

## 前言

CT系列機型是一種高速圓床式的縫機，充份的表現出優越的效率，穩定的品質，和耐久的壽命。為了使愛用者能夠完全掌握本機器的特性，說明書裡特別列舉出安裝、保養、調整、使用的方法及注意事項，請多加參考。

## 安全注意事項

- 1.皮帶護蓋一定要裝上。
- 2.馬達電源接線一定要確認。
- 3.作業開始前的檢查，作業結束後的清掃，及作業中須要穿線換針等作業時，一定要切斷電源，等馬達完全停止後再做後續工作。
- 4.新機器在開始使用的第一個月，請以 4500RPM 以下的轉速使用。
- 5.添注潤滑油的時候請注意油面計的高度，切勿超過上限。
- 6.使用前請用油壺在針棒上稍微加一點油。
- 7.使用前請注意縫針有沒有彎曲，針尖有沒有折斷，針桿有沒有受損，針窩的方向是否正確。
- 8.穿線是否正確。
- 9.作業結束後，縫機一定要清掃，套上防塵套。

## Preface :

CT series is high speed cylinder bed intelock machine and can achive excellent efficiency, stable quality and durable machine life. In order to let the users to know the characteristic and the best use of these machines, please refer to this instruction manual in order to conduct proper installation, maintenance adjustment, using and other impartant items.

## Safety notice :

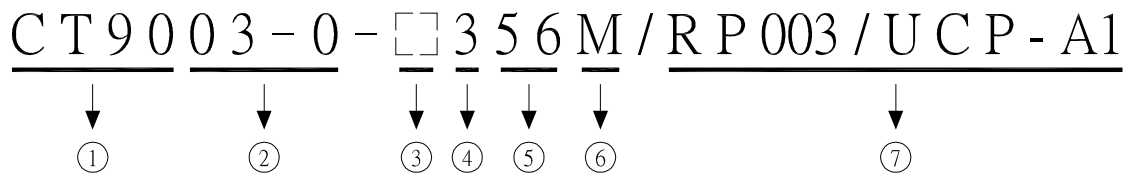
1. Belt cover must be installed.
2. Make sure the motor wiring is installed properly.
3. Make sure to cut off the electricity and wait till motor stops completely before conduct pre-operation inspection, cleaning, threading and changing the needles..
4. For new machines, please do not run exceed 4,500 rpm during the first month usage.
5. Do not over adding the lubrication oil.
6. Please drip one drop of oil on the needle bar beofe operation.
7. Please make sure the needles are installed properly and no curve and no damaged.
8. Please make sure the threading is correctly.
9. Please make sure to clean the machine after sewing operation daily and covered with dustproof cover.

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# CT9000 SERIES 高速方筒型繙縫機 High Speed Cylinder Bed Interlock machine

## ● 機型編號說明 MODEL NUMBERING



- |  |   |
|--|---|
| <p>①. 機型 Model :</p> <p>CT90 : 標準方筒型繙縫機<br/>Standard Cylinder Bed Coverstitch Interlock Machines</p> <p>CT92 : 特厚類方筒型繙縫機<br/>Cylinder Bed Coverstitch Interlock Machine For Extra Heavy Materials.</p> <p>CT93 : 具有左切刀方筒型繙縫機<br/>Cylinder Bed Coverstitch Interlock Machine With Left Hand Knife Mechanism.</p> <p>CT96 : 細筒型繙縫機<br/>Small Cylinder Bed Coverstitch Interlock Machine.</p> <p>②. 用途代號 Application Code :</p> <p>00-0 : 一般平縫(基本型)<br/>General Plain Seaming (Basic Type) .</p> <p>03-0 : 上帶滾邊(滾領)車縫<br/>Tape Binding (Collarette Binding).</p> <p>13-0 : 包縫骨壓縫(倒骨式、包縫骨寬度3.0mm以內)<br/>Overlock Seam Covering (Folding Over, Overlock Seam Width Under 3.0mm).</p> <p>85-0 : 車縫環狀平版寬幅鬆緊帶<br/>Attaching Pre-Closed Flat Knit Elastic Band Onto Waists Of Tubular Goods (With Right Knife, Rear Puller &amp; Chips Suction Pipe) .</p> <p>③. 裝飾縫區分碼 Top Coverstitch Code :</p> <p>[0] : 無上飾縫 Without Top Coverstitch</p> <p>[ ] : 有上飾縫 With Top Coverstitch</p> <p>④. 針數 No. Of Needles :</p> <p>2 → 2 針 2-Needle</p> <p>3 → 3 針 3-Needle</p> <p>4 → 4 針 4-Needle</p> | <p>⑤. 針距 Needle Distance :</p> <p>40 : 4.0 mm</p> <p>48 : 4.8 mm</p> <p>52 : 5.2 mm</p> <p>56 : 5.6 mm</p> <p>60 : 6.0 mm</p> <p>64 : 6.4 mm</p> <p>⑥. 針板舌之形狀 Shape Of Needle Plate Tongue :</p> <p>L : 適合較薄之布料<br/>For Light Weight Materials.</p> <p>M : 適合中等厚度之布料<br/>For Medium Weight Materials</p> <p>H : 適合較厚布料<br/>For Heavy Weight Materials.</p> <p>S : 適合於特殊縫製需要<br/>For Special Sewing Requirement.</p> <p>W : 適合較薄之平織布料<br/>For Woven Fabrics</p> <p>⑦. 可選擇加裝的裝置 Optional Device :</p> <p>RP003 : 後拉引式拖輪裝置<br/>Rear Puller ( For Cylinder Bed Interlock ).</p> <p>UCP-A1 : 氣動式自動切線裝置<br/>Pneumatic Type Under Bed Thread Trimming System For Cylinder Bed Interlock Machines.</p> <p>UCE-A1 : 電動式自動切線裝置<br/>Electric Type Under Bed Thread Trimming System For Cylinder Bed Interlock Machines.</p> <p>BS003 : 內藏式定位器<br/>Built-In Type Synchronizer</p> |
|--|---|

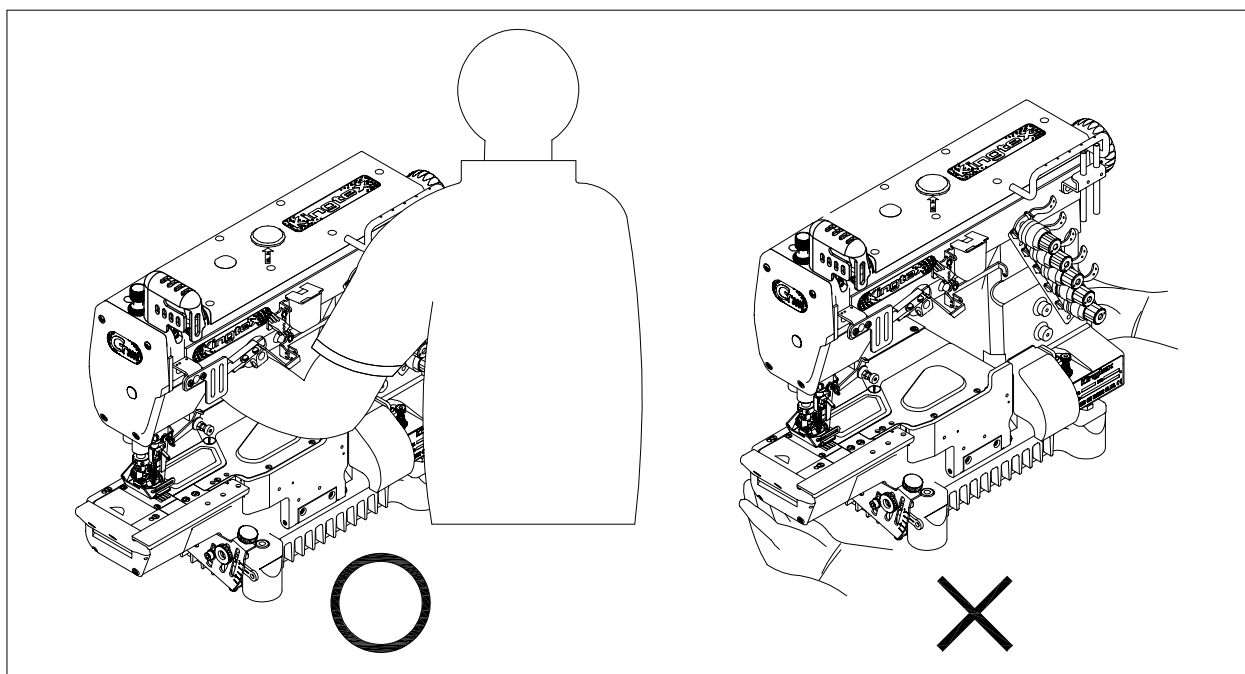
※機型、用途及可選擇加裝的裝置等其他資訊內容，可至本公司網站查詢或以電話方式諮詢

If you have any questions about our machine models, applications, optional device's or any other informations needed to know, please visit our company's website or contact us via e-mail, fax, telephone directly.

## 1. 規格 Specifications

型式 Model	CT 9000
種類 Description	高速方筒型繡縫機 High speed cylinder bed interlock machine
外型尺寸 Dimensions	480mm (L) * 250mm (W) * 430mm (H)
圓筒座周長 Circumference of cylinder bed	280mm
重量 Weight	40.5 kg
線跡型式 Stitch type	ISO 406, 407, 602, 605
適用範圍 Application	薄類, 中厚類 General seaming of knitted material
最大縫製速度 Sewing speed	5500針 / 每分鐘, Max. 5500 stitches / min (4500 stitches / min for the machine with puller)
進給可調範圍 Stitch length	1.4~3.6mm 相當於7~18針 / 每英吋 Stitch number : 7~18 stitch / inch
縫針型號 Needle to be used	Schmetz or Organ UY128GAS No.65~No.90 (標準 Standard : No.70)
針距 Needle distance	3針 : 4.8mm, 5.6mm, 6.4mm (2針 : 3.2mm, 4.0mm) 3 Needles : 4.8mm, 5.6mm, 6.4mm (2 Needles : 3.2mm, 4.0mm)
針棒行程 Needle stroke	33mm
壓腳提升量 Presser foot lift	針距為5.6mm時, 有上飾縫勾針 : 5.0mm, 無飾縫勾針 : 7.0mm For needles distance 5.6mm ; with spreader : 5.0mm with no spreader : 7.0mm
進給調整方式 Feed regulation	壓扣式 By push-button
差動可調範圍 Differential ratio	最大縮縫比 1 : 2.9, 最小伸縫比 1 : 0.3 Max. normal differential ratio 1 : 2.9, max. Reverse differential ratio 1 : 0.3
差動調整方式 Differential feed regulation	外部調整, 附粗調扳手, 微調旋鈕 By adjusting screw or by control lever (Adjusting during operation from outside is possible by moving control lever up and down)
潤滑方式 Lubrication	強制潤滑 Automatic lubrication by oil pump
潤滑油 Lubrication oil	Mobil#10或同等級的產品 Mobil#10 or equivalent

## 2. 搬運 Moving



⚠ 當搬運機器時, 請勿從下座布板蓋部位搬動。

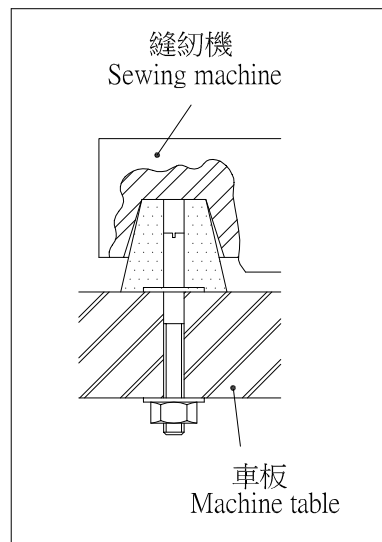
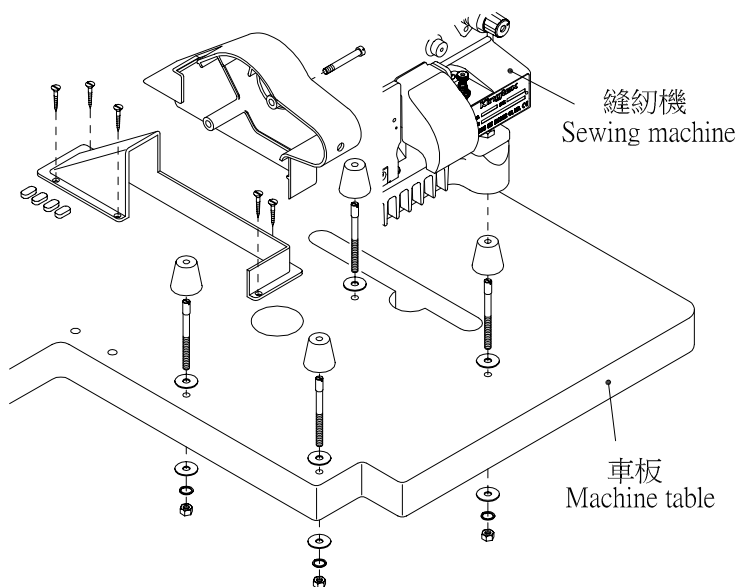
Do not hold the cloth plate cover when carrying the machine.

### 3. 安裝說明 Installation

#### 3-1. 上載式安裝 Table top installation

請參閱圖示正確安裝機器。將螺絲及螺帽鎖定在車板，然後將橡膠墊放在螺樁上，最後將機器確實放置在橡膠墊上。

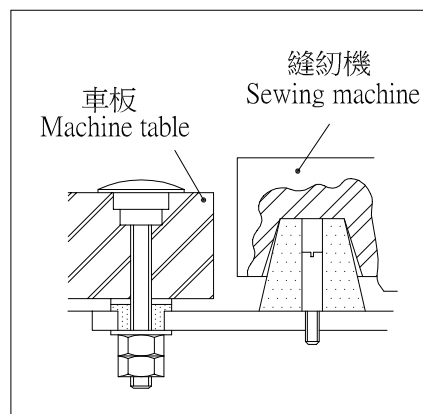
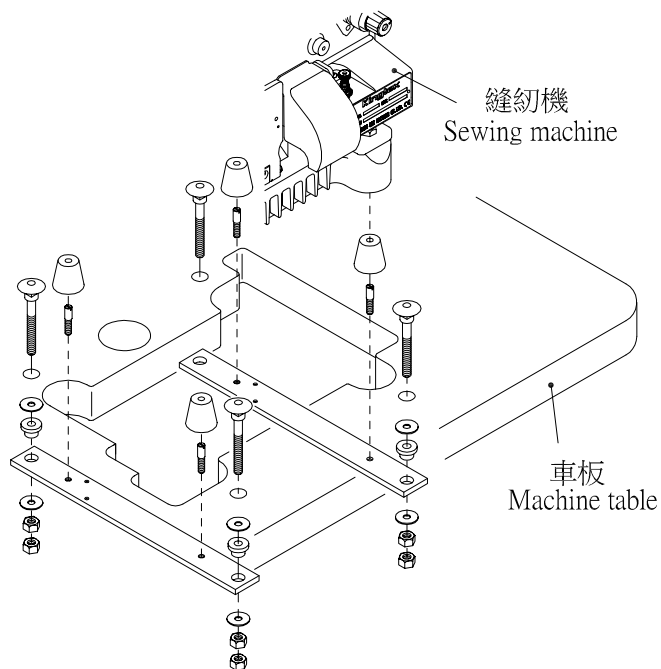
Install the machine correctly referring to the illustration. Set bolts and nuts to machine table and put rubber cushions on bolts and rest the machine on them securely.



#### 3-2. 半沉式安裝 Semi submerged installation

請參閱圖示正確安裝機器。將螺絲鎖在承載板上，然後將承載板安裝在車板上，再來將橡膠墊放置螺絲上，最後將機器確實安置在此4個橡膠墊上。

Install the machine correctly referring to the illustration. Set screws on supporting board and set supporting board on machine table. Then put rubber cushions on screws on which rest the machine securely.

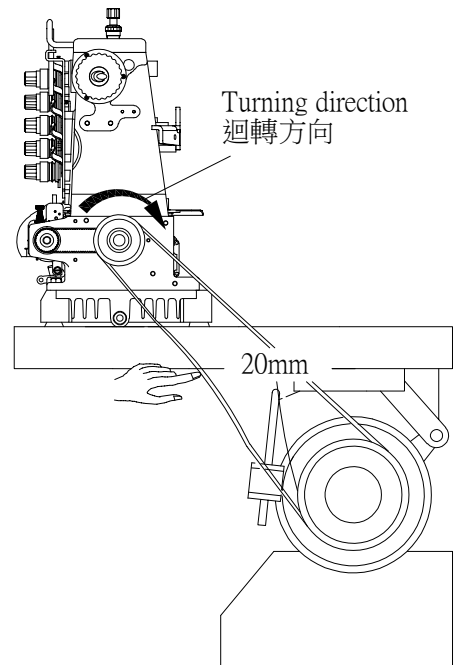


### 3-3. 馬達、皮帶與皮帶護蓋 Motor belt and belt cover

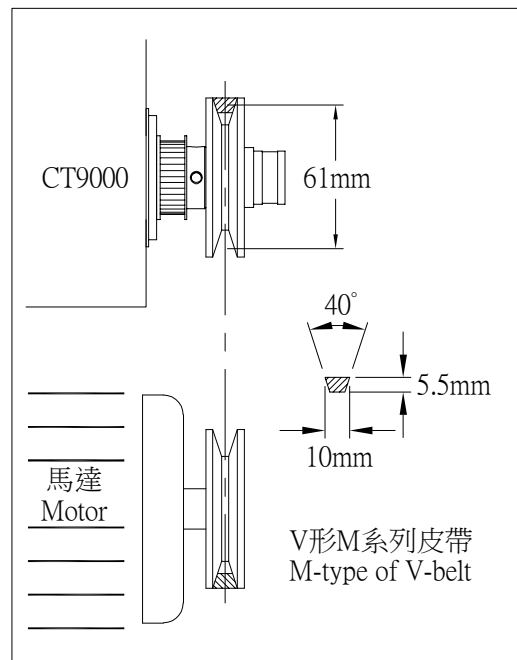
本機最高轉速可達5500針 / 每分鐘，一般多以5000針 / 每分鐘來使用，在最初200小時(約1個月)請以80%的速度來使用，以確保機器的使用壽命，傳動皮帶為V形M系列三角皮帶，掛上皮帶後請先確認皮帶的鬆緊度，由皮帶的中間輕壓約有20mm的彈性，再確認皮帶的迴轉方向是否正確，最後裝上皮帶護蓋。本機型適用馬達為3相2極400W(1/2馬力)離合馬達，踏板踩下啟動馬達時皮帶輪會向左移動，請將馬達安裝在皮帶輪與機器皮帶輪同一中心線的位置上，下表列出皮帶輪徑與轉速的關係。

The maximum swing speed of this machine is 5500 s.p.m. and ordinary speed is 5000 s.p.m. during the first 200 hours (or first month) of using the machine. Please do not exceed 80% of the ordinary speed.

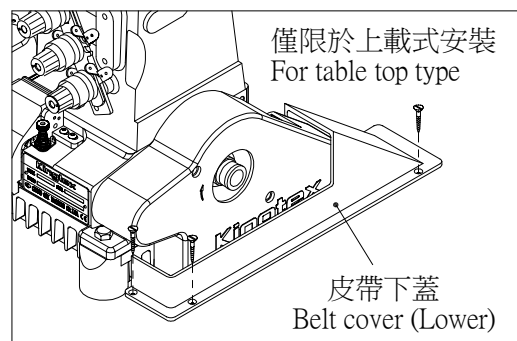
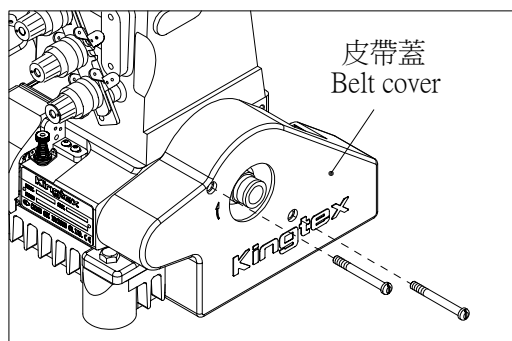
- A. Belt : m type v belt and be sure that the motor turning direction is clockwise and the motor belt tension can be pressed inward about 20mm.
- B. Belt cover : Install belt as shown in the illustration.
- C. Motor : Use clutch motor of 3-phase, 2-pole, 400 W(1/2HP). Fix the position of motor so that the centers of motor pulley and machine pulley. Align when motor pulley shift to the left by pushing pedal.



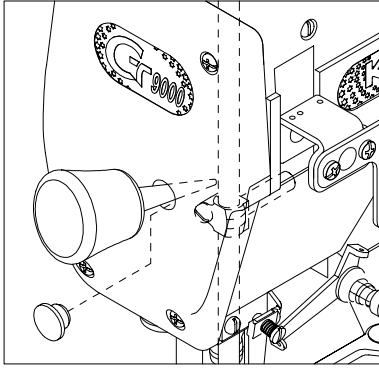
馬達皮帶輪外圈直徑 Outside diameter of motor pulley (mm)	縫機轉速 s. p. m. Of machine for	
	50 Hz	60 Hz
85		4500
90		5000
100	4500	5500
105	5000	6000
110	5500	
120	6000	



裝置皮帶蓋如下圖所示  
 固定皮帶下蓋在車板上 (僅限於上載式安裝)  
 Install the belt cover as shown in the figure below.  
 Fix the belt cover(lower) to the machine table.  
 (Only for table top type)

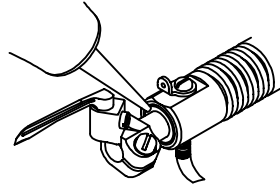


## 4. 使用前說明 Before operation



如果使用是新機器或機器放置有一段長時間未使用，請滴2到3滴的潤滑油在針棒及結線鉤驅動軸上。

If you use a new machine or a machine which has not been running for a while, oil the needle bar and the looper bar 2 or 3 drops.



## 5. 潤滑油及冷卻油 Lubrication oil and cooling oil

### 5-1. 選用潤滑油及冷卻油 Lubrication oil and cooling oil

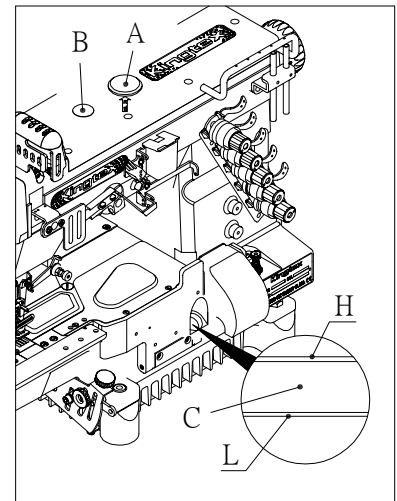
潤滑油在機器的使用壽命上佔很重要的地位，而冷卻油對縫製的效果有很大的影響，千萬不可疏忽潤滑油，請使用Mobil#10或同等級的產品，冷卻油請使用矽油(Silicon oil)

Please use mobil #10 or equivalent oil for lubrication oil and use silicone oil for cooling oil.

### 5-2. 添加潤滑油 Feeding oil

本機器在出廠時已把潤滑油全部排除，在新機器使用前或長期使用後油量不足時，請打開注油孔塞(A)加入新潤滑油，添加潤滑油的同時注意油面視窗(C)上的油面高度應為上下線內，切不可超過上限，開始運轉時請注意循環視窗(B)，確認潤滑油是否噴向視窗。

The lubrication oil has been drained off completely before delivery, adding oil till between upper line and lower line of the oil Window C by removing seal plug A. Also, please make sure the oil flows out of nozzle B at the start of operation.

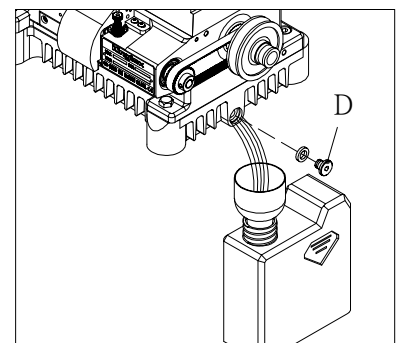


### 5-3. 換油 Changing oil

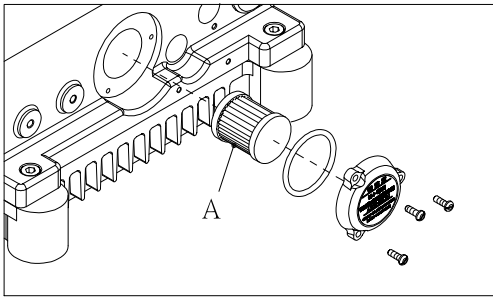
新機器在250個使用小時或是長時間使用後，潤滑油必須更新，排放舊油時，打開皮帶護蓋，取下V形皮帶將縫機移出承座，放鬆排油螺絲(D)，放掉舊油，注意廢油不可污染到V形皮帶，完成後依反向順序裝回零件，確實鎖緊排油螺絲(D)，添加新油時參照上節說明。

For the longer life of machines, change lubrication oil completely after 250 hours (or 4 weeks) of initial operation.

- After taking off belt cover, remove v-belt from motor pulley, and remove machine head from machine table.
- Loosen screw D and drain off all the oil from the machine.
- After draining, tighten screw D back.
- When replenishing oil please refer to paragraph 5-2. "Feeding oil" above.



## 5-4. 潤滑油過濾器 Oil filter



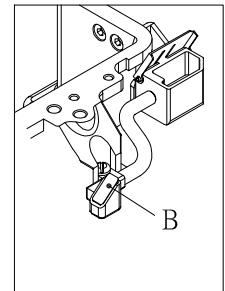
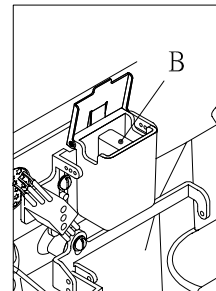
本機器採用強制過濾潤滑系統，長期使用後，雖然油面計指標正常，而循環視窗發現油量減少或是不出油，請立即檢視過濾器(A)，清掃乾淨或更新。

Although the machine is using oil pump lubrication and Splashing lubrication systems, please check and clean oil Filter every month. And when there is no oil or very little oil comes out of nozzle even indicator shows normal, please check oil filter A and replace it if necessary.

## 5-5. 添加冷卻油 Adding cooling oil

高速縫製時，磨擦發熱使得作業上產生許多困擾，例如斷針，跳線，熔解等問題，因此本機器上裝設有針尖冷卻裝置及針線冷卻裝置。冷卻油以矽油的效果最好，在某些情況下不必使用冷卻油或不能使用冷卻油時，可將羊毛氈(B)取出。

Avoid needle breaking, stitch jumping or thread melting problems etc. Please fill cooling oil tank and felt B with silicone oil under some special circumstances. You can take felt B off from reservoir. When you can not use or do not need to use silicone oil.



## 6. 針 Needle

### 6-1. 針號選擇 Needle selection

本機型全系列使用針號為 UY128GAS 依照裁片的厚度，縫線的粗細等選用適當的針號。

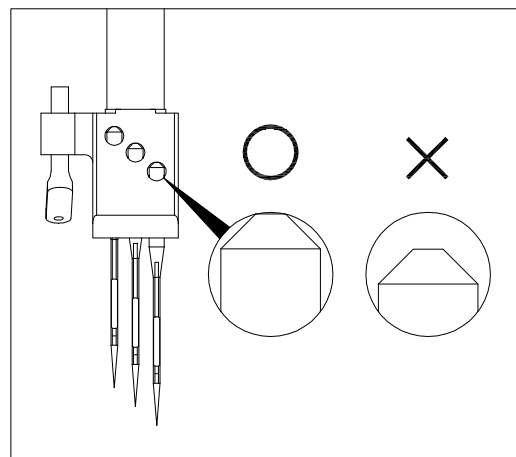
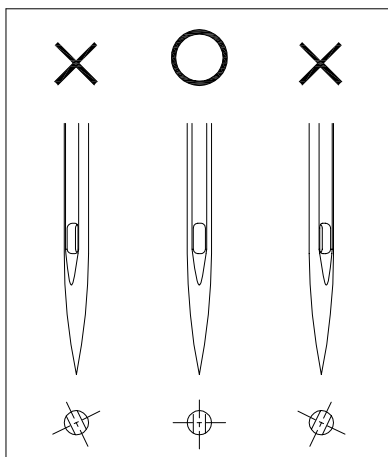
Needle UY128GAS of schmetz or organ is to be used there are many sizes of needle, and the most suited needle to the thickness and the kind of material should be selected.

日本編號 Japanese size	9	10	11	12	13	14
西德編號 Metric size	65	70	75	80	85	90

### 6-2. 正確的安裝針 How to replace the needles

針在安裝的時候必須朝向正確的方向，也就是針窩必須朝向正後方，並且向上定位。

When replacing needle should be made correctly with the scarf facing rightly backward as shown in the illustration, and at its uppest dead point.



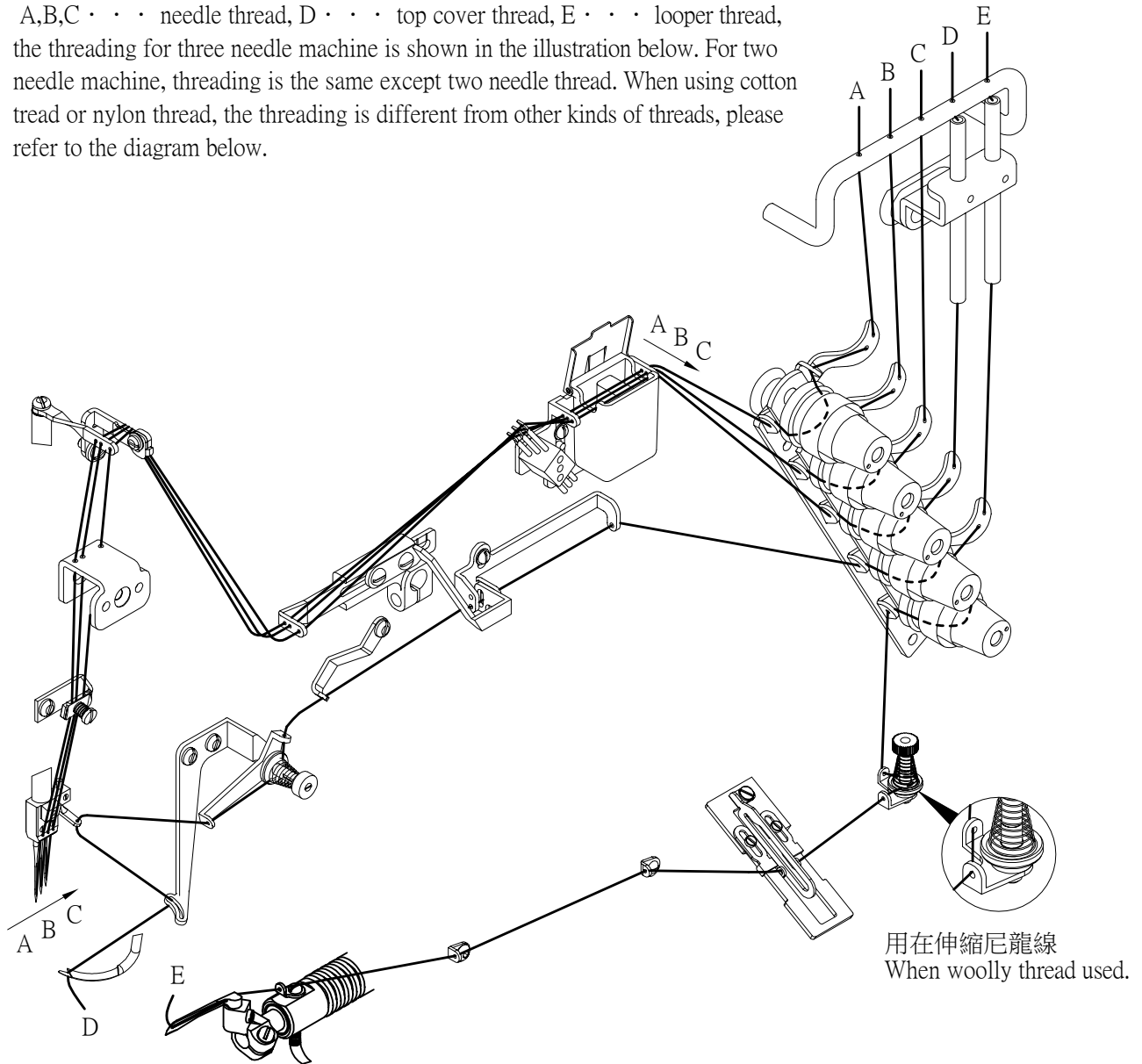


### 6-3. 穿線 Threading

要得到最佳的縫製效果，縫線的收放量是一個重要的環節，縫製過程裡斷線、跳針、線跡不穩定等不良現象，錯誤的穿線是其中一個原因，請依照穿線圖正確的穿線。ABC為擊針線，D為上裝飾線，E為下勾線，當下勾針線使用棉線或伸縮尼龍線時，其穿線方法有所不同，如圖所示。

Threading should be made correctly, please refer referring to the illustration, improper threading might caused skip stitch, thread breakage and uneven tension.

A,B,C . . . needle thread, D . . . top cover thread, E . . . looper thread, the threading for three needle machine is shown in the illustration below. For two needle machine, threading is the same except two needle thread. When using cotton tread or nylon thread, the threading is different from other kinds of threads, please refer to the diagram below.

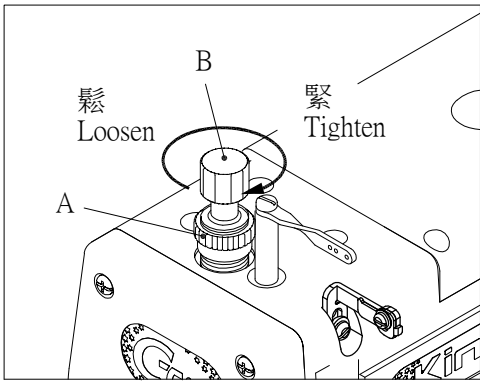


用在伸縮尼龍線  
When woolly thread used.

### 7. 與縫製有關的各項調整 Proper operation adjustment

由於某一些因素，導致對縫製效果產生影響，如裁片的厚度及質料、縫線種類及粗細、線跡寬窄的要求、進給率大小的變化.....等等，故必須經過試車調整後才能找出最佳的縫製效果。

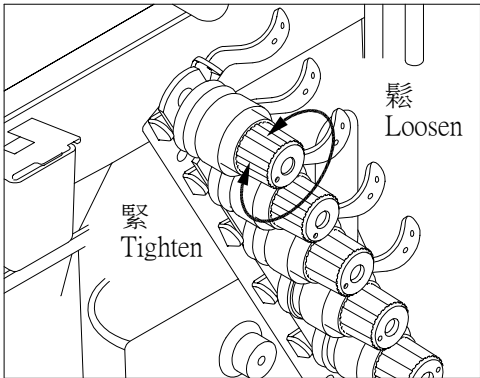
Due to some reasons will affect the sewing effects. such as thickness of sewing fabrics, different kinds of sewing threads and its thickness requirements for narrow on wider stitches, the changes of feed ratio etc. Thus, machines must be adjusted and test running first in order to obtain the best sewing effects.



### 7-1. 壓腳壓力 Pressure of presser foot

壓腳對裁片的壓力影響到裁片的進給率正確與否，放鬆固定螺帽(A)，旋轉調整螺棒(B)，向右轉加大壓力，向左轉減小壓力，在不影響縫製效果下盡可能減小壓腳壓力，調整後確實鎖緊固定螺帽(A)。

To increase the pressure of presser foot, turn adjusting screw B clockwise after loosening lock nut A, to decrease the pressure, turn it counter clockwise. Pressure of presser foot should be as weak as possible so long as presser foot can operate properly.



### 7-2. 縫線張力 Thread tension

不同的縫線有不同的張力，而相同的縫線穿在不同的位置也對張力有不同的需求，每條縫線都可透過張力調整組分別調整，向右轉張力加大，向左轉張力減小，在不影響縫製效果下盡可能減小縫線的張力。

Different threads have different tensions and even same threads will have different tensions when go through different threading holes. Each thread tension can be adjusted by individual tension nut. Turn tension nut clockwise to increase thread tension, turn tension nut counter clockwise to decrease thread tension. Please use least thread tension as long as it will not affect the sewing effects.

### 7-3. 進給率調整 Adjusting stitch length

本縫機進給率可調範圍從1.4mm每針到3.6mm每針採用無段式變速，進給率參考值如以下列表所示。

打開側護蓋(C)左手輕輕壓下壓扣按鈕(D)，一面用右手慢慢的旋轉手輪(E)在某一個位置上可以感覺到壓扣按鈕(D)落入槽槽內時，左手用力壓著按鈕同時看著手輪上的刻線(F)，旋轉手輪(E)使所須要的刻線(F)對正定位線(G)，再放鬆左手，最後蓋回護蓋(C)。

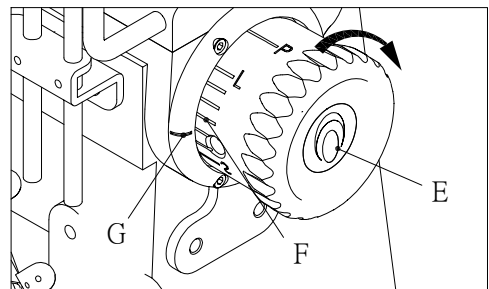
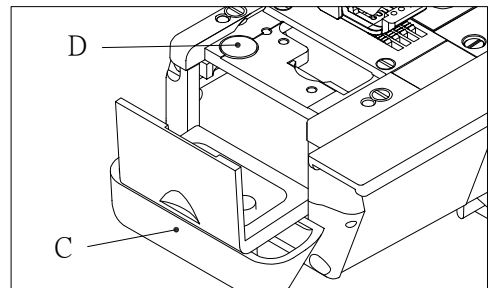
注意：當調整縫目長短時，而使用之機器附帶下切線自動切線裝置，並且使用自動針定位系統之馬達時，電源開關一定要先行關閉。

Adjustment of stitch length can be made steplessly from 1.4mm/per stitch to 3.6mm/per stitch, please refer to stitch length chart as listed below.

Please open up side cover C press, then push button D with left hand lightly till the tip of which contact with the parts with groovy inside, keep pressing, turn hand wheel E with right hand till push button D gets into the groovy, at this line, press in push button D strongly and turn hand wheel E, a graduation F on the circumference of hand wheel E indicates the stitch length (mm), which should be aligned with the set mark G, then, release hand, and close back the side cover C.

Note :

In case of machine with UT device (Lower thread trimmer) which is equipped with the motor with automatic needle positioning system, power switch must be turned off when changing stitch length.



縫目長度 Stitch length ( mm )	單位縫針數 Number of stitch per	
	inch	30 mm
1.4	18	21
2.0	13	15
3.0	8.5	10
3.6	7	8

## 7-4. 差動比例調整 Adjusting differential feed

為了克服各種裁片及縫線不同的伸縮性，本縫機裡裝設有差動比例調整機構。

差動分為正差動及逆差動，只要鬆開螺帽(B)、調整差動板手(D)、旋轉差動旋鈕(E)就可以變換差動比，差動比調整為無段式，調整完成並將螺帽(B)旋緊，而螺絲(A)用來選擇固定差動比上限。調整差動比可以用來產生部份皺摺，在縫製過程中須要皺摺時，可依上述方式調整。

主送布齒(F)與副送布齒(G)分別由各個驅動機構來帶動，當主送布齒(F)改變了進給率時，副送布齒(G)相對的差動比也受到影響，必須配合調整。

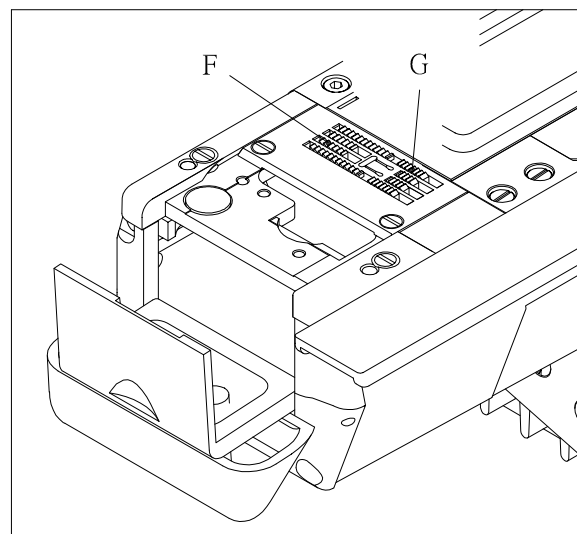
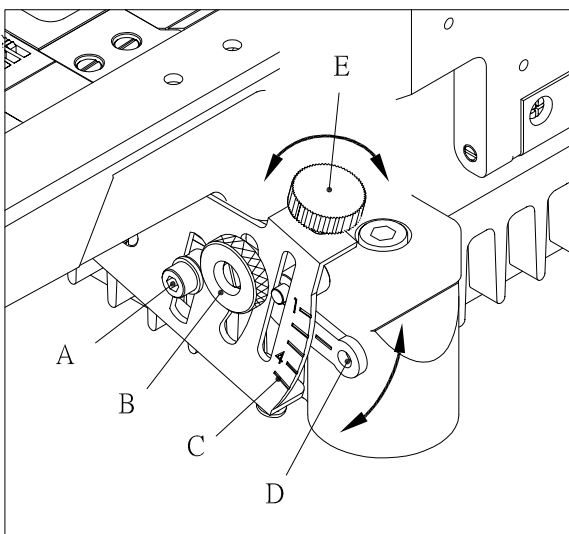
例如手輪上的刻線L(進給率3.6mm)指向定位線，這時候旋轉差動旋鈕(E)，使差動板手(D)刻線對正差動刻線(C)3.6，主送布齒(F)與副送布齒(G)的差動比為1比1，繼續向左旋轉差動旋鈕則為正差動，反之為逆差動。進給率與差動比的相互關係，如以下列表所示。(進給率調整請參閱上節7-3)

In order to overcome the difference among all kinds of fabrics and threads, our sewing machine has equipped with differential ratio adjustment mechanism.

Differential ratio divides into stretch and shrinkage differential, loosen nut B adjust level D and turn knob E in order to adjust differential ratio, tighten nut B after the adjustment. Adjust screw A in order to obtain the upper limit of differential ratio. By adjusting differential ratio in order to create puckering effects during the sewing process.

Normal differential feed or reverse differential feed can be adjusted freely by turning knob E. As differential feed and main feed are driven individually, when main feed amount (stitch length) is changed, the differential ratio should change accordingly. In this case, readjustment is necessary. The graduation shows the amount of differential feed. For instance, in case of the desired feed amount (stitch length) is "3.6" and the graduation is set at "3.6" by turning knob E, the differential ratio becomes 1:1. When setting the graduation over "3.6", it will become normal differential and if setting is under "3.6", then, it becomes reverse differential. For the main feed amount the upper limit is "4". Please refer to following chart for the relationship between stitch length and differential feed ratio (please refer to section 7-3 for stitch length adjustment).

進給率 Stitch length	最大伸縫比 Max. normal diff	最大縮縫比 Max. reverse diff
3.6 mm	1 : 1.1	1 : 0.3
2.5 mm	1 : 1.6	1 : 0.4
2.0 mm	1 : 2	1 : 0.5
1.4 mm	1 : 2.9	1 : 0.7



## 7-5. 針線收放量調整 Adjusting the needle thread take-up

因縫線種類不同，各有不一樣的伸縮性，故容易造成跳針、斷線、線跡不穩定等問題。本縫機有針線揚線臂，前導線桿，後導線桿，輔助張力控制板等，用來控制縫線的收放量以及穩定縫線的伸縮性。

針線揚線臂(A)、後導線桿(D)兩者在出廠時，均安裝於標準位置。針線揚線臂(A)上共有6條刻線，由右至左第3條刻線對齊承座(B)邊緣，以螺絲(C)調整，後導線桿(D)位置如附圖，以螺絲(E)調整，兩者於需要時可依箭頭方向調整。(圖1、2)

某些種類的線在針窩上不容易造出線環，結線鉤在挑線時容易造成失誤，這時候可以把針線通過輔助張力控制板(F)來穩定縫線。(圖3)

對於大伸縮性的縫線、線環不穩定、容易跳針等問題，可調整前導線桿(G)的高度來克服。特別是當結線鉤從右向左移動時，如果用合纖線時左針會跳針，使用混紡線右針容易勾到線，可將針棒降至下死點，以螺絲(I)來調整前導線桿(G)的上緣對正導線孔(H)，使前導線桿(G)盡可能放鬆針線的張力。(圖4)

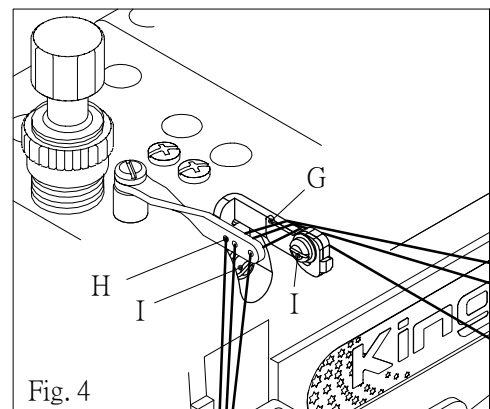
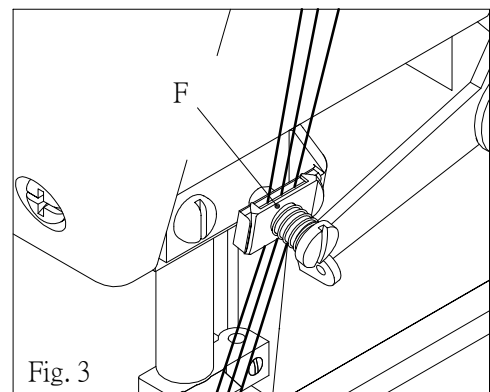
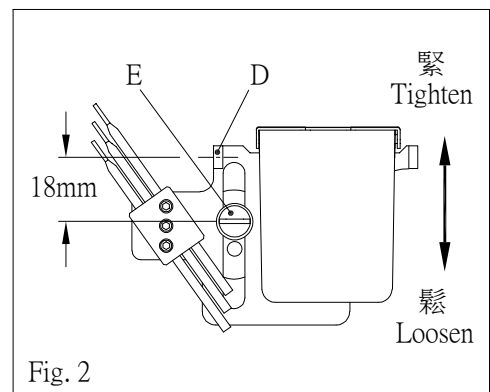
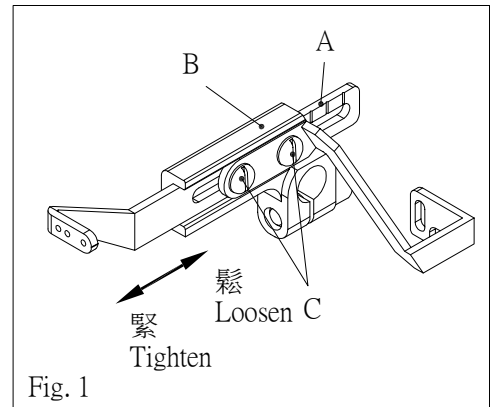
Different threads have different stretch tension and cause skip stitching thread breaking and unstable stitching easily. This machine equipped with thread take-up, front needle thread guide, rear thread guide and auxiliary thread tension control guide in order to give letter control of the looper thread take-up and stabilize the stretching of looper thread.

Thread take-up A, rear thread guide D were set-up at standard position when machines were out of factory.

There are 6 marks on thread take-up A and the third mark line from right to left, should even with the edge of bracket B and can be adjusted by screw C and rear thread guide's D portion as shown on illustration, can be adjusted by screw E. And bath can be adjusted according the arrow direction in order to obtain tighten or loosen effects. (Fig. 1、2)

Some times, it is not so easy to make loop for some kinds of thread and also make it difficult for looper to catch the needle thread, causing skip stitch. In such case, can use auxiliary thread tension control guide F to stabilize the threads. (Fig. 3)

In case of the formation of needle thread loop is unstable or skip stitching happened when using stretchable thread, you can solve this problem by adjusting the height of front needle thread guide G, especially, when looper moves from right to the left. If the left needle skip the stitch when using synthetic thread, or right needle interfere with the formation of thread loop when using blended thread, you can adjust front needle thread guide G, by adjusting the needle bar to its lowest position and by loosening screw I to adjust the top of front needle guard G to even with the centers of eyelets of thread guide H in order to loosen the needle thread tension. (Fig. 4)



## 7-6. 下結線鉤縫線收放量調整 Adjusting the looper thread take-up

針由上死點向下運動，當左針尖到結線鉤寬度的一半位置時，縫線(A)正好由揚線凸輪(C)的最高點脫離。調整凸輪的時序，可放鬆螺絲(B)，旋轉凸輪至適當的角度再鎖緊螺絲(B)，設定好揚線凸輪(C)的時序後再做試縫。(圖 1、2)

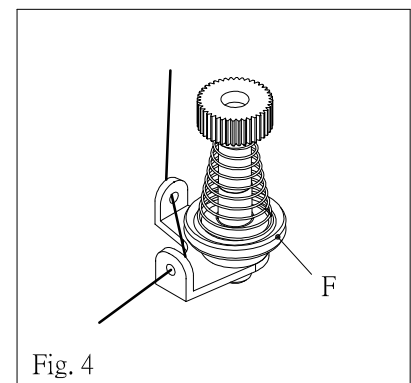
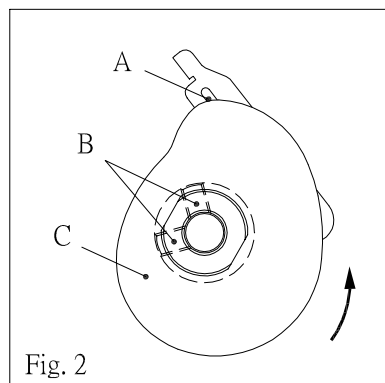
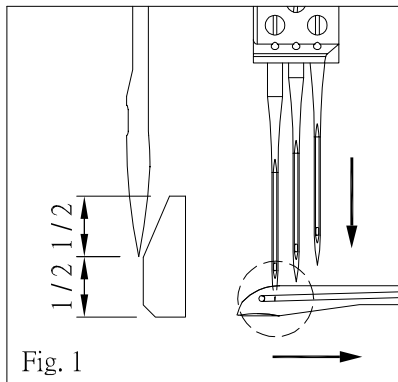
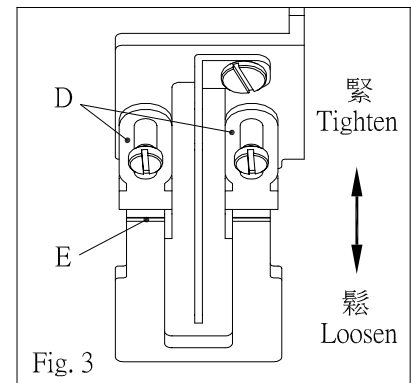
希望縫線拉緊一點時，將左右導線板(D)向定位刻線(E)方向移動。希望縫線放鬆一點時，將左右導線板(D)向定位刻線(E)反方向移動。(圖 3)

使用大伸縮性的縫線時除了將左右導線板移向定位刻線外並且將縫線拿出穩線壓板(F)。(圖 4)

When left needle comes down to the half point the thread A must get off from the highest position of looper thread take-up C. The adjustment is made by loosening screw B, turn the looper thread take-up C to the proper position and tighten the screw B. (Fig. 1、2)

To decrease the amount of looper thread in the seam, move thread guide D eyelet to aligning mark E. To increase move it backward. (Fig. 3)

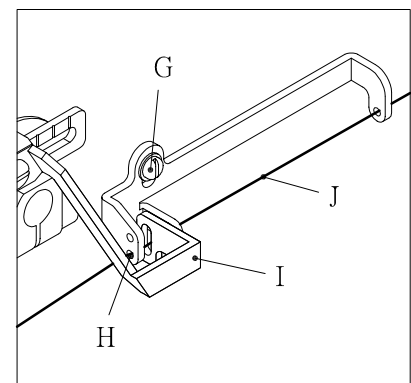
For stretchable threads, move right and left thread guides to aligning mark and also do not pass the thread between thread guide F. (Fig. 4)



## 7-7. 上裝飾線收放量調整 Adjusting spreader thread take-up

上裝飾線收放量由裝飾線揚線臂(I)來調整，其標準設定位置為揚線臂升到最高點時，縫線(J)與揚線臂(I)輕輕接觸。在需要拉緊裝飾線時，可放鬆螺絲(G)，將導線孔(H)向上移動，相反的需要放鬆裝飾線時，可將導線孔(H)向下移動，最後鎖緊螺絲(G)。

The thread amount of top cover thread can be adjusted by spreader thread take-up I. For standard position, move the spreader thread take up I all the way up to the highest point, and sewing thread J should lightly touch with spreader thread take-up I. Loosen the set screw G and move the spreader thread guide eyelet H upward in order to tighten the top cover thread, then tighten the screw G. Vice versa for loosen the top cover thread.



## 8. 與內部機構及時序有關的各項調整 Adjustment of machine

本機器在出廠前各個機構都設定在標準位置上，通常不需要再調整。在某些狀況下，例如更換不同的針號、更換結線鉤或是特殊質料的裁片、縫線等，有需要做內部調整時，請依照下述要領來進行。

This machine was sent to the standard position before delivery and it's unnecessary to re-adjust unless under some situation as changing the needle, looper, different kind of fabric or different sewing threads. Please adjust according to following items.

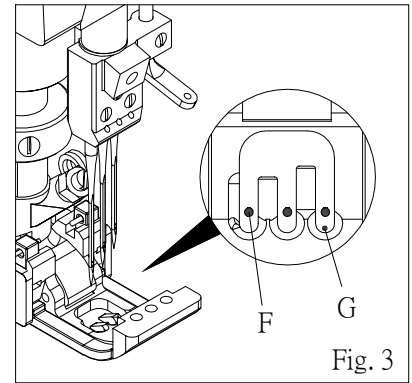
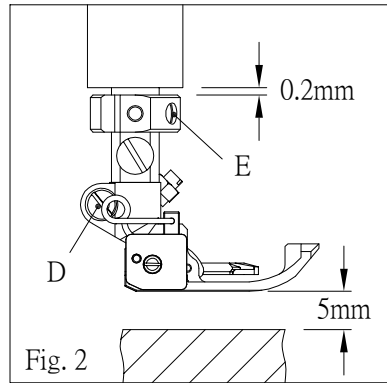
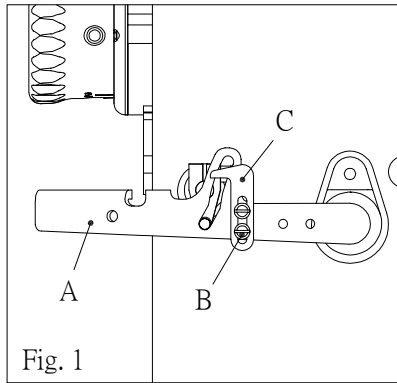
### 8-1. 更換壓腳及設定提昇高度 Adjusting presser foot and setting the height of presser foot

某些調整的工作，取下壓腳會比較容易進行，取出壓腳的方法如下，以螺絲(B) 放鬆止動鉤(C)，放鬆壓腳螺絲(D)、定位環螺絲(E)，壓下扳手(A)，昇高壓腳棒後即可拿出壓腳。(圖 1、2)

完成後依反向順序裝回，並且使壓腳針孔(G)對正縫針(F)。(圖 3)

It will be easier to conduct some adjustments by taking off the presser foot as follows : Loosening screw B in order to loosen stopper B, loosening screw D and collar screw E pressing down level A, lifting needle bar in order to take off presser foot. (Please refer to Fig. 1 and Fig. 2)

After finished the adjustment, please tighten the screw in reverse sequence and please make sure needle F point right into the center of the needle hole G of presser foot. (Please refer to Fig. 3)



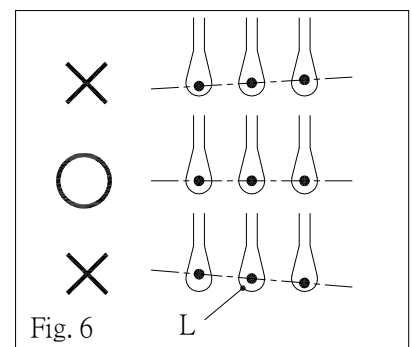
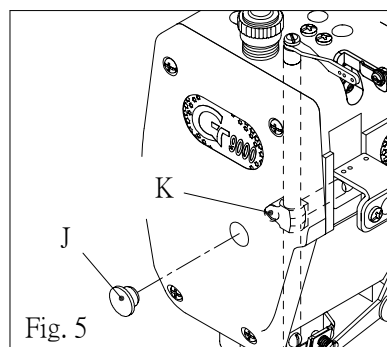
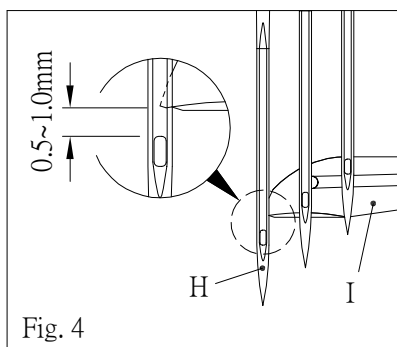
### 8-2. 針棒高度及針落點 Adjusting the height of needle bar and needle drop point

當結線鉤(I)與左針(H)交會時，鉤尖在針孔上方約0.5~1.0mm，為針棒高度設定標準位置。(圖 4)

調整時取下針棒護蓋上的孔塞(J)，放鬆螺絲(K)，上下移動針棒到適當位置，在鎖緊螺絲(K)前必須確認縫針對正針板孔(L)的中心。(圖 5、6)

When the tip of looper I comes to the center of left needle H, the looper should position above the upper end of needle eye by 0.5~1.0 mm as this is the standard position for needle bar. (Fig. 4)

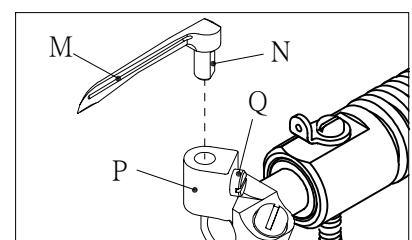
Loosen the screw K of needle bar clamp and adjust the needle bar to get proper height. After adjustments, tighten the screw K of needle bar clamp and make sure the needles are in the center of needle drop hole L of needle plate. (Fig. 5、6)



### 8-3. 安裝下結線鉤 How to install looper

將結線鉤(M)插入承座(P)的孔內，柄部平面部份(N)對正螺絲(Q)，確實將結線鉤(M)貼緊承座(P)後再鎖緊螺絲(Q)。

Insert looper M into looper holder P, make sure flat surface N. of looper crank point to the set screw Q, then, tighten set screw Q.

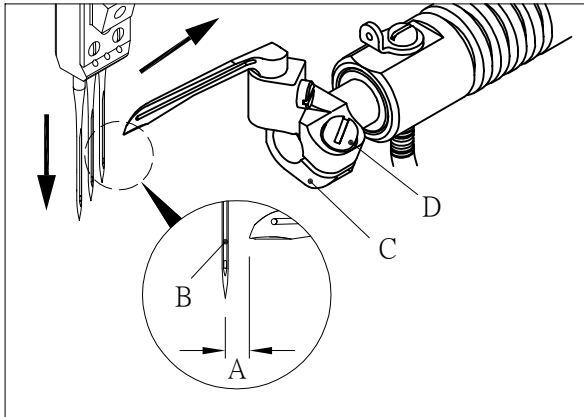


#### 8-4. 下結線鉤定位 How to set looper position

針棒運行至下死點時，結線鉤位於運動路徑最右端，此時結線鉤尖與右針(B)中心，有一標準的距離(A)，如以下附表。其調整法為放鬆螺絲(D)，左右移動承座(C)到適當位置，再鎖緊螺絲(D)。調整時應避免承座(C)的前後擺動，否則將影響下結線鉤與縫針前後之間隙。

When needle bar reached its lowest dead point, looper moved to its most right position. There should have a standard distance A, as chart listed, between the tip of looper and the center of right needle B.

Adjusting : Loosen screw D, moves looper holder C right or left till required position, then, tighten screw D. When adjusting please do not move looper holder C front or back, otherwise will affect the clearance between looper and needles.



針距 Needle gauge	標準距離 Standard distance (A)
4.0	4.0 mm
4.8	3.6 mm
5.6	3.2 mm
6.4	2.8 mm

#### 8-5. 下結線鉤與針的間隙 The clearance between looper and needle

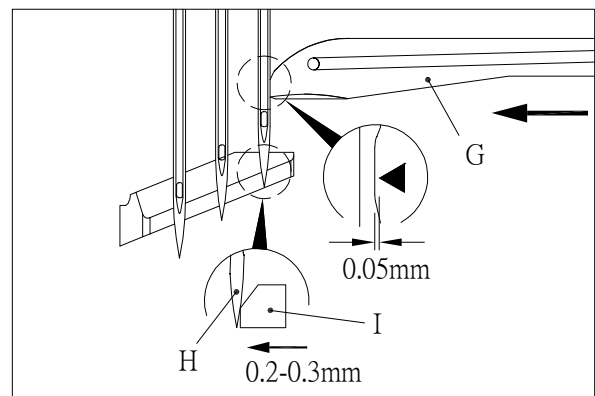
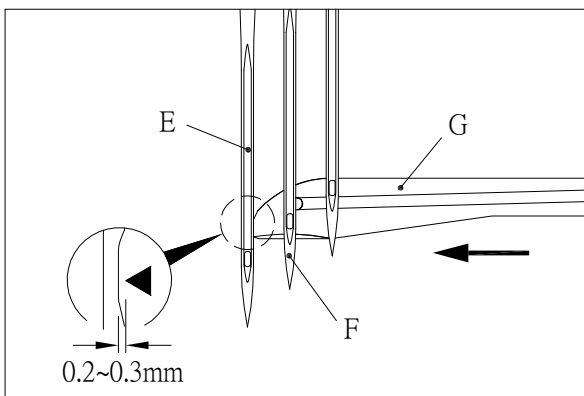
結線鉤尖(G)與左針(E)中心交會時，其間隙為0.2~0.3mm，與中針(F)中心交會時其間隙盡可能的小，與右針(H)中心交會時，後導針器(I)必須將右針(H)朝前推約0.2~0.3mm，而下結線鉤(G)與右針(H)的間隙為0~0.05mm。當針數為2針時，作法與上述左右針亦同，如下圖所示。其調整方法為放鬆螺絲(D)，前後擺動承座(C)到適當位置，再鎖緊螺絲(D)，圖形請參考上節，後導針器部份請參閱下節說明。

When looper G moves to the center of left needle E, the clearance should be 0.2~0.3 mm, and when looper G moves to middle needle F, the clearance between looper G and middle needle F should be as close as possible. When looper G moves to right needle H, the rear needle guide I should push right needle H forward approx 0.2~0.3 mm, by then, the clearance between looper G and right needle H should be 0~0.05 mm.

For two needle machine, the adjusting methods are the same as left needle and right needle. Please refer to the illustration as underneath.

How to adjust :

Loosen screw D, move looper holder C front and back till reached its desired position, then, tighten screw D. Please refer to the illustration as section 8-4 above. Please refer to next section for how to adjust the rear needle guide.



## 8-6. 針與後導針器 Needle and rear needle guide

設定後導針器高度

針棒在行進路徑的下死點，後導針器(A)的稜線(C)，須對正右針的針孔(B)中心。(圖 1)

設定後導針器角度及時序

當下結線鉤尖(F)與右針(E)中心交會時，後導針器(A)朝右針(E)推約0.2~0.3mm，與左針(D)間隙為0~0.05mm。而下結線鉤(F)與右針(E)，此時的間隙為0~0.05mm，與中針輕輕接觸，與左針(D)間隙為0.2~0.3mm。(圖 2)

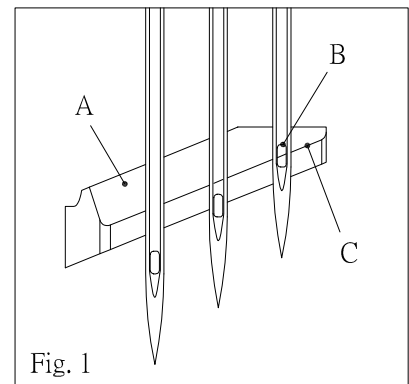
其調整方法為放鬆螺絲(G)，可上下前後調整後導針器的高度及角度，放鬆螺絲(H)旋轉導針座(I)，可調整後導針器與針前後的間隙。(圖 3)

How to set the height of rear needle guide :

When needle bar reached to its lowest dead point, the ridge line C of rear needle guide (A) should be positioned at the center of right needle eye B. (Fig. 1)

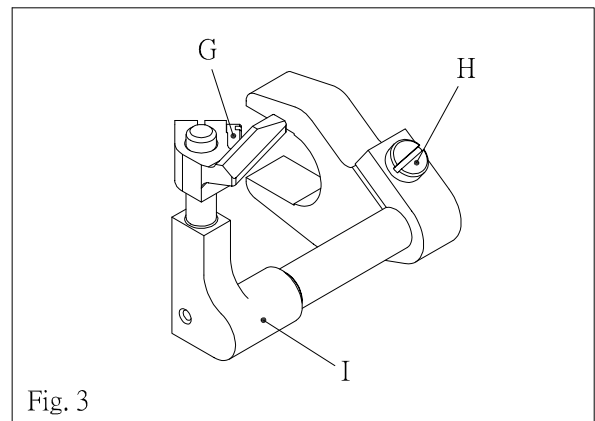
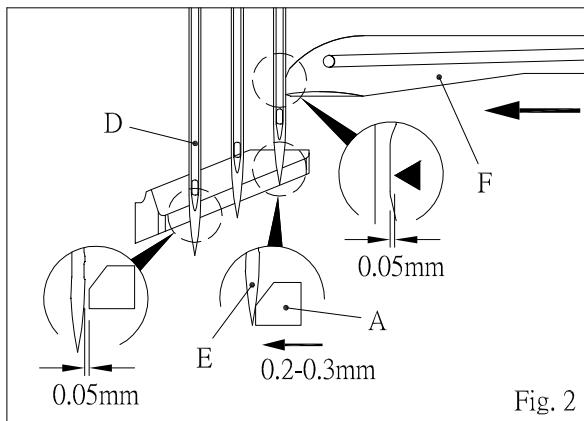
How to set the angle and timing of rear needle guide : When the tip of looper F moves to the center of right needle E, the rear needle guide A should push the right needle E forward approx.

0.2~0.3 mm and the clearance between rear needle guide and leftest needle D should be 0~0.05 mm by then, the clearance between looper F and rightest needle E should be 0~0.05 mm and looper should touch middle needle lightly and the clearance between rear needle guide and leftest needle D should be 0.2~0.3 mm. (Fig. 2)



Adjustment :

Loosen the set screw G from rear needle guide and can adjust the positions, up and down, front or back, of rear needle guide's height and angle. Loosen the screw H from rear needle guide, can adjust the front and back clearance between rear needle guide and needles. (Fig. 3)





## 8-7. 針與前導針器 Needle and front needle guide

設定前導針器角度及時序

當結線鉤(B)與左針(A)中心交會時，前導針器(C)的稜線(D)，在針尖上方1.5~2.0mm，而其間隙為0~0.3mm。結線鉤(B)退回到右針(E)中心時，針與前導針器(C)間隙為0~0.3mm。(圖1、2)

放鬆螺絲(G)可上下前後調整導針器的高度及角度，放鬆螺絲(F)旋轉導針座(H)，可調整前導針器與針前後的間隙，調整時旋轉手輪，使針、下結線鉤、前導針器之間的相互位置，至適當位置後，再鎖緊相關螺絲。(圖3)

How to set the angle and timing of front needle guide : When looper B reach the center of left needle A, the ridge line D of frons needle guide C should positioned at 1.5~2.0 mm above from the tip of needle and the clearance between left needle A and front needle guide C should be 0~0.3 mm and when looper B retreated to right needle E, the clearance between needle and front needle guide C should be 0~0.3 mm. (Fig. 1、2)

Adjustment : Loosen screw G can adjust the height and angle of front needle guide, loosen screw F and turning the front needle guide holder H can adjust the clearance between front needle guide and needle. When adjusting, turning hand wheel and make sure needle, looper and front needle guide at its corelation position, then tighten related screws. (Fig. 3)

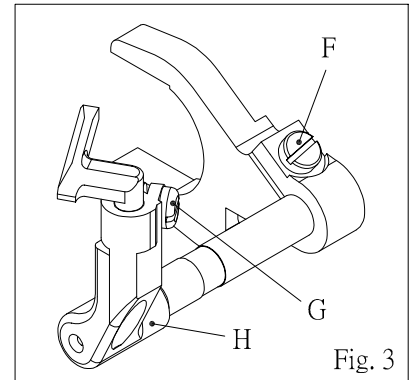


Fig. 3

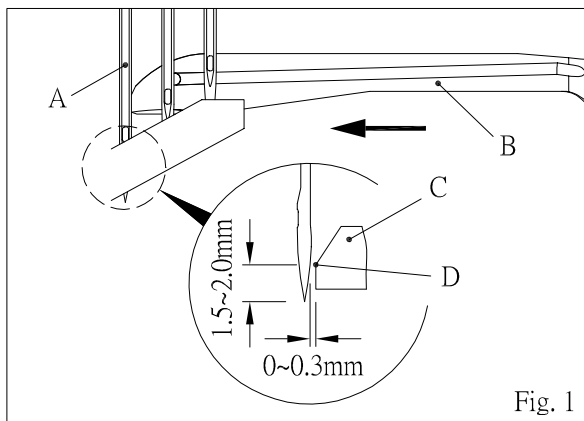


Fig. 1

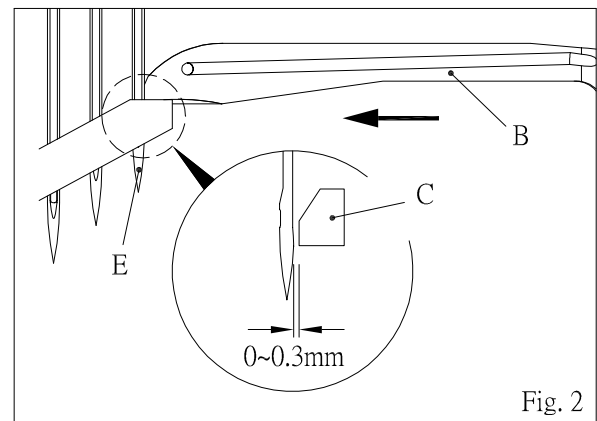


Fig. 2

## 8-8. 設定送布齒高度

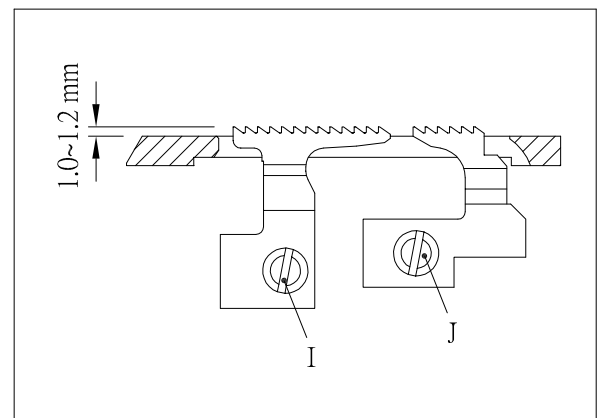
Setting the height of feed dogs

送布齒在行進路徑的最高點時，主副兩送布齒必須同一高度，並且平行針板，同時浮出針板面1.0~1.2mm。主副兩送布齒分別以螺絲(I)、(J)做調整。

When feed dogs reach its highest position during its movement, main feed dog and differential feed dog should be at same height and parallel with needle plate and also above the needle plate 1.0~1.2 mm.

Adjustment :

Adjusting screw I and J in order to adjust the height of main feed dog and differential feed dog.



## 9. 裝飾縫 Coverstitch

### 9-1. 上裝飾縫結線鉤安裝及定位 Installing and setting the spreader looper

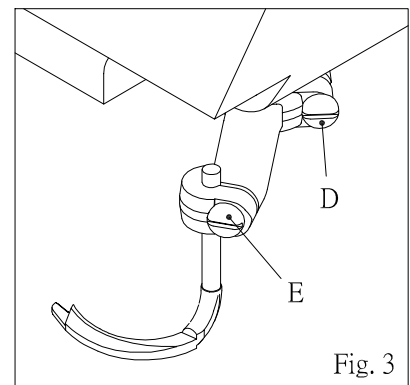
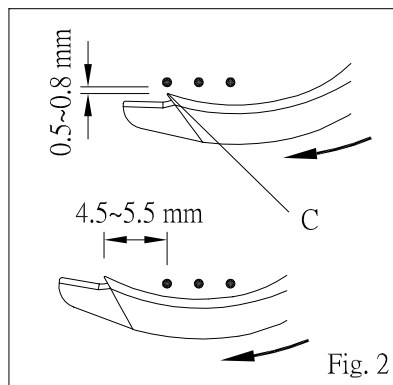
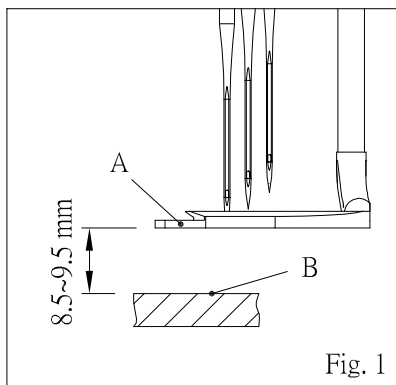
結線鉤(A)安裝高度為距針板面(B)8.5~9.5mm。(圖 1)

結線鉤安裝的角度，當結線鉤向左擺動，掛線鉤(C)與左針交會時，與左針間隙為0.5~0.8 mm，再繼續向左擺動到行程的最左端時，掛線鉤(C)距左針中心為4.5~5.5mm。調整時可放鬆擺動臂螺絲(D)及結線鉤螺絲(E)，來調整結線鉤的上下及擺動位置。(圖 2、3)

The distance between spreader A and the surface B of needle plate should be 8.5~9.5 mm. (Fig. 1)

How to set the angle of spreader looper :

When spreader looper moves to its left, the hook blade C meets left needle, the clearance between hook blade C and left needle should be 0.5~0.8 mm, when spreader looper moves to its leftest dead point, the distance between its hook blade C and the center of left needle should be 4.5~5.5 mm. When adjusting, loosen screw D and E from spreader arm in order to adjust its position of spreader looper. (Fig. 2、3)



### 9-2. 安裝裝飾線導線板 Installation of thread guide of spreader looper

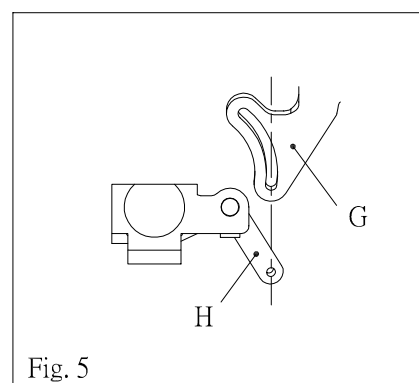
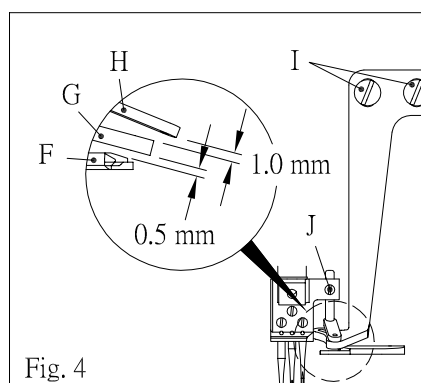
裝飾線導線板(G)的下端位於結線鉤(F)上方0.5mm，結線鉤(F)擺動到最右端時，裝飾線必須輕輕掛在導線板(G)上。調整完成後，鎖緊螺絲(I)。(圖 4)

針棒行進到下死點時，導線板(G)與導線桿(H)之間間隙約為1.0mm，導線板(G)與導線桿(H)線孔中心約略重合，調整完成後，鎖緊螺絲(J)。(圖 4、5)

The distance should be 0.5 mm between the bottom of thread guide G and the top surface of spreader looper F.

When spreader looper F moves to its most right position, the coverstitch thread should hanging in the thread guide G loosely, please tighten screw I after the adjustments. (Fig. 4)

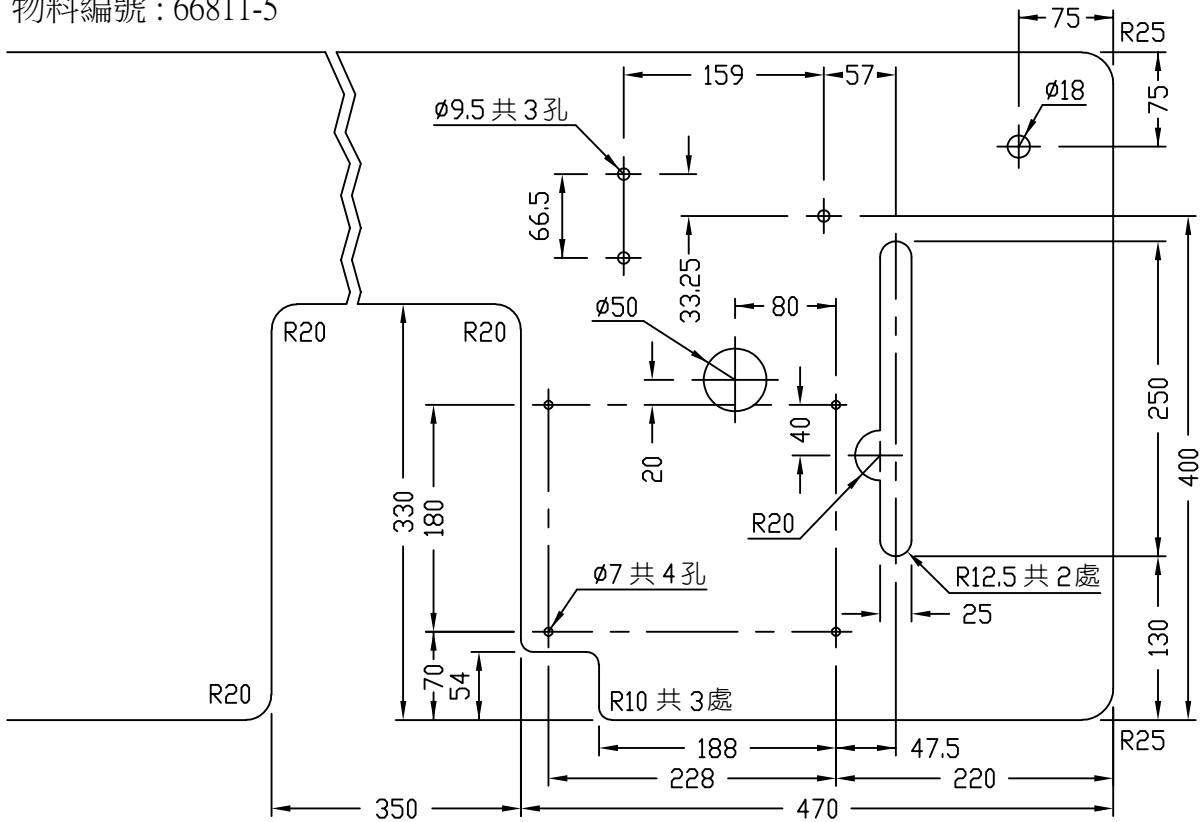
When needle bar moves to its lowest dead point, the clearance should be 1.0 mm between thread guide H and thread guide G and the thread holes should be lined up with each other. (Fig. 4, 5). After adjustments, please tighten screw J.



10. 車板圖 Table top cut-out

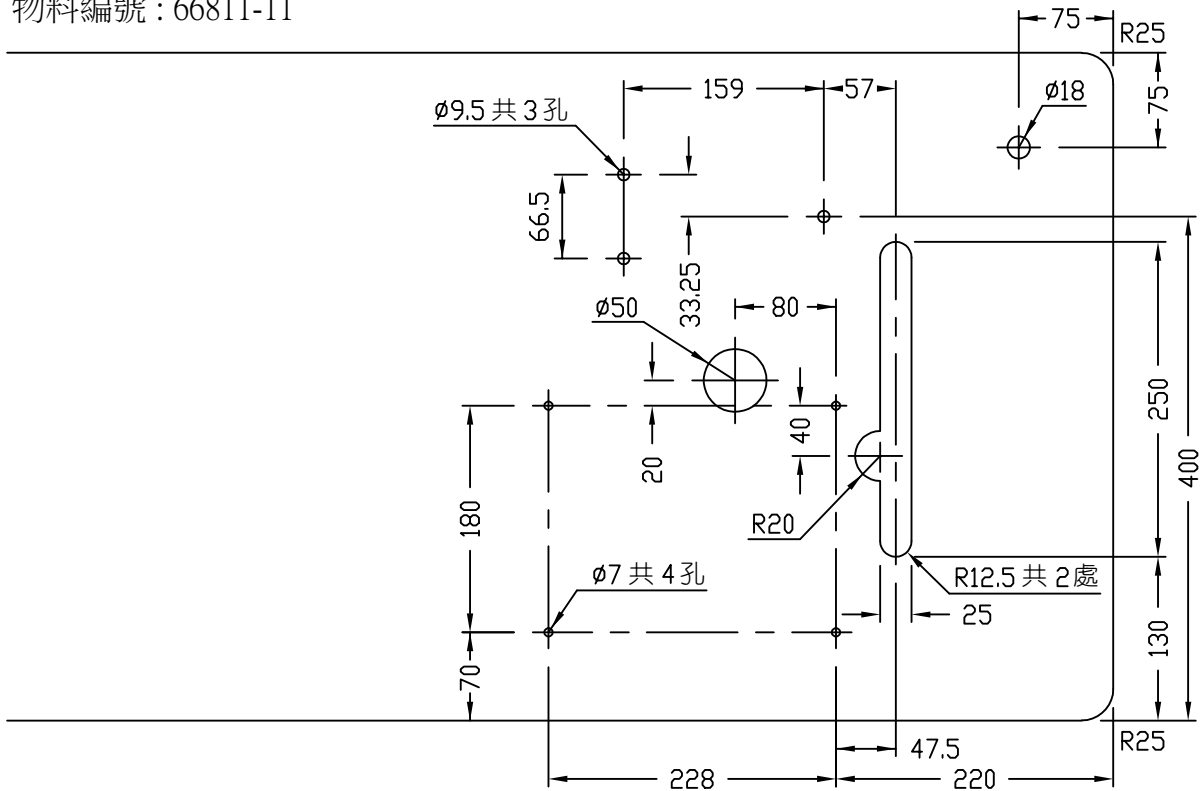
10-1. CT9000 / CT9085 / CT9311 / CT9711 上載式開口型車板 Open-cut table top type

物料編號 : 66811-5



10-2. CT9000 / CT9711 上載式車板 Standard table top type

物料編號 : 66811-11

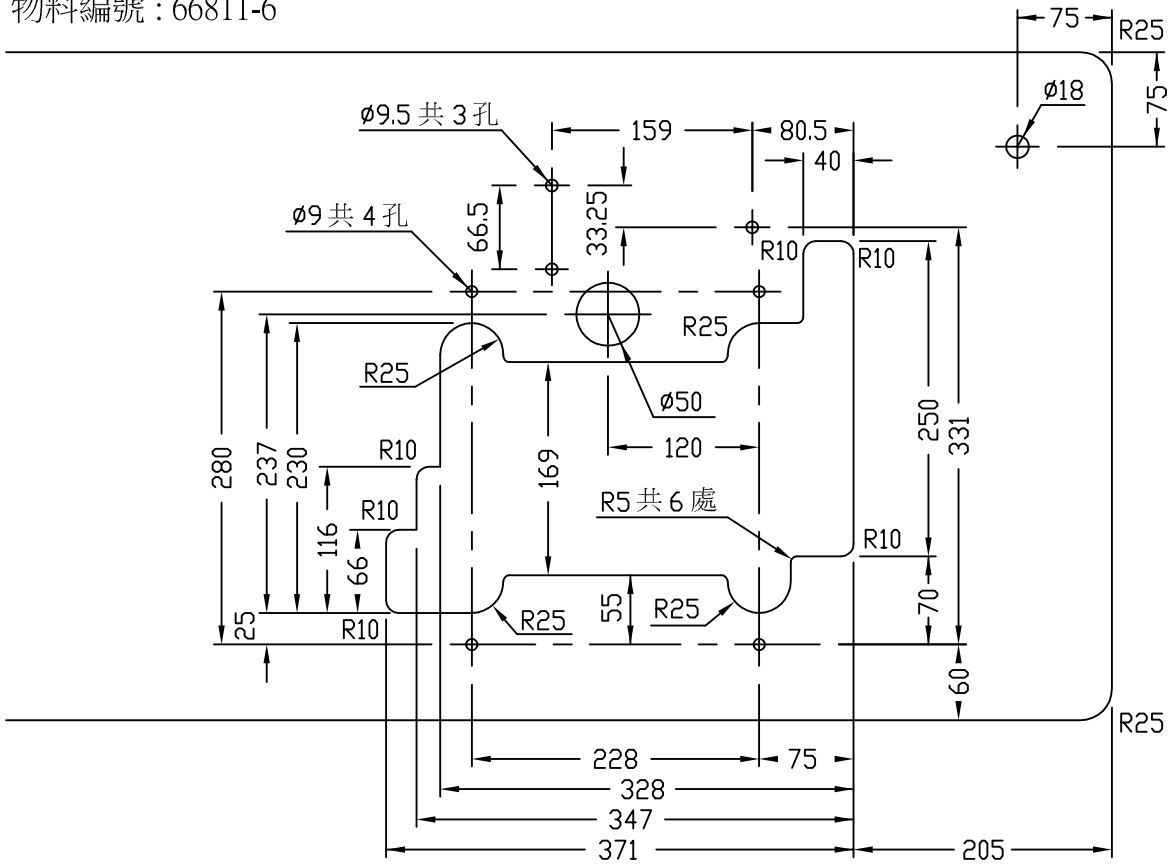


Unit : mm

Tolerance :  $\pm 2$

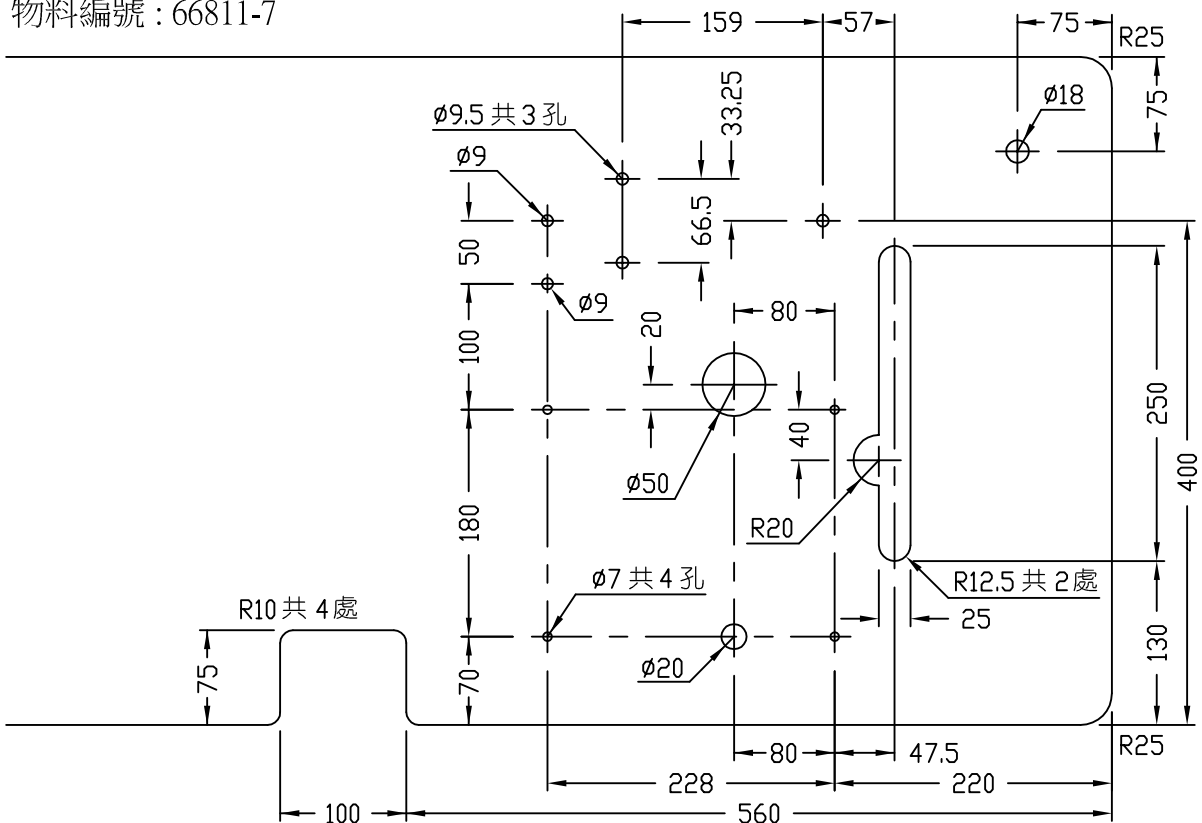
10-3. CT9000 / CT9003 半沉式車板 Semi-submerged type

物料編號 : 66811-6



10-4. CT9005 上載式車板 Standard table top type

物料編號 : 66811-7

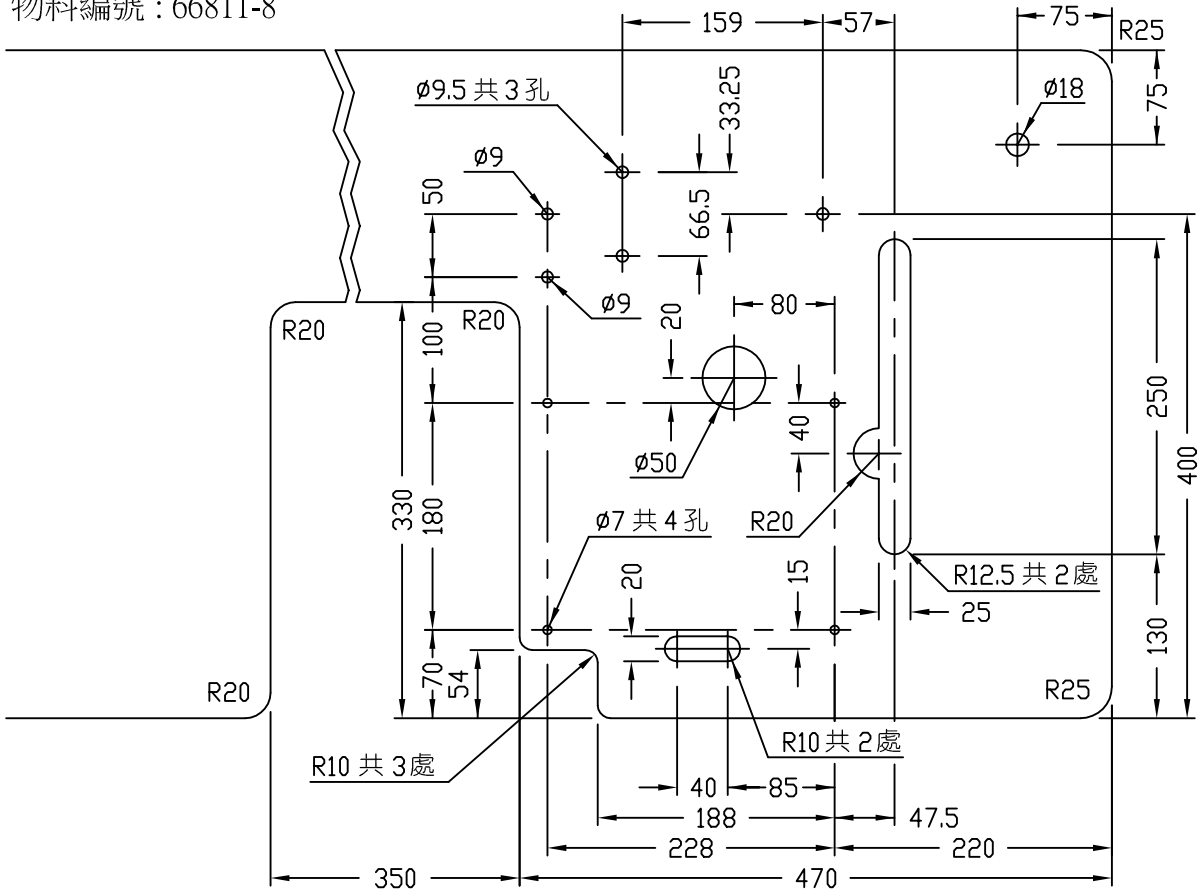


Unit : mm

Tolerance :  $\pm 2$

10-5. CT9042 上載式開口型車板 Open-cut table top type

物料編號 : 66811-8



Unit : mm

Tolerance :  $\pm 2$