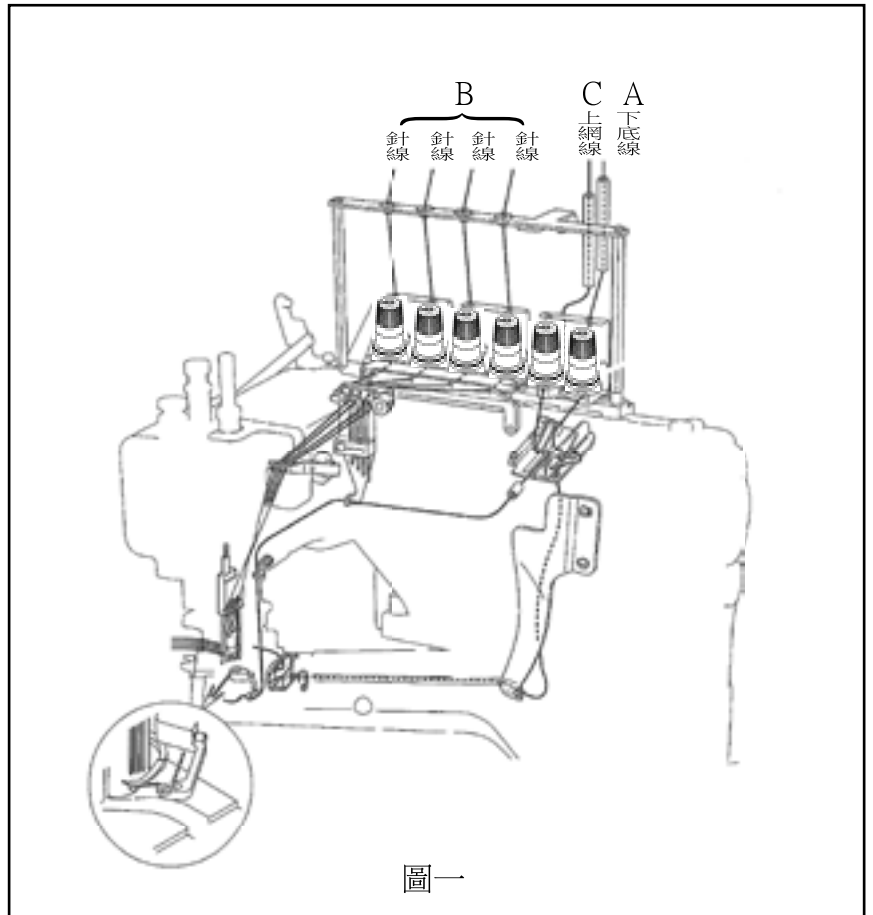
3-11-2. 在進行B穿線時必須讓線確時穿入鬆緊調鈕線槽內(圖二A)及過線彈簧a的底部（圖二）。



圖二A

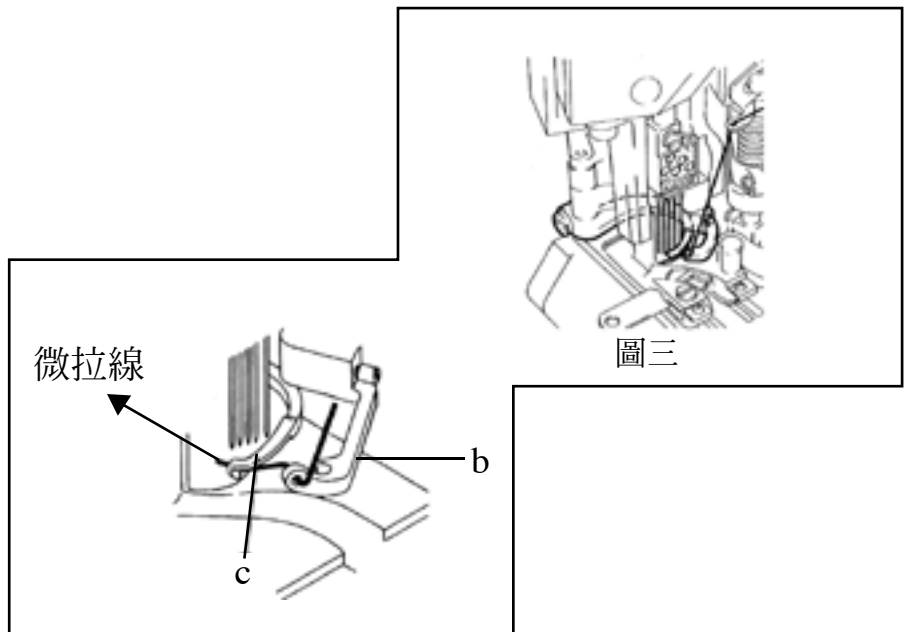


圖二



圖一

3-11-3. 在進行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）。



圖三

一、 SAFETY PRECAUTION

1-1 WORK ENVIRONMENT	1
1-2 SAFETY IN INSTALLATION	1
1-3 SAFETY IN OPERATING	2
1-4 SAFETY IN MAINTENANCE AND REPAIRS	2
1-5 WARNING SIGNS	3

二、 OPERATION GUIDE

2-1 THE FILLING OF LUBRICATION OIL	5
2-2 OIL CHANGE	6

三、 ADJUSTMENT GUIDE

3-1 THE INSTALLATION & ADJUSTMENT OF LOOPER	7
3-2 THE CLEARANCE BETWEEN LOOPER AND NEEDLE PLATE	7
3-3 THE HEIGHT OF NEEDLE BAR	8
3-4 THE ADJUSTMENT OF LOOPER MOVED FRONT & REAR POSITION	9
3-5 THE ADJUSTMENT OF LOOPER MOVED RIGHT & LEFT POSITION	11
3-6 THE ADJUSTMENT OF LOOPER MOVED RIGHT & LEFT POSITION AND NEEDLE BAR.	12
3-7 THE DISTANCE BETWEEN THE LOOPER AND NEEDLE	13
3-8 THE NEEDLE GUARD AND FEED DOG.	13
3-9 THE INSTALLATION & ADJUSTMENT OF PRESSER FOOT AND TOP COVER THREAD.	14
3-10 THE ADJUSTMENT OF FABRIC CUTTER AND PRESSER FOOT	15
3-11 THE THREADING AND ADJUSTMENT	16

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 :

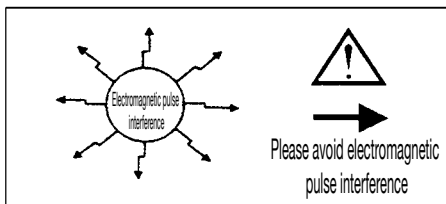
Only use Power Voltage indicated on the name plate of the HVP-70 + 10% ranges

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



1-2 SAFETY IN INSTALLATION

1-2-1 Motor and control box :

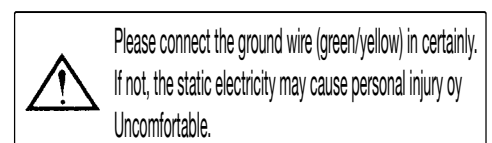
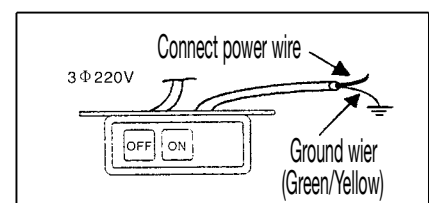
Follow the instruction in this manual for correct installation.

1-2-2 Power cord :

- (1) Avoid power cord being applied by heavy objects of excessive force, or over bend.
- (2) Power cord must not set to be near the handwheel, Keep 3mm spare or above

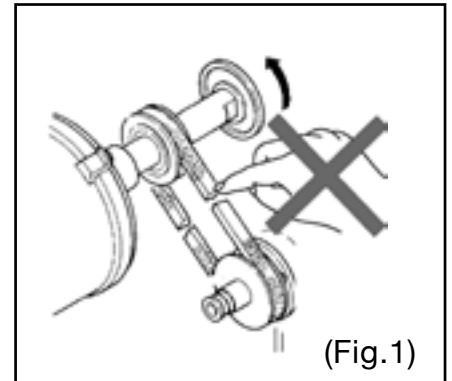
1-2-3 Grounding :

- (1) To avoid the static interference and current leakage, all grounding must be done.
- (2) Use the correct connector and extension wire when connecting ground wire to Earth and secure it tightly.



1-3 SAFETY IN OPERATING

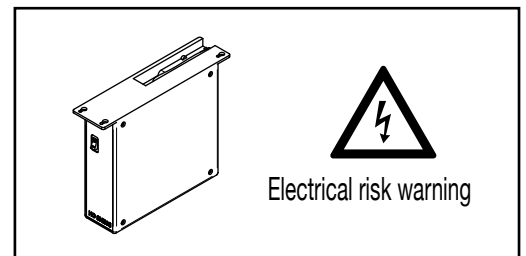
- 1-3-1 When turn on the machine in the first time, use low speed to operate and check the correct rotation direction.
- 1-3-2 During the machine operated, please don't touch hand-wheel, needle, presser foot which are easy to injured parts.
- 1-3-3 Please don't operate the machine under to take out the Belt Cover and another safety advice
- 1-3-4 During machine be operated, please don't open the front aluminum chip cover of needle bar.
- 1-3-5 During machine be operated, please don't use hand or another article to touch the belt which to avoid the injury ! (Fig.1)



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 chnging needle, or threading needle.(show as above)
- 1-4-4 Repairing or doing any mechanical adjustment.
- 1-4-5 Machines rest.



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.

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.

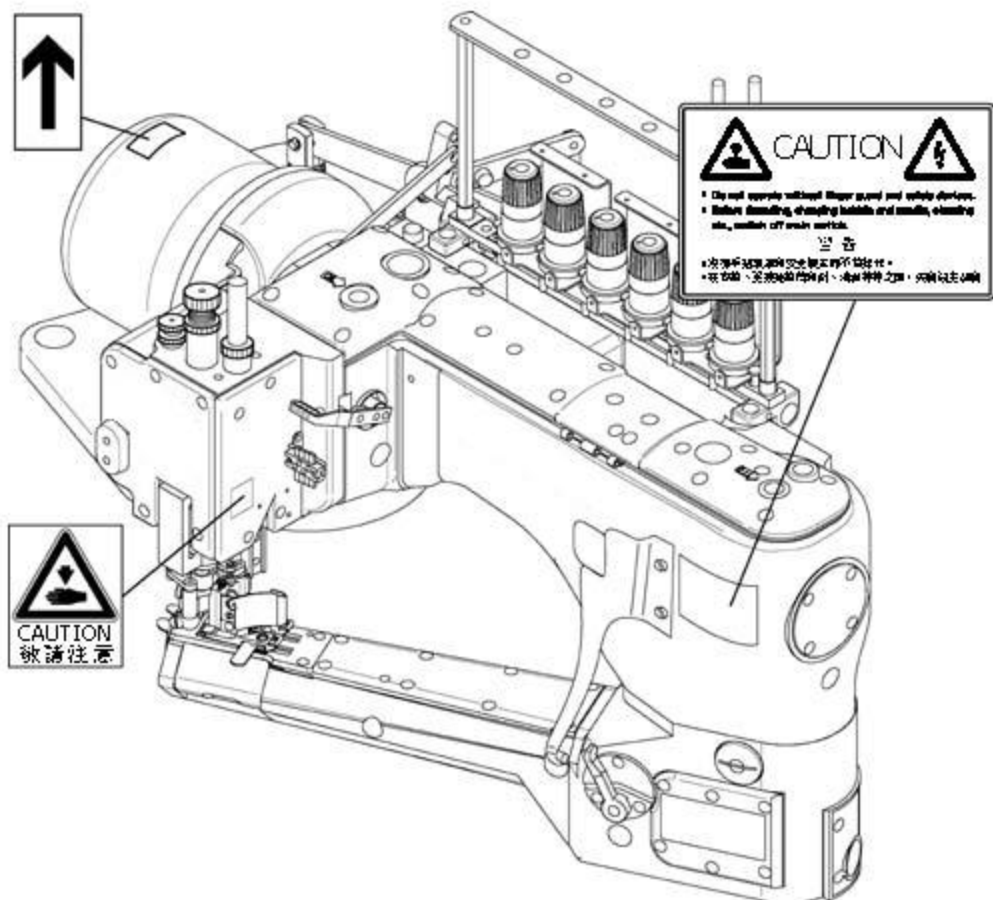


The operation way of belt wheel & motor.



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

1-5-3 THE LOCATION OF WARNING SIGNS:



二、operation guide

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

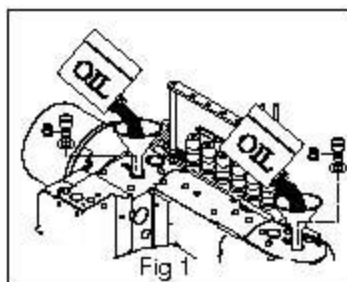
2-1 The filling of lubrication oil



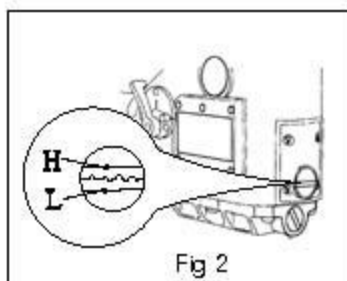
Warning

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

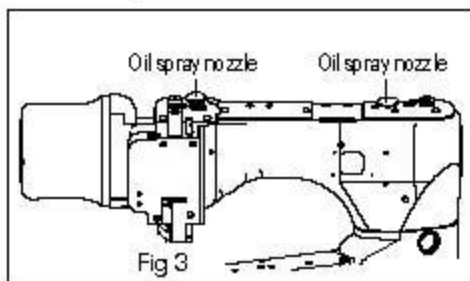
2-1-1 Please use DAPAE FLUID 32T oil. Or, the oil is equivalent.



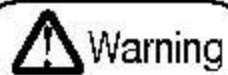
2-1-2 Please fill up the oil before the machine be operated. Loosen the screw a and fill the oil into the machine in slowly (Fig 1). Please fill up the oil to top & low line of oil sight gauge (Fig 2).



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 (Fig 2.H : top line & L : low line), please refill it all the time!



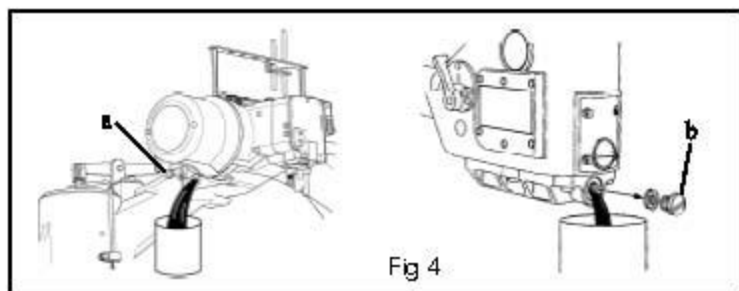
2-2 OIL CHANGE



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).

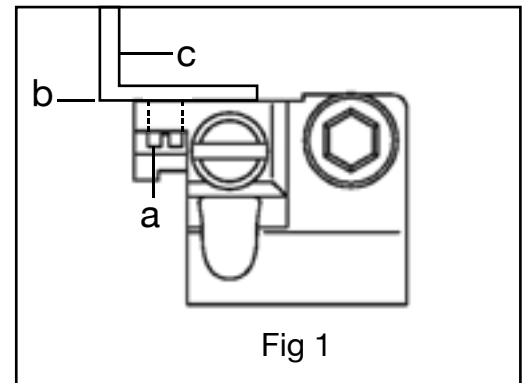
2-2-2 Please refer to 2-1-2 (Fig 1) to refill the new oil.



3-1 The installation & adjustment of looper

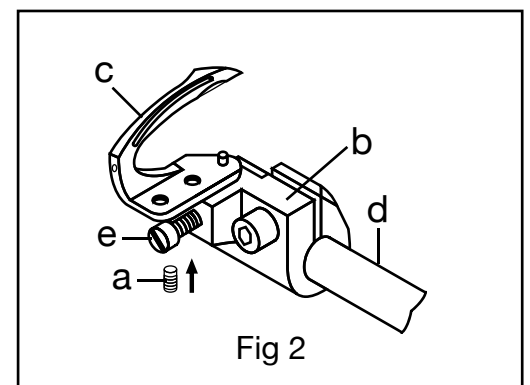


3-1-1. Please check that the screw A couldn't jut out from the plane of looper holder B (Fig 1) and install the looper holder on the looper rocker shaft D (Fig 2) .



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).

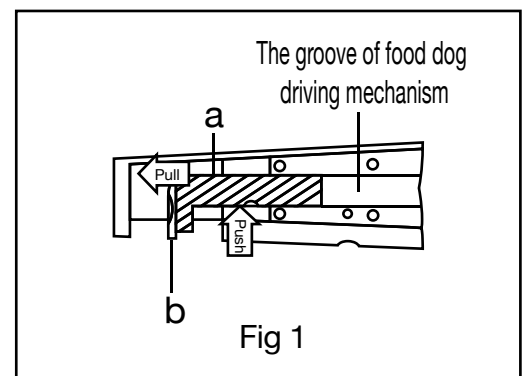
*Remark : Please don't screw on the screw A too over which will cause the location of looper C be lost. Please stop to screw on the screw A immediately when it hold the looper C.



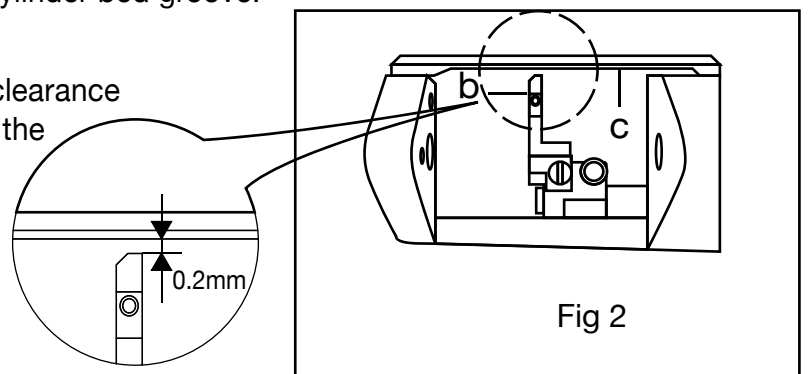
3-2 The clearance between looper and needle plate.



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. (Fig 2)



3-3 The height of needle bar.



Warning !

Please switch off electric power before installation & maintenance.

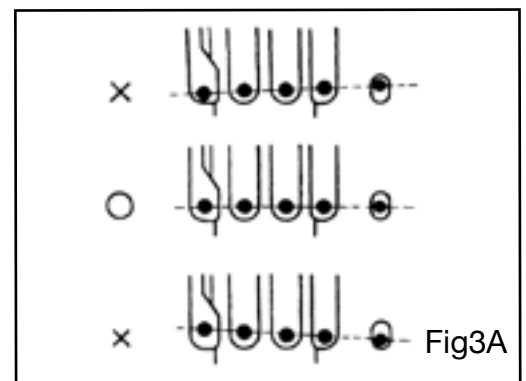
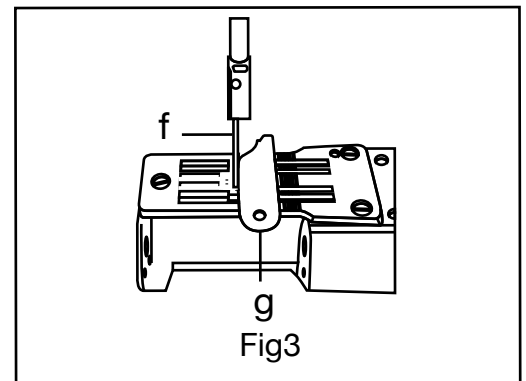
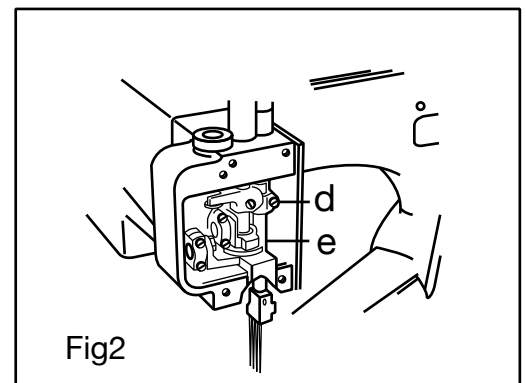
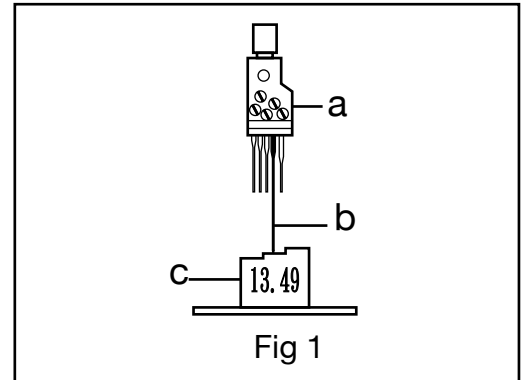
3-3-1. To lift the needle bar to the highest position.

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 (Fig2).

*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.

Needle	gauge	height
4	4.8	13.89
4	5.2	13.49
5	5.2	13.49
4	6.0	13.08
4	6.4	12.70

3-3-2. Please use the Measuring Gauge g to make sure that every needle are passed though the center of the needle hole on the needle plate. In the meantime, all of needle have to be in parallel and the gap have to be even.



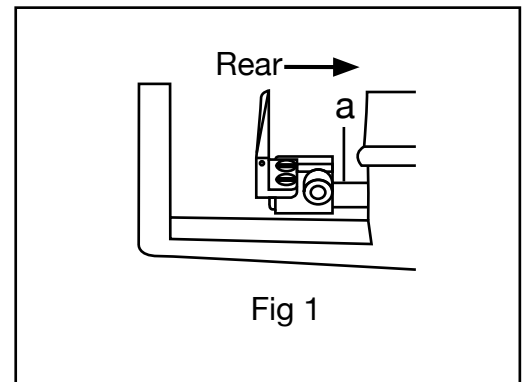
3-4 The adjustment of looper moved front & rear position.



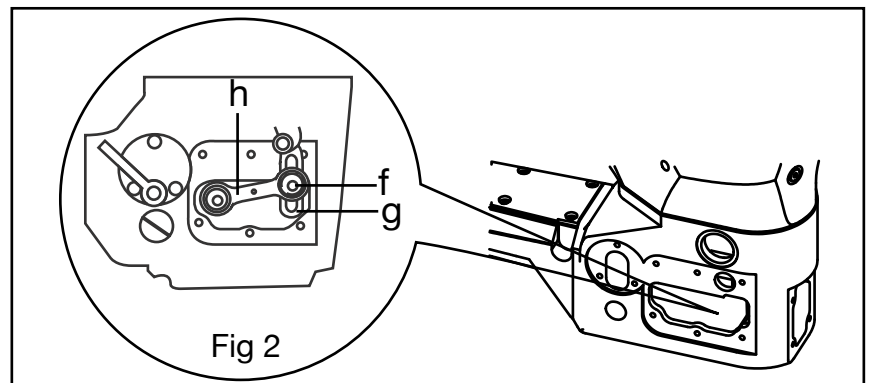
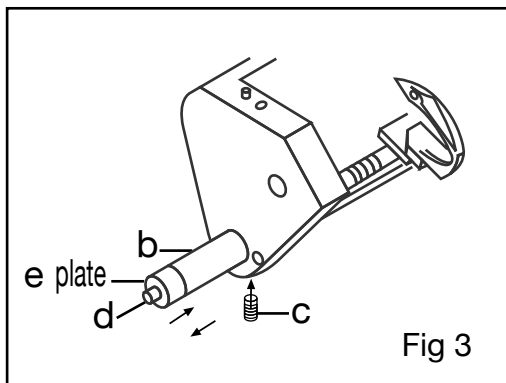
Warning !

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 middle of feed drive/looper avoid lever groove. (Fig 2)

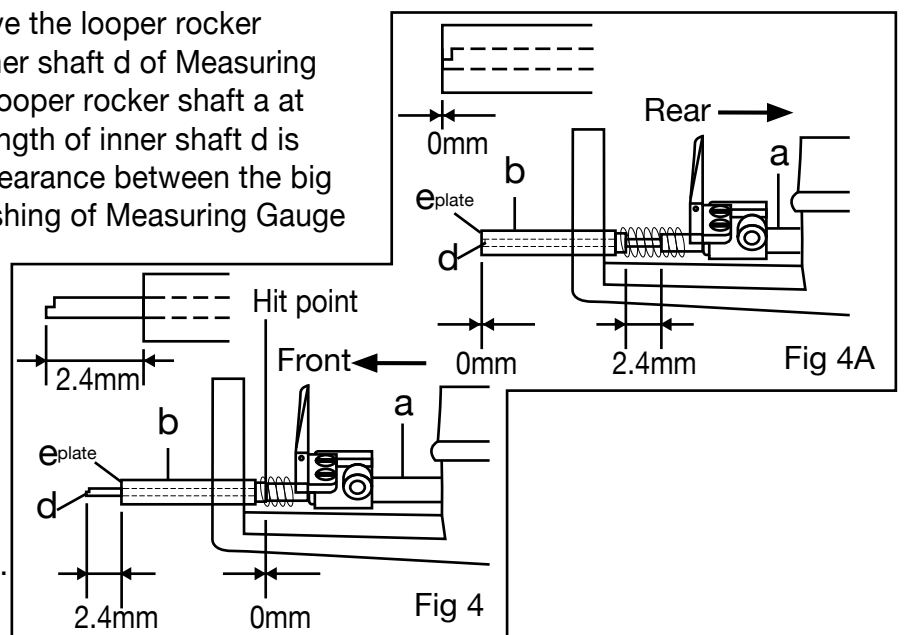


3-4-2. To install the Measuring Gauge b into the hole of front cylinder bed and tight it up by screw c. The inner shaft d and plane e of Measuring Gauge b have to cut evenly when the big side of inner shaft close the looper holder. If not, Please adjust the feed rocker link to make the inner shaft d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

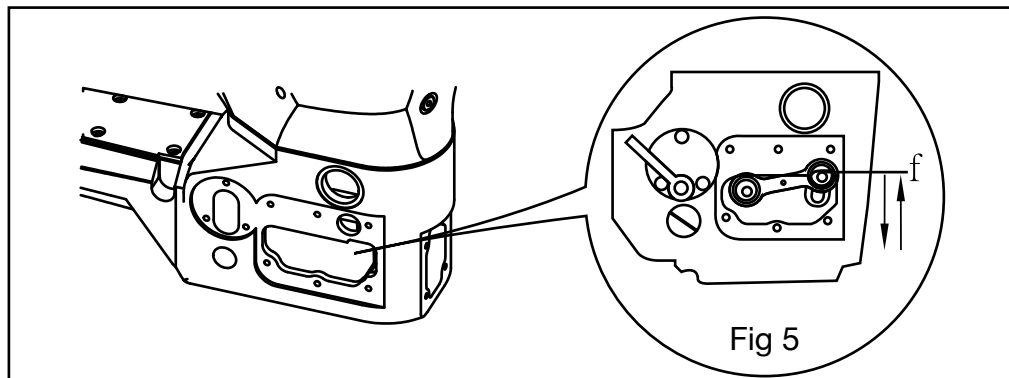


3-4-3. To turn the hand-wheel and move the looper rocker shaft a to the beginning. The inner shaft d of Measuring Gauge b will be pushed out by looper rocker shaft a at this moment. The pushed out length of inner shaft d is 2.4mm. In the meanwhile, the clearance between the big side of inner shaft d 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)



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!!



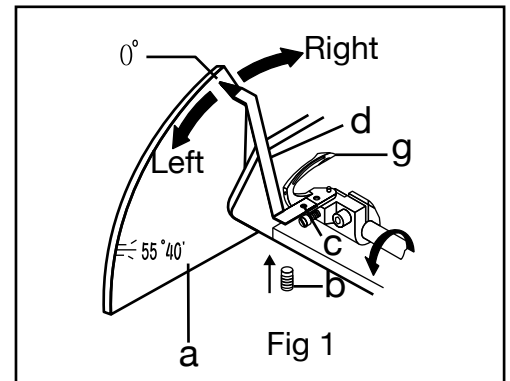
3-5 The adjustment of looper moved right & left position.



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 handle wheel 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. Turning the handle wheel to move the looper g to the left dead point. The pointer shall indicate at 55.40 degree in exactly. (Fig 1)

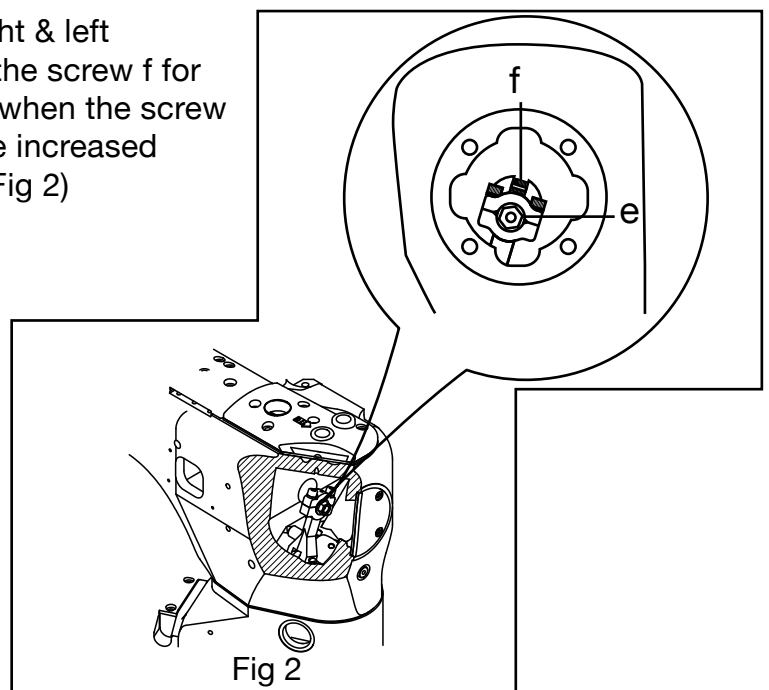


*The angle of looper moved right & left position is difference accord with different needle gauge. Please refer to the following specification table :

Needle	gauge	specification (degree)
4	4.8	54°40'
4	5.2	55°40'
5	5.2	55°40'
4	6.0	56°40'
4	6.4	57°40'

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.



3-6 The distance between the looper moved right & left position and needle bar.



Warning !

Please switch off electric power before installation & maintenance.

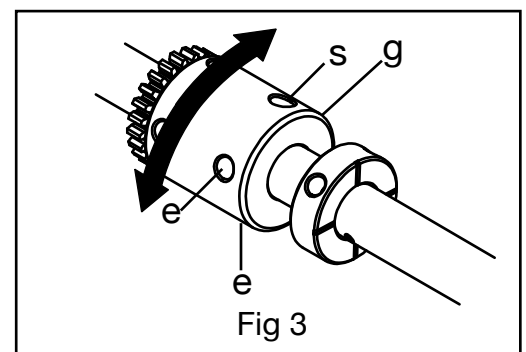
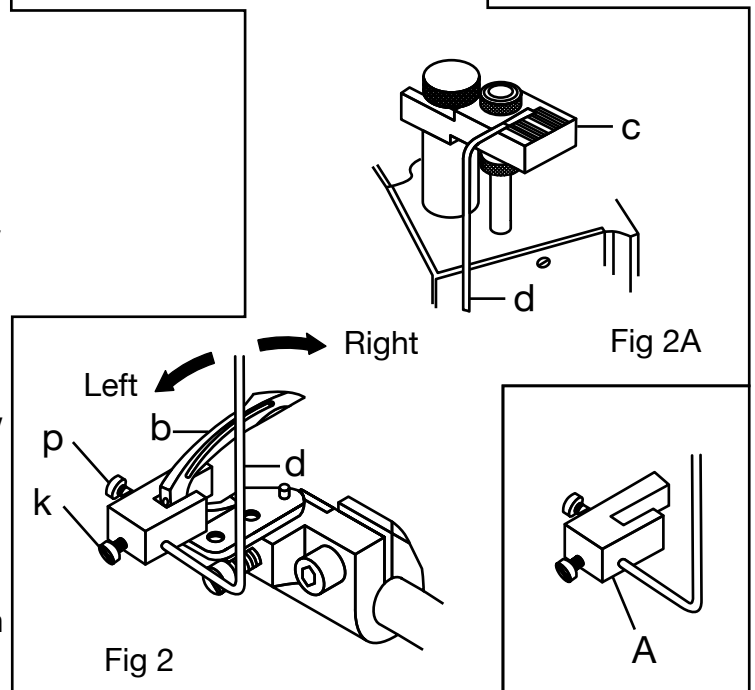
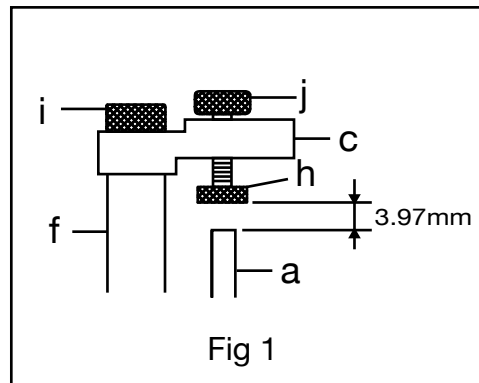
3-6-1. To turn the hand-wheel and move the needle bar to the highest position. Loosen screw s. (Fig 3) *

*Remark : After installed the Measuring Gauges at Fig 1 & 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 hand-wheel 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)

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 hand-wheel 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 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)



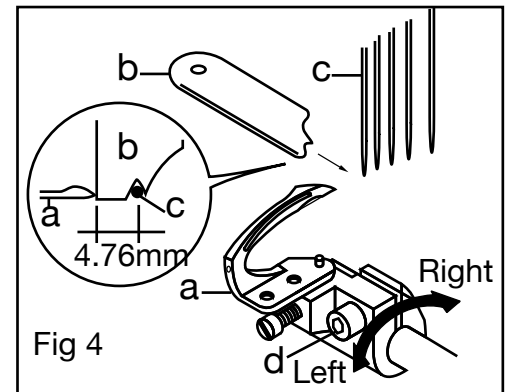
3-7 The distance between the looper and needle.



Warning !

Please switch off electric power before installation & maintenance.

- 3-7-1. To turn the hand-wheel 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)



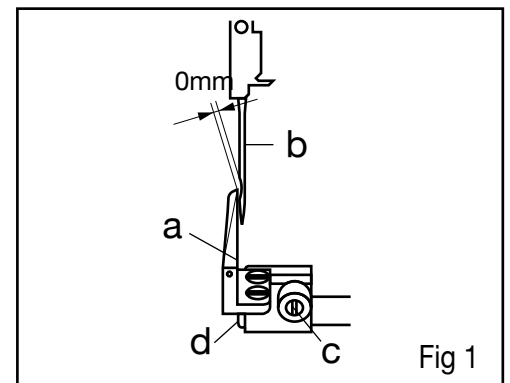
3-8 The needle guard and feed dog.



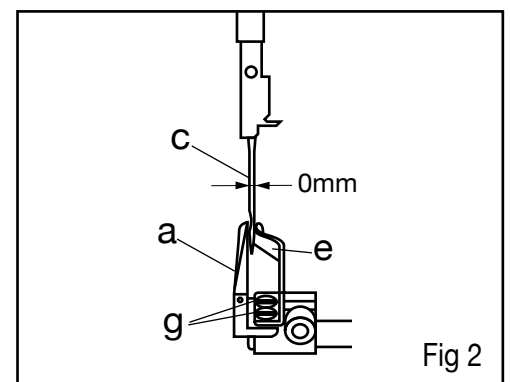
Warning !

Please switch off electric power before installation & maintenance.

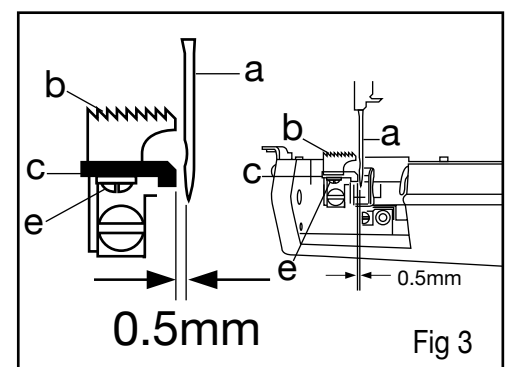
- 3-8-1. To turn the hand-wheel and check looper a has hit the needle b or not?? If yes, Please loosen the screw c and adjusted the clearance via screw d. Please note the clearance between the looper a and shortest needle is 0mm. Then, the clearance between looper a and 2nd needle to 5th needle are going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



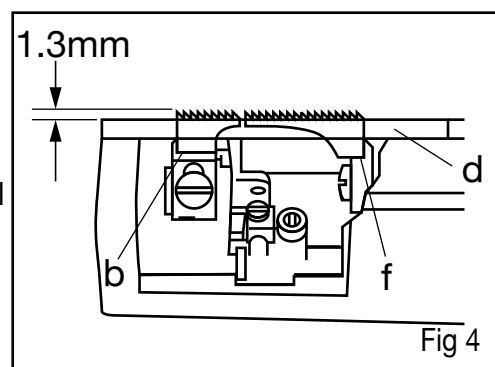
- 3-8-2. Please install the front needle guard e on the fixed plate of looper a via screw g. To adjust the front needle guard e and align the needle c to close the looper a. The needle c will be located at the middle of front needle guard e without any clearance. Please make sure the looper a didn't hit the needle c between the machine operated. (Fig 2)



- 3-8-3. Please install the rear needle guard c on the fixed plate of main feed dog b. To turn the hand-wheel and make sure the closest clearance between needle a and rear guard c is 0.5mm. 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 d to the tip of feed dog. (Fig 4)



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 3-9-5 to tighten it.

3-9-2. 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 hand-wheel 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.

3-9-3. 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).

3-9-4. To turn the hand-wheel 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).

3-9-5. The operated procedure how to tighten the screw d (Fig 5) : 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).

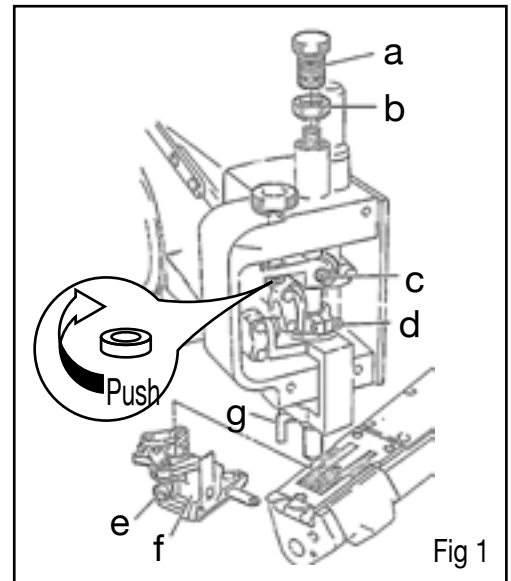


Fig 1

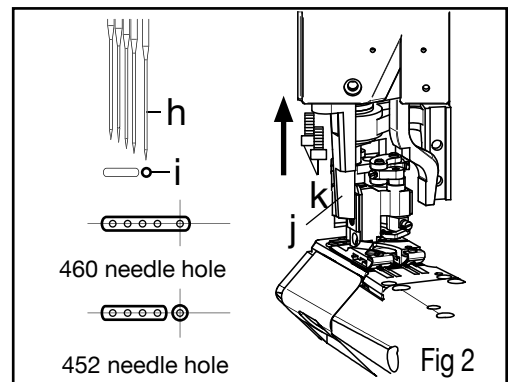


Fig 2

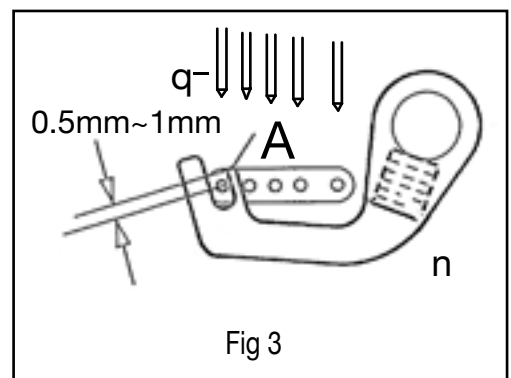


Fig 3

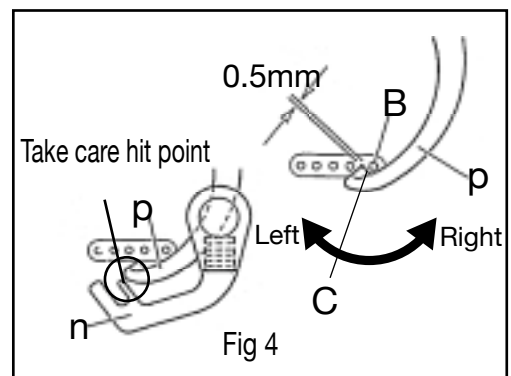


Fig 4

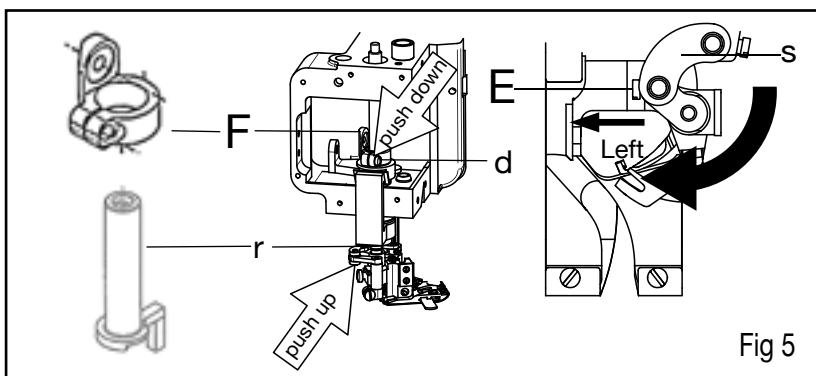


Fig 5

3-10 The adjustment of fabric cutter and presser foot.



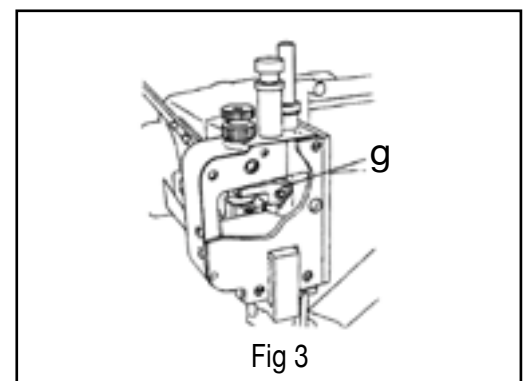
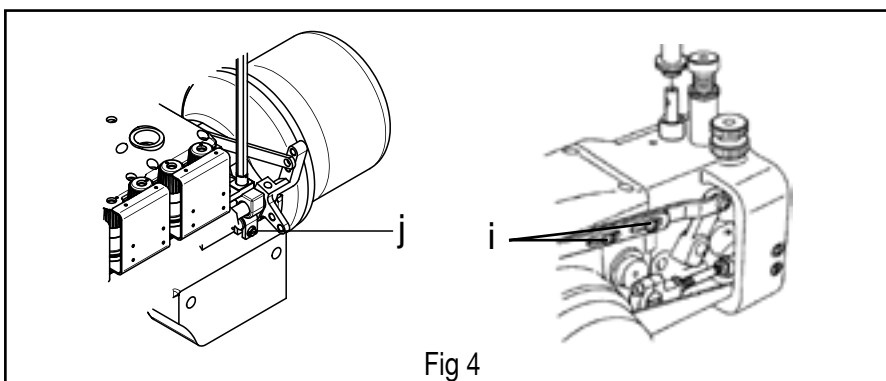
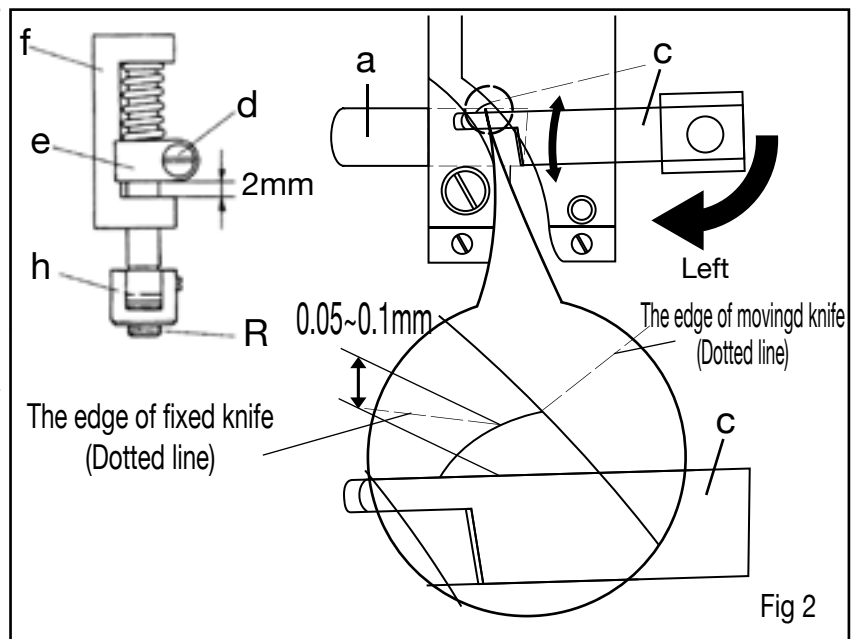
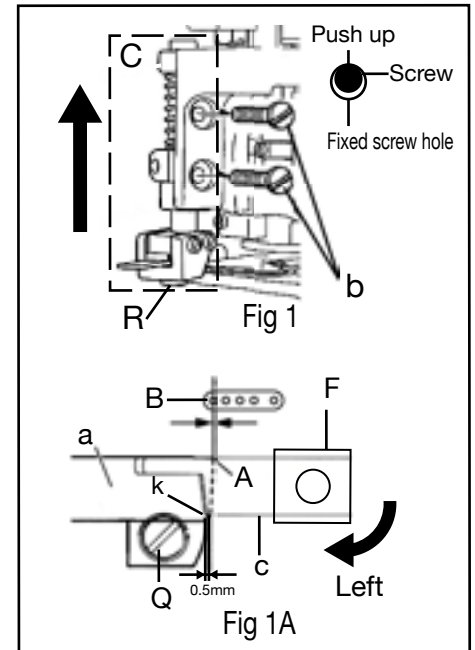
Warning !

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 hand-wheel 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).

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).

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 i or screw j of presser foot lifter shaft to adjust It (Fig 4).



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).

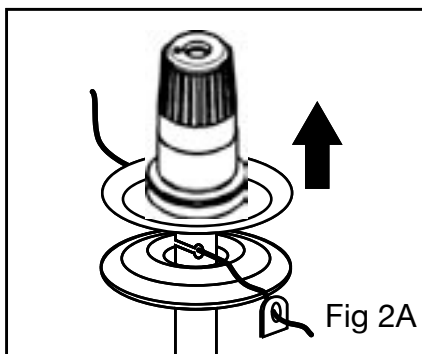


Fig 2A

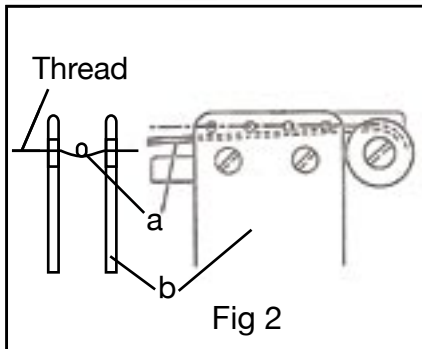


Fig 2

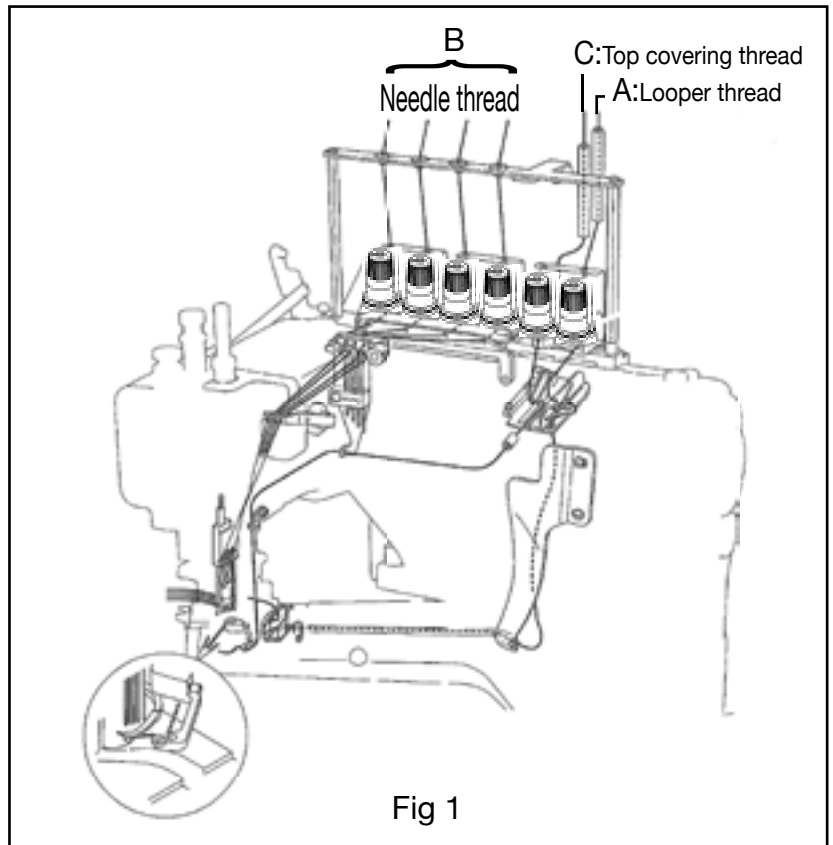


Fig 1

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 hand-wheel 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).

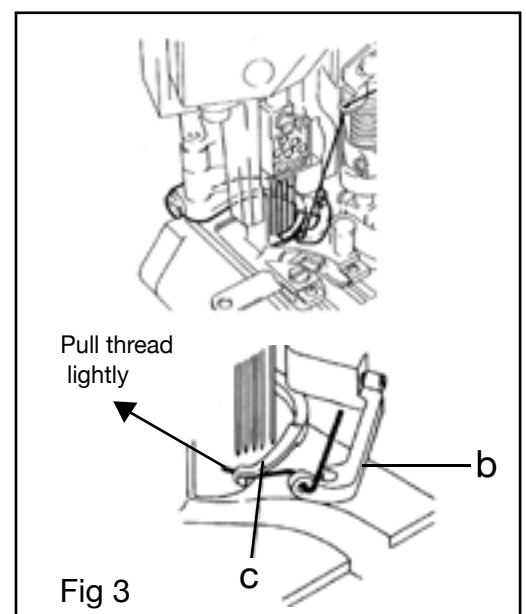


Fig 3



D007R

高林股份有限公司 KAULIN MFG. CO., LTD.