



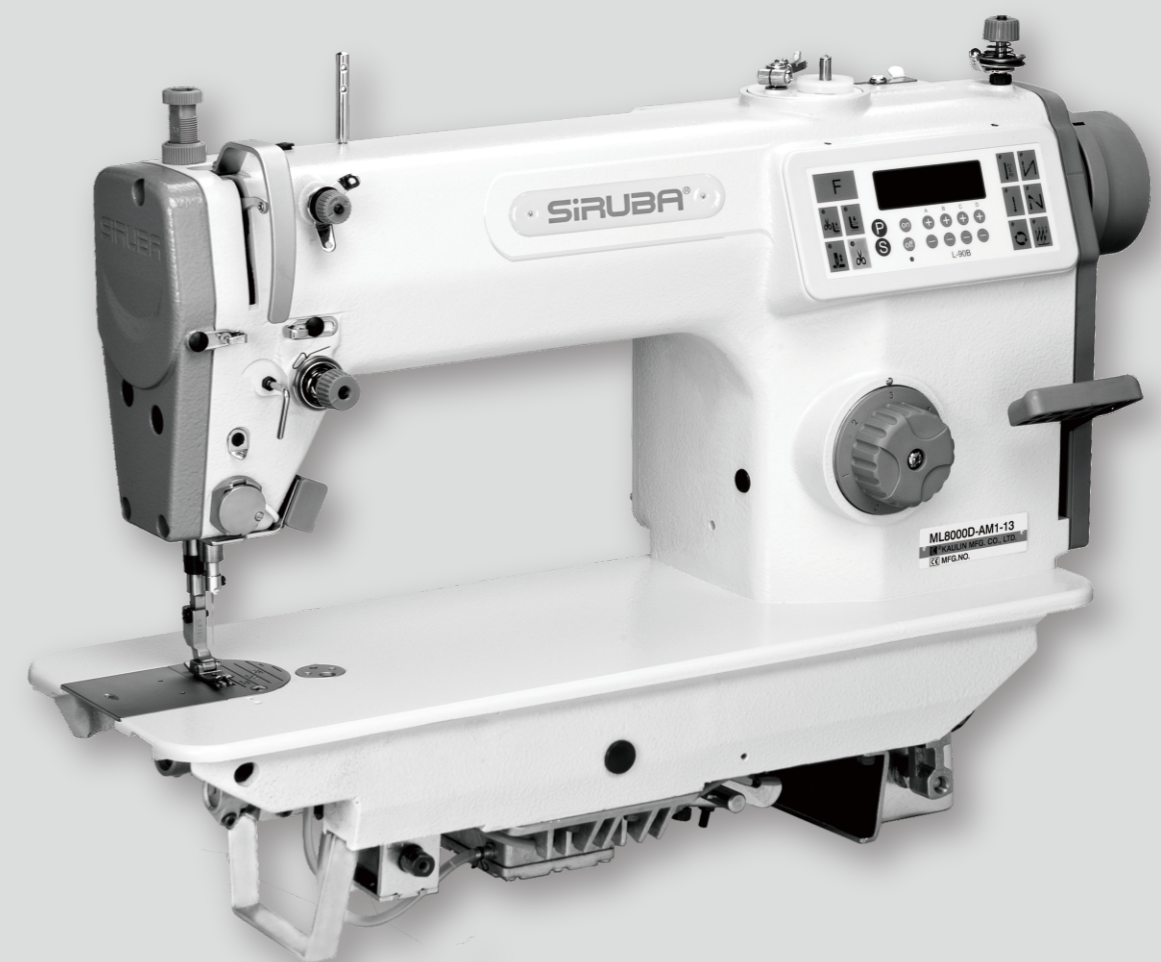
# ML8000D

**SIRUBA**<sup>®</sup>  
銀箭牌工業用縫紉機  
INDUSTRIAL SEWING MACHINE



# ML8000D

高林股份有限公司 KAULIN MFG. CO., LTD.






## 使用說明書 INSTRUCTION BOOK



## 危險水準的說明 Explanation of Dangerous Level

 危險 Dangerous	<p>如果忽視此標記而運行了錯誤的機械操作, 保養時肯定會引起當事者或第三者人員重傷或死亡</p> <p>Don't ignore the warning sign and don't proceed incorrect operation. Or it will cause the person or the third party seriously injured or dead during maintenance.</p>
 注意 Caution	<p>如果忽視此標記而運行了錯誤的機械操作, 保養時有可能會引起當事者或第三者人員受傷及造成設備損壞</p> <p>Ignoring this warning sign and proceed incorrect operation will cause the person involved or the third party wounded and equipment damaged during maintenance.</p>

## 警告圖案表示及表示標幟的說明 Explanation of Warning Signs and Labels

警告圖案表示 Warning Sign		運動部位, 謹防工傷事故 Moving part, beware of industrial accident
		高壓部位, 謹防觸電事故 High voltage, beware of electric shock
		高溫部位, 謹防燙傷事故 High temperature, beware of burns
指示標誌 Instruction Label		禁止 Prohibited
		地線的接線表示 Indication of ground wiring

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**警告！**

當使用這台機器，基本安全預防應恆被遵守，以減輕火災、電擊、或是個人傷害的風險。包含以下注意事項。  
在操作這台機器之前，請閱讀所有說明並且謹記於心。

1. **保持工作場所清潔**  
雜亂的環境與椅子會招引危害。
2. **考量工作場所環境**  
勿暴露電源於雨水之中、勿在濕氣重的地方或潮濕的場所使用機械器具。保持工作場所良好的照明。當有引發火災或爆炸危險時，勿使用電源工具。
3. **防範於電擊危害**  
避免身體接觸地線或是接地表面。(即：管線，發熱物體，以及冷凍庫)
4. **勿使孩童接近**  
不要讓訪客碰觸工具或是延伸管線
5. **適當的穿著**  
不要穿著寬鬆衣物或穿戴珠寶，這可能被活動零件拉扯而導致危險。穿戴護髮套以包含住長髮。
6. **不要任意拉扯電線**  
絕不要用電線端拉扯機器，或是從插座猛拉電線來拔掉電線。使電線遠離熱源、油類或是尖銳物品。
7. **謹慎保養機器**  
遵從指示來添加潤滑油或是更換附件。定期檢測工具用線，如果有所損害，請使用合格的維修器具來修復。

**Warning!**

When using this machine, basic safety precautions should always be followed to reduce the risk of fire, electric shock and personal injury, including the followings. Read all these instructions before operating this product and save these instructions.

1. **Keep work area clean**  
Cluttered areas and benches cause injuries.
2. **Consider environment's safety**  
Do not expose power to rain. Do not use machine tools in damp or wet locations. Keep work area well lit. Do not use power tools where there is risk to cause any fire or explosion.
3. **Guard against electric shock**  
Avoid body contact with earthed or grounded surfaces (e.g. Pipes, radiators, ranges refrigerators.)
4. **Keep children away**  
Do not let visitors touch the tool or extension code.
5. **Dress properly**  
Do not wear loose clothing or jewelry, they may be caught in moving parts. Wear protecting hair covering to contain long hair.
6. **Do not abuse the cord**  
Never carry the machine by cord or yank it to disconnect it from the socket. Keep the cord away from heat, oil, and sharp object.
7. **Maintain machine with care**  
Follow instructions for lubrication and changing accessories. Inspect tool cord periodically. If damaged, have it repaired by an authorized service facility.



8. **分開機器**  
當不使用機器時、維修前、以及更換配件時。
9. **避免誤啟動**  
不要以手指置於啟動開關上之後，搬運一個已插入電源的工具。確定在插電之前，電源開關是關閉的。
10. **檢查損害零件**  
在進一步使用器具之前，應該小心檢查並確認損傷的零件或是穿戴保護器具來確認零件會正確運轉並且呈現應有功能。
11. **警告**  
除了在這本使用說明手冊中建議的功能之外，任何附件或是配件的使用，都可能會導致個人傷害的危險。
12. **由合格人員來修理器具**  
所有的修理工作應該由合格的人員使用原始個別零件來作修理。

### 連接電源的特別警示

1. 只可與有"CE"認證的按壓啟動裝置連接這台機器。
2. 遵守此使用說明手冊來安裝控制裝置。
3. 在操作過程中，永遠保持機器適當的接地。
4. 在調整、更換零件、或是維修保養之前，必須確定將插頭由插座拔出，以預防任何機器意料之外的啟動而造成危害。








8. **Disconnect machine**  
When not in use, before servicing and when changing accessories.
9. **Avoid unintentional starting**  
Do not carry a plug-in tool with a finger on the switch. Ensure the power switch is off when plugging in.
10. **Check damaged parts**  
Before further use of the tool, a guard or other part that is damaged should be carefully checked to determine that it will operate properly and perform its intended function.
11. **Warning**  
The use of any accessory or attachment, other than those recommended in this instruction manual, may present a risk of personal injury.
12. **Have your tool repaired by a qualified person**  
Repairs should only be carried out by qualified persons using original spare parts.

### **SPECIAL WARNING FOR ELECTRIC CONNECTION!**

1. Incorporate this machine only with "CE" certificate hold-to-run control device.
2. Follow the instruction manual device to install control device.
3. Always earth machine appropriately during operation.
4. Before adjustment, parts change or servicing must be sure to pull out the plug from socket to prevent the hazard of unintentionally start of machine.








### **重要安全事項說明**

恭喜您購買本機器。為了使這台機器能獲得最佳功能以及安全的操作，務必請正確的使用這台機器，使用前請仔細閱讀使用說明書，希望您能長期使用它。請記得將此說明書放在容易取得的地方。


-  1. 當您使用機器時，除了以下事項外，請注意其他基本安全措施。
-  2. 使用機器前，除了這本使用說明書外，請詳細閱讀其他有關說明書。此外，請妥為保存這本使用說明書，以便需要時可以隨時取閱。
-  3. 先確認機器是符合貴國安全規定及標準後，再使用機器。
-  4. 當機器完成操作準備時，所有安全配備必需安裝就緒，在缺少所述安全配備下操作是不被允許的，以免導致人員受傷。
-  5. 此機器應由受過適當訓練之操作員操作。
-  6. 為了安全，我們建議您配戴安全眼鏡。
-  7. 以下情形，請先關閉電源或拔掉插頭：
  - (1) 穿針線、線導片、天平以及更換梭子時，
  - (2) 更換針、押具、針板、送具、頂針片、喇叭、車布導板，以及其他附屬配件時。


### **IMPORTANT SAFETY INSTRUCTIONS**


For operating safely and getting the best functions of this machine, you must operate it correctly. Please read and follow the instructions of this manual, and keep it at hand for future references. We are confident that you will enjoy this machine as much as we enjoy manufacturing it.

-  1. Instead of the following instructions, when you use this machine, please pay attention to the basic safety measures.
-  2. Before using this machine, please read this manual and all related instructions. In addition, please keep this manual for future needs.
-  3. Before using this machine, please ascertain that it conforms with safety standards and regulations of your country.
-  4. When the machine is ready for operation, all the safety equipments must be ready. Operate this machine without the specified safety devices is not allowed.
-  5. This machine must be operated by a properly trained operator.
-  6. For your own safety, we suggest you wearing goggles.
-  7. Please turn off the power switch or disconnect it for any one of the circumstances of the followings :
  - (1) When threading needle(s), adjusting thread Take-up(s), thread guide(s), and / or replacing bobbin(s),
  - (2) When replacing needles, presser feet, needle plates, feed dogs, needle guards, horns, cloth guides and other parts or accessories,


- (3) 維修工作時。
- (4) 離開工作場所或工作場所無人看顧時。
- (5) 若使用離合器馬達而無煞車片裝置時，必需待馬達完全停止。


 8. 假如不慎讓機器及配件使用之油或油脂，接觸到眼睛、皮膚或誤食時，請立刻以水清洗接觸部位及就診。


 9. 請勿擅自碰觸運轉中之零件及配件及注意機器電源是否已開啟，以免導致人員受傷。

 10. 維修、修改及調整等工作，需由受過適當訓練的技師或熟手為之。維修時只許使用指定之零件。


 11. 一般維修及檢查工作必須由受過適當訓練的人員為之。


 12. 電子零件維修及保養工作必須由資深的電子技師為之，或由非常熟練的人員檢查及指導，當發現零件損壞時，請立刻停止機器運轉。


 13. 在做裝有氣動式零件(例如氣缸)機器的維修及保養工作前，機器連接空壓機及高壓空氣必須予以關閉及卸除，機器中殘存高壓氣體必需予以消除，此外調整及性能檢查只能由受過適當訓練的技師或熟手為之。


 14. 機器使用一段時間，必需定期清理。


- (3) When repairing,
- (4) When the operator leaves the working place or leaves the machine unattended.
- (5) If clutch motors without brake pads are used, must wait until the motor stops completely.


 8. If grease, oil, or any fluid contacts your skin or eyes by any chance, please wash the contacted area completely with clean water and consult a doctor. Or, swallow any fluid mistakenly, consult a doctor immediately.


 9. Do not touch any functioning parts and devices. Always attend to whether power switch is on or off before operating in order to prevent anyone from getting hurts.


 10. Qualified technicians are required for adjustment, modification, and repair. Only use assigned parts for replacement.


 11. Routine maintenance and service must be performed by well trained persons, or qualified technicians.


 12. Maintain and check the electronic parts must be done by qualified electrician or well-trained persons. If any electronic part damaged or malfunctioned, stop the machine immediately.


 13. The air hose has to be detached from the machine and the compressor or air supply has to be cut off before repairing and servicing the machine equipped with pneumatic parts such as an air cylinder. Qualified technicians or well-trained persons are required for adjustment and repairs.

 14. To ensure the best performance, periodically clean the machine is necessary.


 15. 為使機器能正常操作及減少噪音，機台務必平放地上，機器避免在強烈噪音的環境下操作


 16. 選用適當的電源插頭，並由電子技師將其安裝在機器上，且插頭必需插在有接地線的之插座上。


 17. 機器只允許被使用於指定用途上，其他用途是不允許的


 18. 修改或變更機器必需依照安全規定及標準，同時採取有效的安全措施，本公司不承擔任何因私自修改或變更機器所引起損壞之責


19. 警告標誌以兩種符號標示：


 (1) 對操作員或服務人員之傷害危險，也為了避免觸電之危險，請勿打開馬達電器箱之外蓋，也不要觸摸電器箱裡面之零件


 (2) 必需特別注意事項  
a. 絕對不可在移開皮帶蓋，手指保護蓋或安全配件後，進行機器操作，以免導致人員受傷

 b. 為了避免被機器纏住，當機器運轉中，您的手、頭髮及衣服，需遠離手輪，皮帶及馬達；此外這些部位周圍不可放置任何物品，以免導致人員受傷


 15. In order to operate properly and to reduce the noise, please place the machine flat and level on the ground. Avoid operating the sewing machine at a noisy surrounding.


 16. Select a proper power plug and install it by an electrician. Please connect the power plug to a grounded receptacle.


 17. This machine can only be used for the designed purpose. Other uses of this machine are not allowed.

 18. Any modification or conversion made on this machine must be conformed with the safety standards and regulations. Precaution is necessary. No responsibility will our company take for damages caused by any modification or conversion of this machine without permission.

19. Two safety warning signs are applied as warning signs:

 (1) For the safety of operators and service persons, please don't open the cover of any electronic control boxes of motor or other devices and don't touch any components inside to avoid electrical shock hazards.

 (2) Always keep in mind :  
a. Please never operate this machine without belt cover, finger guard or any safety device to avoid physical injury.

 b. Please keep your hair, fingers and cloths away from the hand wheel, V belt and motor while the machine is in operation, as well as never put anything near these parts, to prevent the risk of injuries by tangled into them.



c. 當您打開電源開關後或機器已在運轉中，絕不可將您的手放在針的下方或針線控線桿外蓋中，以免導致人員受傷。



c. Please never put your fingers under the needle(s) or in the thread take-up cover to prevent physical injuries when you turn on the power switch or operate the machine.



d. 當機器運轉中，梭頭高速轉動，為了避免對手可能引起之傷害，必需確定您的手保持遠離梭頭附近。此外，當更換梭子時，確定電源開關已關閉，以免導致人員受傷。



d. While the machine is in operation, the hook rotates at a high speed. Please keep your hands away from the area of hook to prevent any potential injury to your hands. In addition, please make sure to turn off the power of the machine while changing bobbins.



e. 當放置或抬起機頭時，小心勿將手置於機器中，以免導致人員受傷。



e. Be careful and do not place your fingers inside the machine when placing or lifting the machine head to avoid possible physical injuries.



f. 為了避免機器突然啟動而引起可能意外，當機頭傾斜或移開皮帶蓋及皮帶時，請關掉機器電源，以免導致人員受傷。



f. Please turn off the power before tilting the machine head or removing the belt cover and the V belt to avoid possible accidents due to abrupt start of this machine.



g. 如果您的機器是配置伺服馬達，機器於靜止狀態時，馬達是不會產生噪音的，為了避免機器突然啟動而引起可能意外，故請關掉機器電源。



g. For machines equipped servo motors, the motors do not produce noise while the machines are at rest. Therefore, please turn off the power of this machine to avoid possible accidents due to abrupt start of the machine.



h. 為了避免觸電之危險，請絕不要在移開電源接地線後操作機器。



h. Never operate the sewing machine after the ground wire is removed to avoid electrical shock hazards.



i. 為了避免觸電或電子零件損壞而引起之可能意外，請先切斷電源，再插上或拔掉插頭。



i. Please turn the power switch off before connecting or disconnecting the power plug to prevent possible accidents due to electric shock or damaged electronic components.

## 特別事項

為了避免機器故障及損壞，請先確定以下事項：



1. 當您安裝好機器後，做第一次機器操作前，請徹底清潔機器。



2. 清除運送途中累積之灰塵及溢出之油脂。



3. 確定電壓及馬達相數(單相或三相)安裝正確。



4. 確定電源插頭正確地接上電源。



5. 當使用電壓與標示電壓不同時，請勿使用機器。



6. 確定機器轉動方向是否正確。



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

## WARNING

Please confirm the followings to avoid malfunction or damage to this machine.



1. After installing the machine, and before the first operation, please clean it completely.



2. Clean all dust and overflowed oil during transportation.



3. Confirm that the voltage and the phase (single or 3 phase) of motor are set correctly.



4. Confirm that the power plug is correctly connected to the power supply.



5. Never use the machine when the local voltage type is different from the marked voltage on the nametag attached on the machine.



6. Confirm that the rotating direction of the machine pulley is correct.



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

## 警告標籤

- 縫紉機上有下列警告標籤。(圖1, 圖2)
- 當使用縫紉機時，請遵守標籤上的說明。如果標籤脫落或模糊不清，請和購買商店聯繫。

## WARNING TAG

- The following warning tags will be attached on the sewing machine. (Fig. 1, Fig. 2)
- When using the sewing machine, please follow the instructions of the tags. Please contact the dealer if any of the tags is fallen off or fuzzy.





圖1/Fig. 1

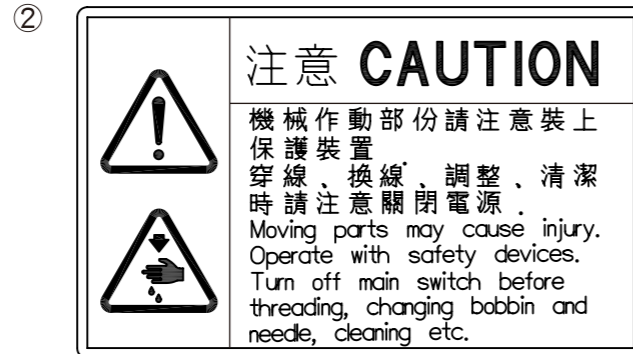


圖2/Fig.2

③ 必須接地

接駁地線不牢固，是造成觸電或誤動作的原因。

④ 表示轉動方向

安全保護裝置(圖3)

- (A) 護指器
- (B) 護目鏡

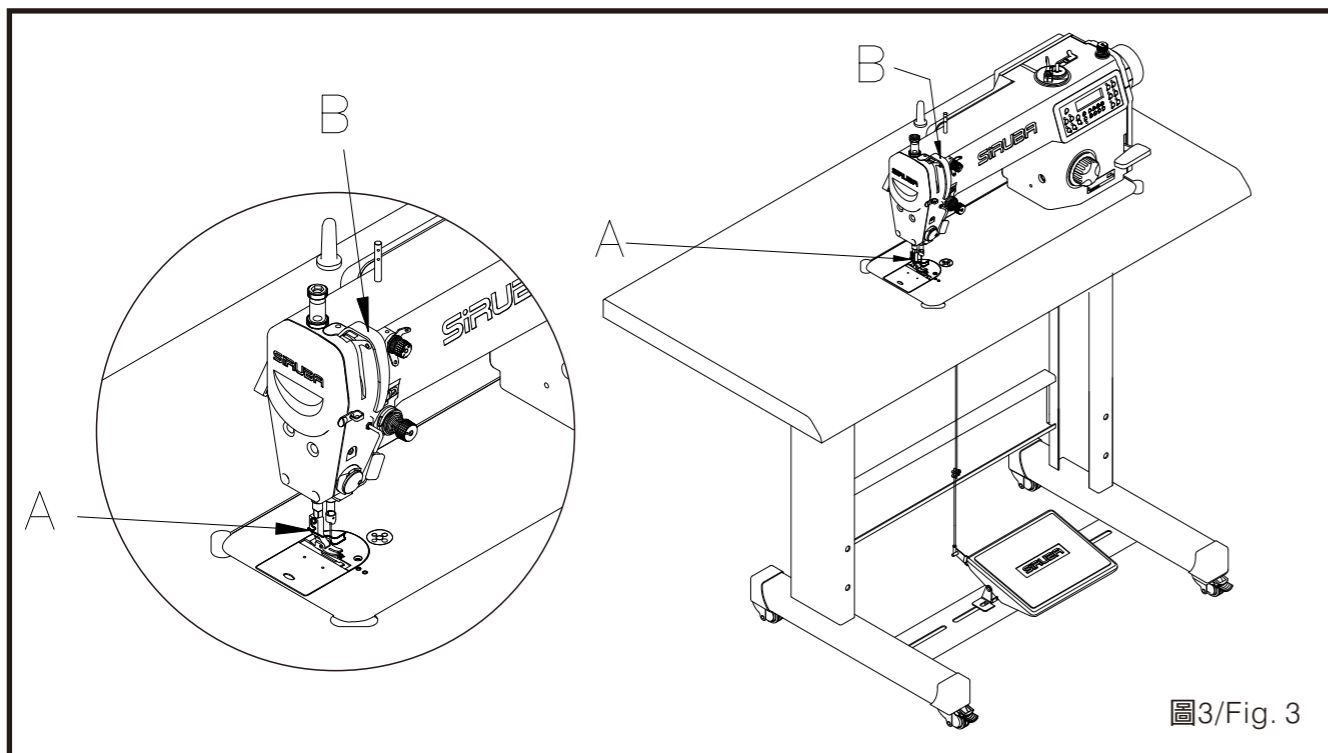


圖3/Fig. 3

### 護針安全圖說

本縫紉機之押具防護裝置如圖所示，為保護操作者之操作安全，嚴禁將此裝置拆卸。

### SAFETY ILLUSTRATION OF NEEDLE GUARD

The presser foot protection device is as shown as the figure 4. For safety of all operators, this device is restricted to disassemble.

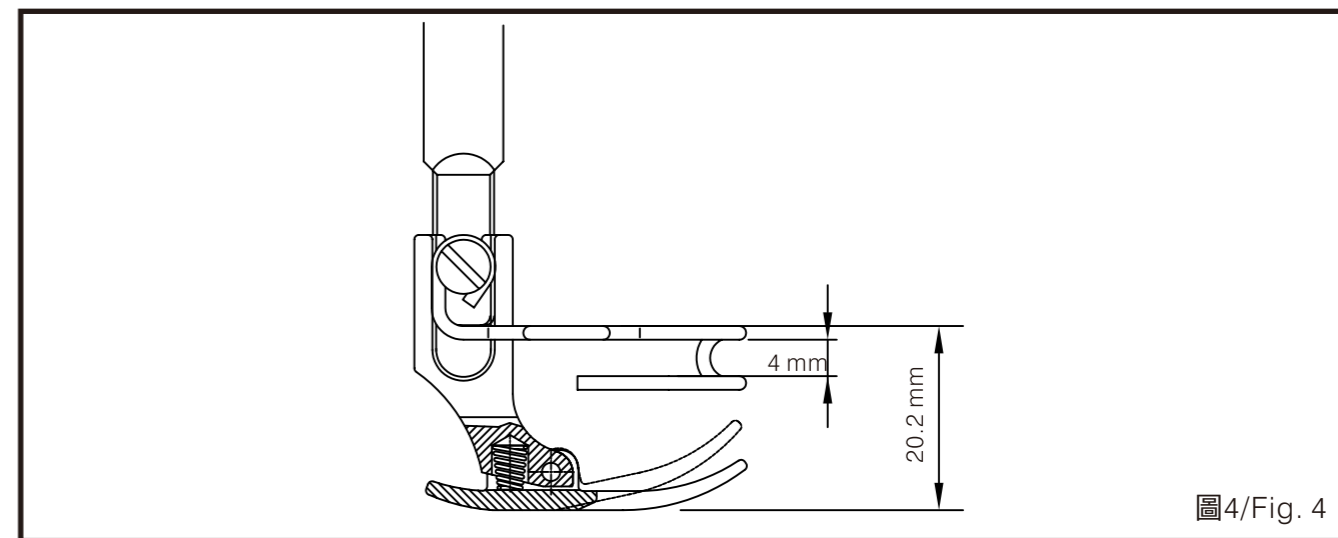


圖4/Fig. 4

### 搬運

### MOVING THE SEWING MACHINE

1. 請由兩人用手托住機殼本體進行搬運。
2. 用手扶住馬達蓋A部，使手輪不能轉動。
3. 搬運時，請穿著安全鞋。(圖5)

1. The machine should be carried by two person as shown in the figure.
2. Hold the motor cover A by hand, so that the pulley will not rotate.
3. Please wear a pair of skidproof shoes while moving the sewing machine.(Fig.5)

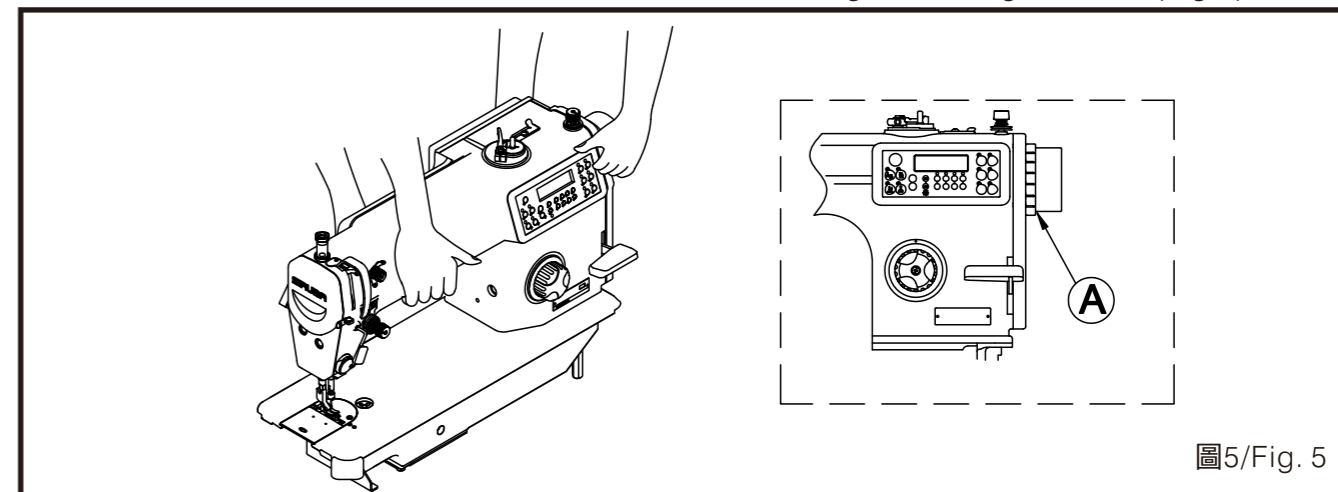


圖5/Fig. 5

### 關於縫紉機的安裝位置

### THE INSTALLATION POSITION OF THE SEWING MACHINE

1. 勿將該縫紉機置於設備附近，如電視機、收音機或無線電話等，否則這些設備可能被縫紉機的電子干擾所影響。(圖6)
2. 應將縫紉機直接插入AC電源插座，如果使用延長線，可能會造成機能失常。

1. Please do not install the sewing machine near the equipments, such as Television, Radio, or Wireless Telephone. Or these equipments will experience electronic interference. (Fig. 6)
2. The wire should insert to the AC power socket directly. If using the extension wire, this might cause malfunction.

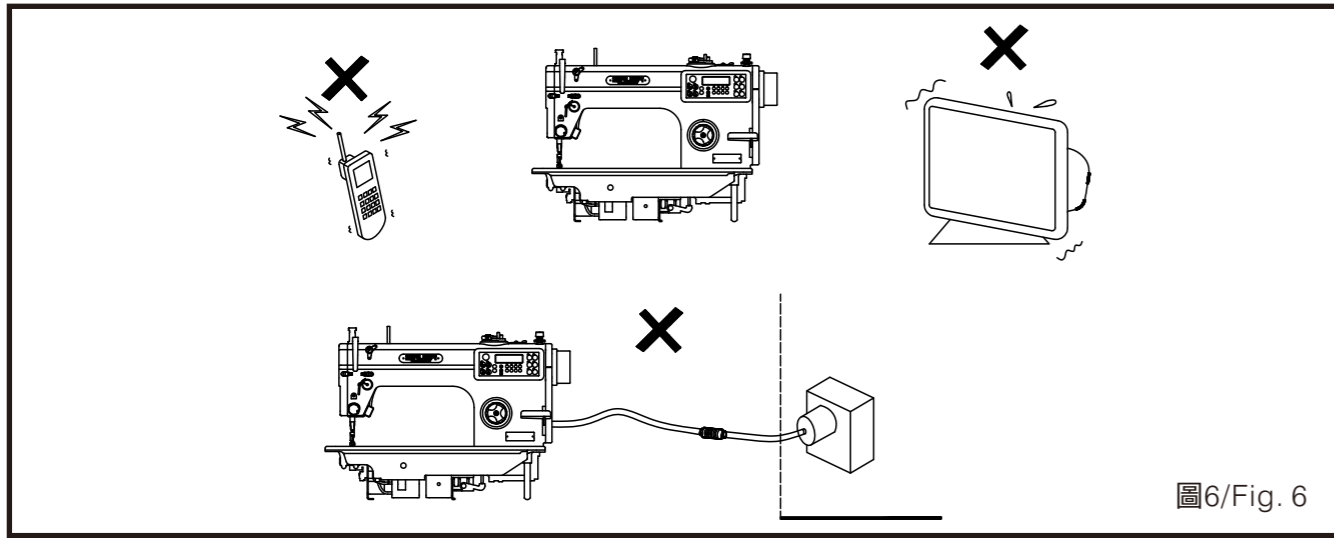


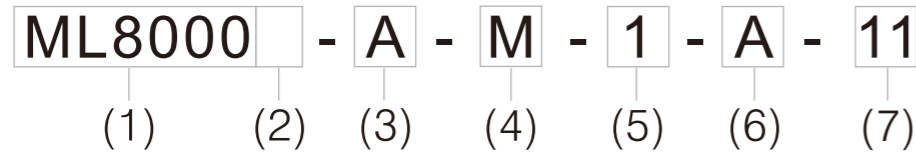
圖6/Fig. 6

規格

SPECIFICATIONS

機種及規格說明

1.型號分類表示:



- 1.機電一體化下送布直接驅動平縫縫紉機
- 2.表示車外觀改良之區分編碼由F然後G以英文字母排列如ML8000F
- 3.A：為A型旋轉式切刀（DURKOPP）
- 4.用途項目

Illustration of Machine Type and Specification

1.Type Classification

1.Type Classification

1. With mechatronics, the lockstitch machine with feeding and directly driving.
2. The distinguishing code to present the appearance improved order in alphabets from F to G, such as ML8000F.
- 3.A: It indicates the rotation trimmer A type (DURKOPP).
- 4.Purpose

編號No	用途Purpose	最高車縫速度 S.P.M Highest Sewing Speed	出廠速度 Preset Value	縫距(mm) Stitch Length
M	用於中厚布料Medium	4500	4000	0~5
H	用於至厚布料Heavy Material	4000	3500	0~7

表1/Table 1

5.梭頭代碼：

- 1：表示高速縫梭頭
- 2：表示2倍梭頭

5.Hook Code：

- 1：High speed hook
- 2：Double hook

6. 無：表示針板送具為四條齒

A：表示針板送具為三條齒

6. None: It indicates that there are 4 rows of teeth on the needle plate.

A: It indicates that there are 3 rows of teeth on the needle plate.

7.操做盒之功能代碼：（切線系統為旋轉式）

7.Function Code of the Operation Panel: (The trimmer system is rotary.)

功能代碼 Function Code	自動切線 Auto Trimmer	快速倒縫 High Speed Reverse Stitch	自動抬押腳 Auto Presser Foot Lift
11	✓	✓	
13	✓	✓	✓

表2/Table 2

ML8000-XX 車縫布料 ML8000-XX Material		中厚布料 Medium Material	厚布料 Heavy Material
		AM1	AH1
供油方式 Fuel Supply		針棒無油式 Needle Bar Oil Free	
1	最高車縫速度 Highest Sewing Speed	4500	4000
2	出廠設定速度 Preset Speed	4000	3500
3	最大縫距 The Longest Stitch Length	5mm	7mm
4	針棒行程 Needle Bar Stroke	32mm	
5	使用針DB X 1 Needle DB X 1	# 11~ # 18	# 19~ # 22
6	押腳壓力 Presser Pressure	3.5~4.5 KGF	5~6 KGF
7	押具提升量 The Height of Presser Foot	手動6mm、膝動10mm、電磁式10mm Hand lift 6mm, Knee lift 10mm, Electromagnetic 10mm	
8	押具 Presser Foot	可調整性押具 Adjustable Presser Foot	
9	旋梭 Hook	高速梭頭 High Speed Hook	
10	送具 Feed Dog	3排齒/4排齒 3 Rows/ 4 Rows	
11	送料具高度 The Height of the Feed Dog	1.0mm	1.2mm

	中厚布料 Medium Material	厚布料 Heavy Material
	AM1	AH1
	供油方式 Fuel Supply	針棒無油式 Needle Bar Oil Free
12	挑線桿行程 Thread Take-up Bar Stroke	61.8±1mm
13	重量 Weight	50 kgf
14	機頭空間尺寸 Machine Size	機頭長 286mm X 高 141mm Machine Head Length 285mm X Height 104mm
15	桌板尺寸 Size of Table	517.5mm X 178mm
16	加油方式 Fuel Supply	完全自動加油 Automatically Fueling
17	潤滑油 Lubrication	提供之專用油 Provision of Special Oil
18	機頭驅動 Machine Drive	直接驅動裝置 Directly Drive Device
19	馬達 Motor	AC伺服馬達4極500W AC Servomotor 4-pole 500W
20	使用電源 Power Supply	單相交流220V Single Phase Alternating Current 200V
21	電磁線圈驅動電源 Electromagnetic Coil Drive Power	DC-24V

表3/Table 3

各部件名稱

NAMES OF MAJOR PARTS

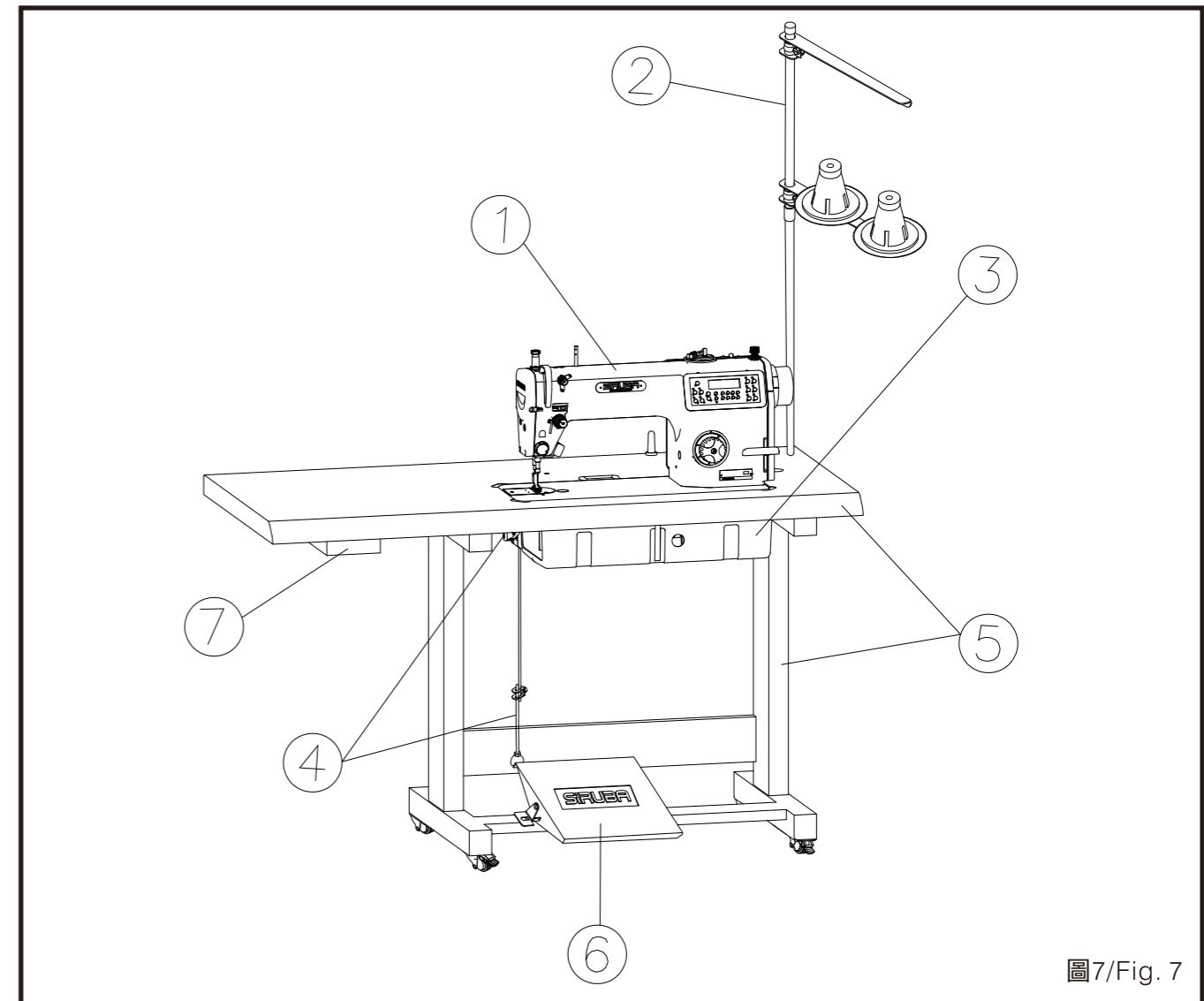


圖7/Fig. 7

完整提供(圖7)

Complete Offer(Fig.7)

(1) 縫紉機體

(1) Sewing machine

配件

Accessories

(2) 線架

(2) Wireframe

(3) 油盤

(3) Oil plate

(4) 踏板連桿及控速器

(4) Pedal Rod and Speed controller

工具

Tools

橡膠墊

Cushions

電源線

Wire

選配件

Options

(5) 機架帶桌板

(5) Frame with the table

(6) 踏板

(6) Pedal

(7) 線盒

(7) thread box





注意CAUTION



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



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



縫紉機重50公斤, 安裝工作必須由兩人以上來完成。  
The sewing machine weighs 50kg. The installation should be carried out by two or more people.



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



縫紉機頭倒下豎起時, 請用雙手進行操作。單手操作時因縫紉機的重量萬一滑落易導致受傷。  
Use both hands to hold the machine head when tilting it back or returning it to its original position. If only using one hand, the weight of the machine head may be too heavy to hold, and may cause human physical injuries.

《安裝方法》

• 桌板的厚度應在40mm以上, 且能夠承受縫紉機重量與震動。

• 請按桌板圖所示位置加工

1. 機架安裝

參照圖示依序安裝各部件(圖8)

- ① 腳架
- ② 線盒及油盤
- ③ 腳踏板
- ④ 控速器及連桿
- ⑤ 線架
- ⑥ 緩衝墊
- ⑦ 支撐桿

《INSTALLATION》

• The table thickness should be 40mm and should be strong enough to hold the machine weight and vibration .

• Process as indicated in the "Table cut- out".

1. Frame Installation

Install each parts in order by referring the diagram. (Fig.8)

- ① Stand
- ② Thread box & oil plate
- ③ Pedal
- ④ Speed controller and the rod
- ⑤ Thread stand
- ⑥ Cushion
- ⑦ Support

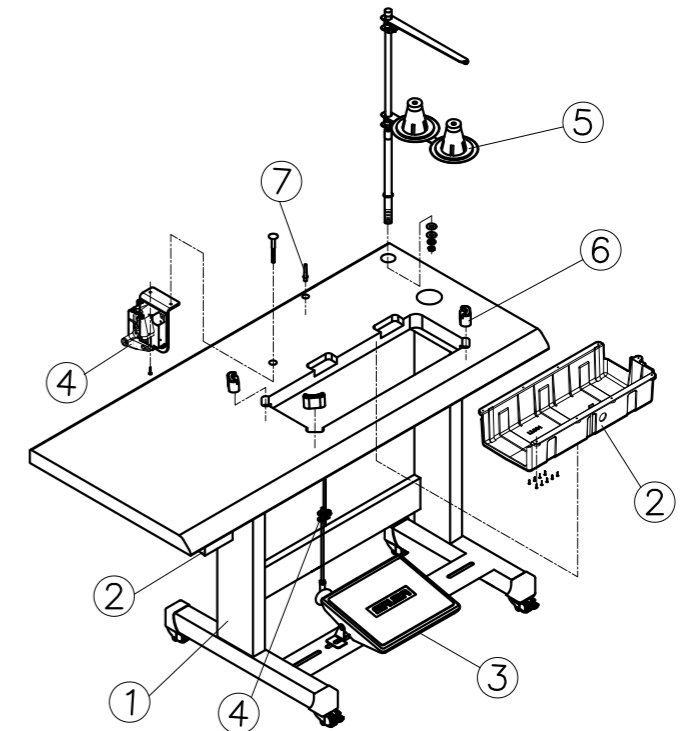


圖8/ Fig. 8

2. 機頭安裝(圖9)

先將機頭鉸鏈①插入機頭②。  
抬起機頭使鉸鏈對準鉸鏈墊片③, 將放入桌板中。

2. Installation Machine Head (Fig.9)

Put the hinge ① into the machine head ②.  
Lift the machine head and let the hinge to the cushions ③ and then put into the table.

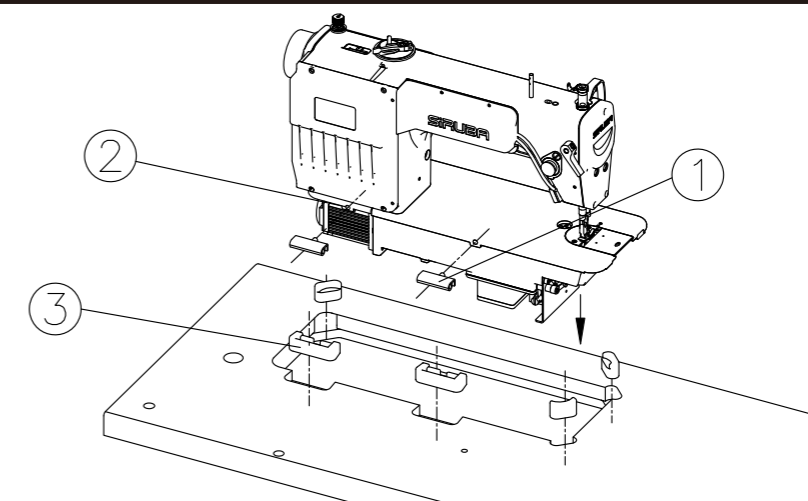


圖9/ Fig. 9

3. 潤滑(圖10)

翻倒縫紉機頭, 鬆開螺絲①, 倒入液態油②至齒輪箱內至油鏡上刻度③。鎖緊螺絲①, 取下膠塞④, 加入#10 高速油⑥至油箱內至油鏡上刻度MAX ⑤, 放回膠塞④, 翻正縫紉機頭。

3. Lubrication (Fig.10)

Overturn the sewing machine head. Loose the screw ①. Fill in the liquid oil ② to the reticle ③ on the oil level gauge ③. Tighten the screw ①. Take off the rubber plug ④. Fill in #10 the high speed oil ⑥ to the reticle MAX ⑤ on the oil level gauge in the tank. Put back the rubber plug ④. Right the machine head.

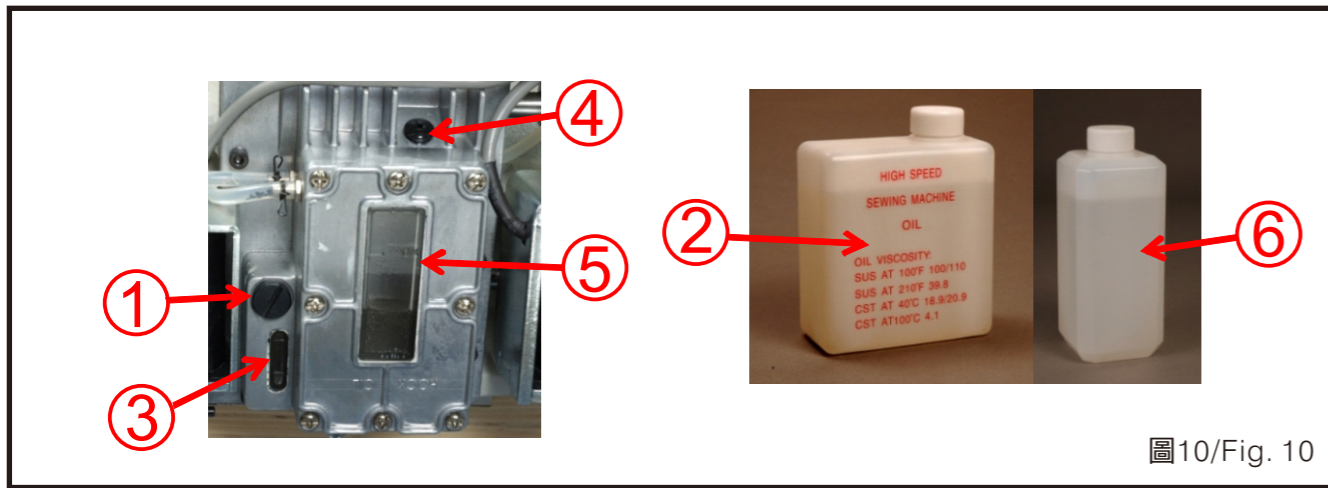


圖10/Fig. 10

4. 機頭安裝及電源(圖11)

插上電源線③及控速器訊號線②。開啟電源①，輕前踩踏板，確認手輪迴轉方向。後踩踏板，確認相關動作是否完成。完成後會自動停針，確認手輪白色記號⑤和後蓋記號④對齊。

4. Install the machine and the power (Fig. 11)

Plug in the power wire ③ and the speed controller signal wire ②. Turn on the power ①. Press the pedal softly and confirm the wheel rotation direction. Press the pedal backward and ensure if the related motion is finished. It will automatically stop after the completion of the needle, and ensure the white mark ⑤ on the wheel align to the back cover mark ④.

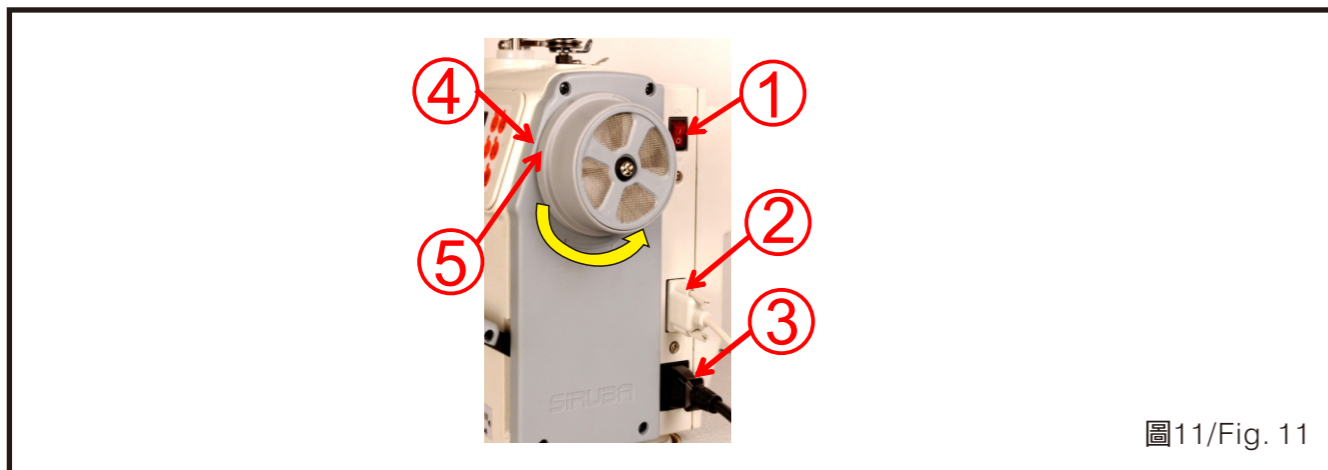


圖11/Fig. 11

5. 抬壓腳安裝(圖12)

- (1) 將膝控扳手①、膝控套管②以鏈接器③結合固鎖。
- (2) 將膝控套管穿過油盤插入抬壓腳軸。
- (3) 轉動膝控套管使槽能和抬壓腳軸上的銷結合。
- (4) 調整螺絲，使膝控膠墊高度和角度位於操作者右大腿前緣的右側5公分。

5. Install the presser foot lifter (Fig. 12)

- (1) Joint and fix the lock with knee wrench ① and knee sleeve ② by the linker ③.
- (2) The knee sleeve passes through the oil plate and into the presser foot shaft.
- (3) Turn the knee sleeve to make the slot combine the pin of the presser foot shaft.
- (4) Adjust the screw and make the height and the angle of the knee pads at the front right 5cm of the operator.

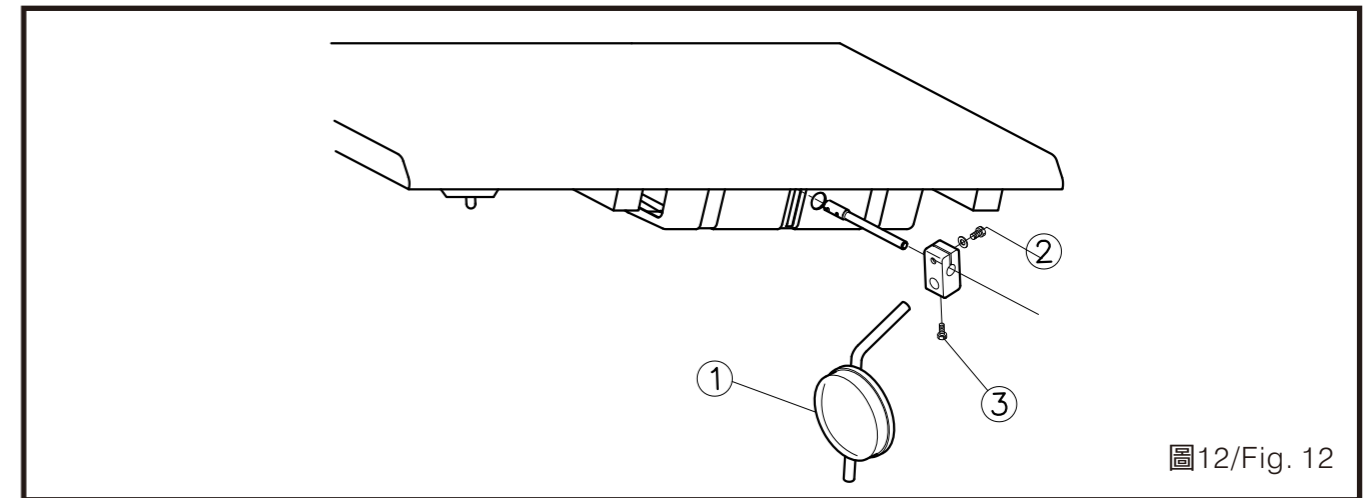


圖12/Fig. 12

安裝完功能檢視

CHECK THE FUNCTION AFTER SET UP



注意CAUTION



運轉中，不要碰觸任何運動件或將物體靠在運動件上，因為此易導致人員受傷或損壞縫紉機。  
Do not touch any of the moving parts or press any objects against the machine while sewing, as this may result in personal injury or damage to the machine.

1. 打開電源  
按ON打開電源開關① (圖13)

1. Turning on the power  
Press the ON power switch ①.(Fig. 13)

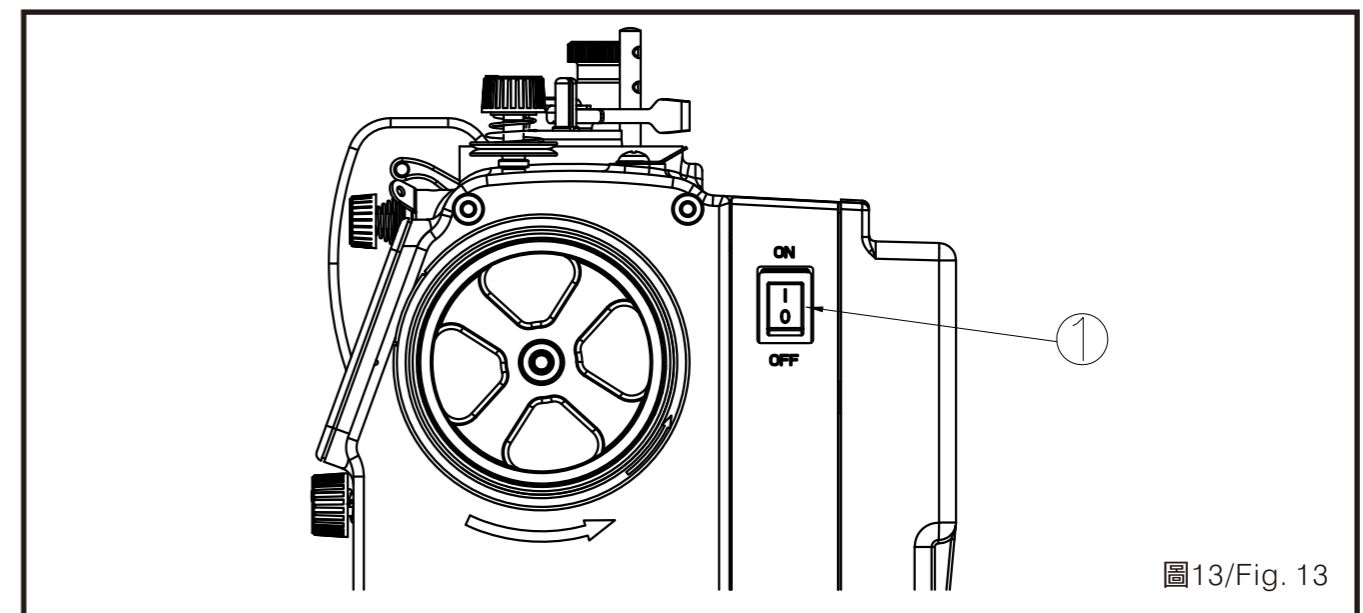


圖13/Fig. 13

## 2. 操作測試(圖14)

- (1) 將腳踏板③前踩到B位置時，縫紉機是低速縫紉狀態。
- (2) 更進一步將腳踏板③前踩到C位置時，縫紉機是高速縫紉狀態。
- (3) 當腳踏板③返回到空擋A位置時，機針降至針板下。(當已設定機針在下定位置時。)
- (4) 如果將腳踏板③後踩到D位置時，機針升至針板上，定位並進行剪線動作。

## 2. Operation test (Fig. 14)

- (1) The machine sews at low speed when the pedal ③ is pressed to position B.
- (2) Then it sews at high speed when the pedal ③ is pressed to position C.
- (3) When the pedal ③ returns to the neutral position A, the needle lowers under the needle plate. (The needle has been set to lower dead point)
- (4) If the pedal ③ is pressed to position D, the needle rises above the needle plate and stop, and trimming is carried out.

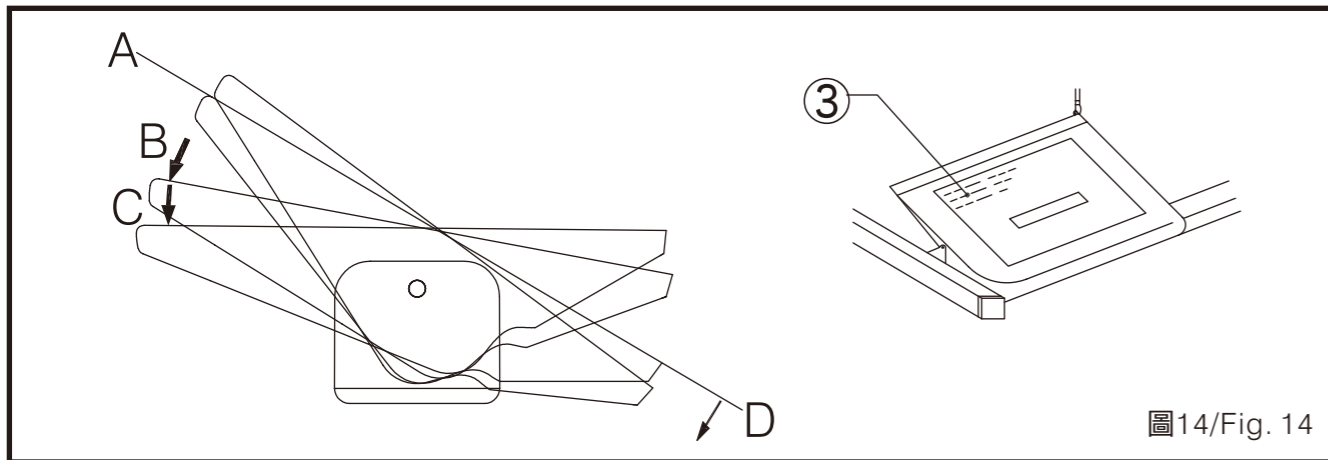


圖14/Fig. 14

## 開始縫紉

## START SEWING

### 《操作環境照明》

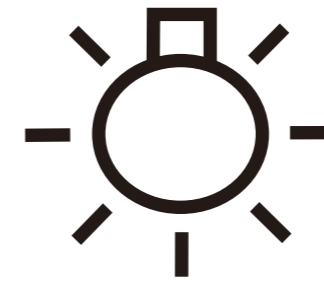
提供一個警示標誌，告知使用者：工業用縫紉品或是縫紉系統必須在該縫紉區域未啟動照明裝置前，禁止插電或通電；照明

裝置的最大輸入功率應該能夠輕易辨識，當照明裝置被重置或移動的時候，警示標誌也應設置在照明裝置插座上或是附近。警示標誌如圖15所示

### 《Lightening of the operation environment》

Provide a warning that an industrial sewing unit or sewing system must always be unplugged from the local lighting of the sewing area before relamping, the marking of maximum rated input of a lamp

shall be easily discernible while the lamp is being replaced indicated on or near the lamp socket as shown on Fig. 15.



最大流明…… 510 流明

Maximum…… 510 Lum

最小流明…… 430 流明

Minimum…… 430 Lum

圖15/Fig. 15

### 《操作者條件》

1. 熟讀並了解使用說明書內容。
2. 認識機器各部功能及注意事項。
3. 了解各警告標籤之意義。
4. 了解熟悉機器之操作方式。
5. 操作者須保持精神狀態良好。
6. 操作者須穿著合宜適當之工作服。
7. 視需要培養操作者使用機器之熟練度。

### 《Conditions of all operators》

1. Read and understand well the content of this instruction book.
2. Know the functions of major parts and understand the notices.
3. Truly realize the meanings of all warning tags.
4. Realize and be familiar with how to operate this machine.
5. Operators have to keep well mental status.
6. Operators shall wear appropriate and proper working suits.
7. Develop the familiarity of how to operate the machine if needed.

## 傾倒與扶正縫紉機

## TILT DOWN AND RETURN THE MACHINE HEAD

### 1. 往後傾斜縫紉機

用腳踩住B部份，不使台板移動，然後用雙手推動機殼本體使縫紉機往後傾。(圖16)

### 1. Tilt back the machine head

Step on the section B and hold it so that the table will not move, and then push it with both hands to tilt the machine head. (Fig. 16)

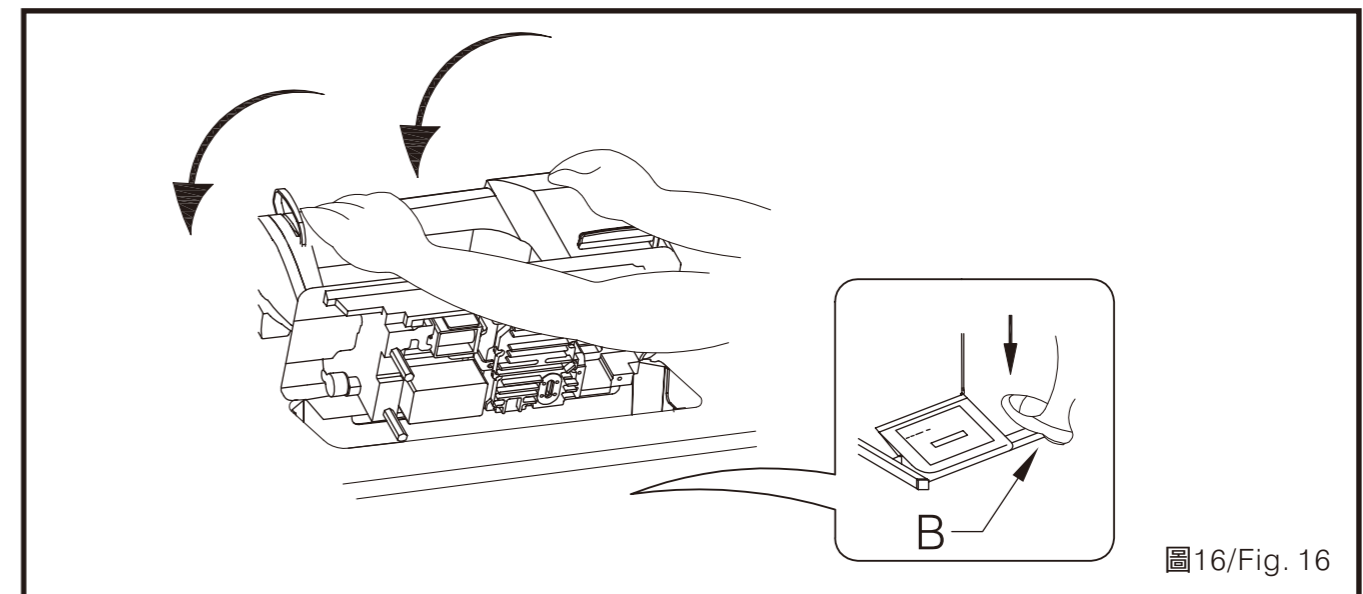


圖16/Fig. 16

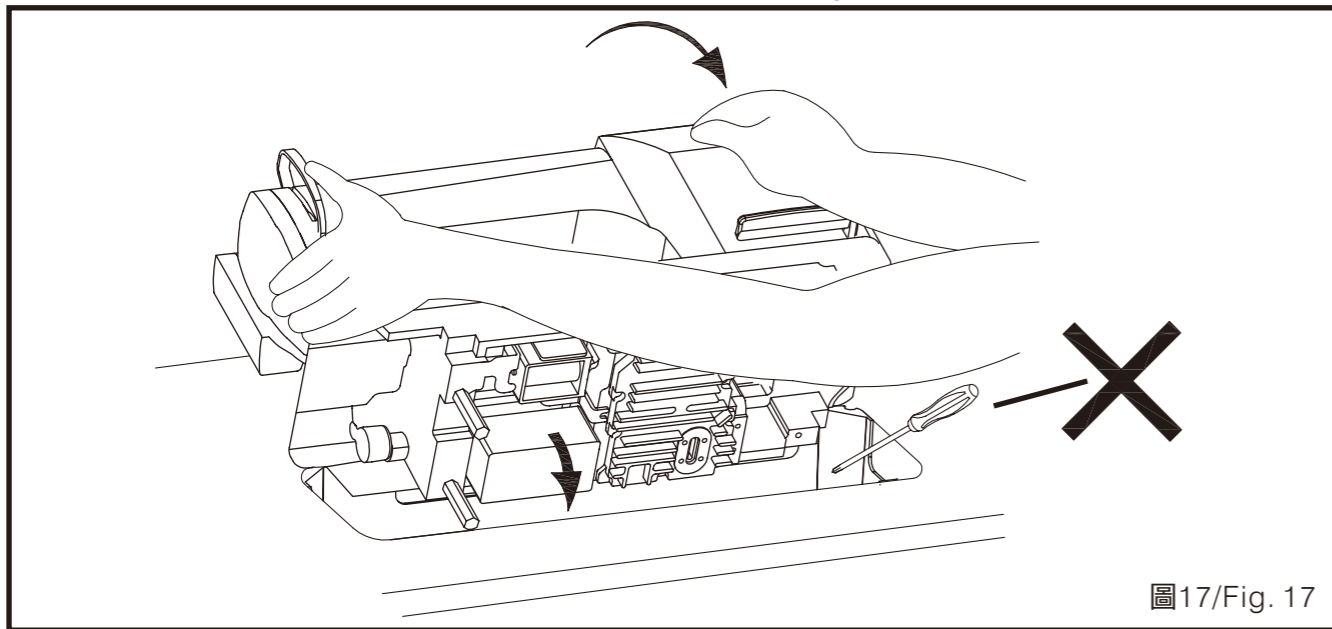


2. 將縫紉機返回至直立的狀態(圖17)

- (1) 將桌板開孔附近的所有工具物件清除。
- (2) 以左手扶住面板,用右手輕輕地將縫紉機扳回至直立狀態。

2. Returning the machine head to the upright position (Fig. 17)

- (1) Clear away any tools, etc. which may be near the table holes.
- (2) While holding the face plate with your left hand, gently return the machine head to the upright position with your right hand.



操作

OPERATION

1. 說明

1. Illustration

<p>正確的針跡 Good even stitches</p> <p>針線 Upper thread 梭線 Lower thread</p>	
<p>針線張力過小或梭線張力過大。 Upper thread tension too weak or lower thread tension too strong</p>	<p>增大針線張力。 Increase the upper thread tension.</p> <p>減小梭線張力。 Decrease the lower thread tension.</p>
<p>針線張力過大或梭線張力過小。 Upper thread tension too strong or lower thread tension too weak</p>	<p>減小針線張力。 Decrease the upper thread tension.</p> <p>增大梭線張力。 Increase the lower thread tension.</p>

圖表1/Chart1

2. 針線安裝(圖18)

依穿線圖將線安裝針線, 初始線頭③, 要先預留50mm並避免被押具④ 押到。

2. Illustration of installing the needlework (Fig. 18)

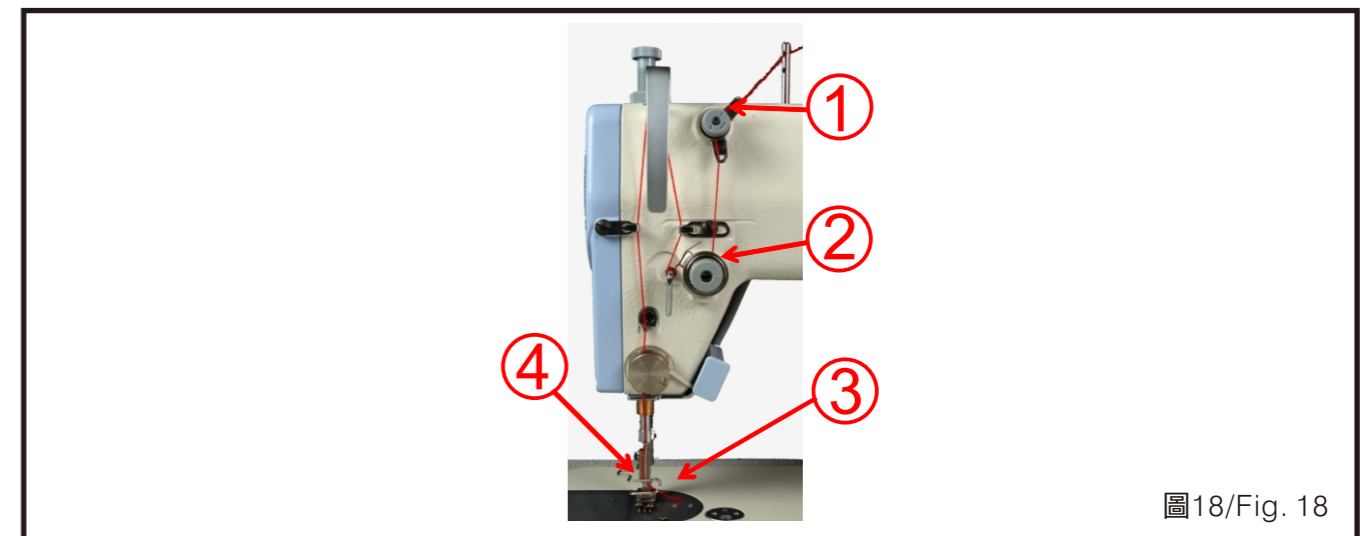
According to the diagram to install the needlework. The initial thread③, first set aside 50mm for avoiding being pressed by the presser④.

3. 張力調整說明(圖18)

- (1) 初始控線鈕①: 調整針線基本張力, 以控制起始線頭③的長短, 在15mm~25mm為佳。
- (2) 主控線鈕②: 調整鬆緊使縫跡達到理想的效果。
- (3) 線張力在切線時, 主夾線器②會自動鬆開。

3. Tension adjustment (Fig. 18)

- (1) The initial clamp①: Adjust the basic needlework and control the length of the initial thread③. It is better to be between 15mm~25mm.
- (2) The thread clamp②: Adjust the tension for optimizing the stitch.
- (3) When trimming, the clamp② would automatically release.



4. 梭芯捲線(圖19)

- (1) 將梭子①放置梭子捲線器②上。
- (2) 以箭頭方向將線在梭子上①繞幾圈。
- (3) 將押柄③推向梭子①。
- (4) 踩踏板開始捲線。
- (5) 捲線完成, 押柄會自動彈開。
- (6) 取下梭子①, 並以切線刀④將線切斷。

4. Bobbin Winding (Fig. 19)

- (1) Place the shuttle ① to shuttle reel ②.
- (2) Let the thread around the shuttle ① few times according to the arrow direction.
- (3) Push the charge handle ③ to the shuttle ①.
- (4) The pedal begins to reel.
- (5) After finishing the reel, the charge handle would automatically bounce.
- (6) Take down the shuttle ① and cut the thread with the trimmer ④.

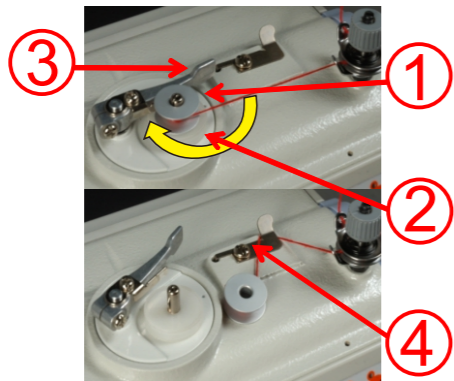


圖19/Fig. 19

### 5. 梭芯線量調整(圖20)

- (1)鬆開螺絲⑤ 改變⑥ 的角度可以調整梭芯線量多 + 少 -。
- (2)良好的捲線量是梭子①容量的80%

### 5. The adjustment of bobbin (Fig.20)

- (1)Loosen the screw ⑤ to change the angle of ⑥ can adjust the thread amount of the bobbin increase + or decrease - .
- (2)A good winding volume is 80% the capacity of reel ①.

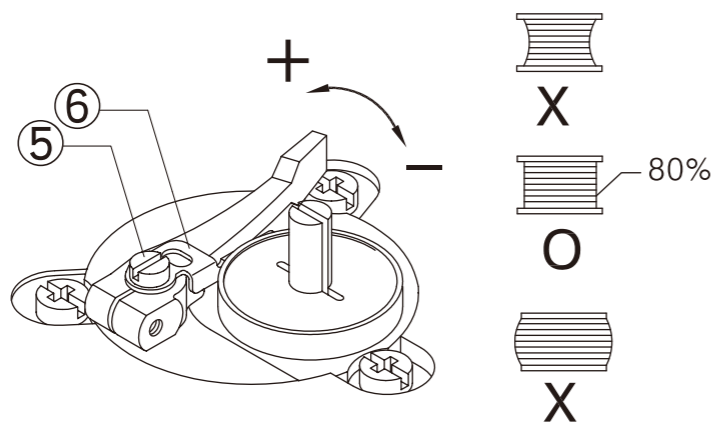


圖20/Fig. 20

### 6. 梭芯安裝(圖21)

- (1)轉動手輪使機針位於針板上方。
- (2)將梭碗的閘銷④向上拉起，取下梭碗⑤。
- (3)取出空梭子，裝上滿線的梭子。
- (4)拉出梭線5cm，梭子應像箭頭方向旋轉。
- (5)梭線繞過槽①，經梭皮②下方，由孔③出線。
- (6)將梭碗的閘銷④向上拉起，放入梭碗⑤。

### 6. Install the Bobbin(Fig.21)

- (1)Turn the hand wheel and let the needle be on the needle plate.
- (2)Pull up the gate④ in the bobbin case holder and take off the bobbin case holder⑤.
- (3)Take off the empty bobbin and put on the bobbin with full thread.
- (4)Pull out the shuttle line 5 cm, and the shuttle should rotate like the arrow direction in the diagram.
- (5)The shuttle line detour slot① and across under the shuttle skin ② and out from the hole③.
- (6)Pull up the gate ④ in the shuttle base holder and put in the shuttle base holder ⑤.

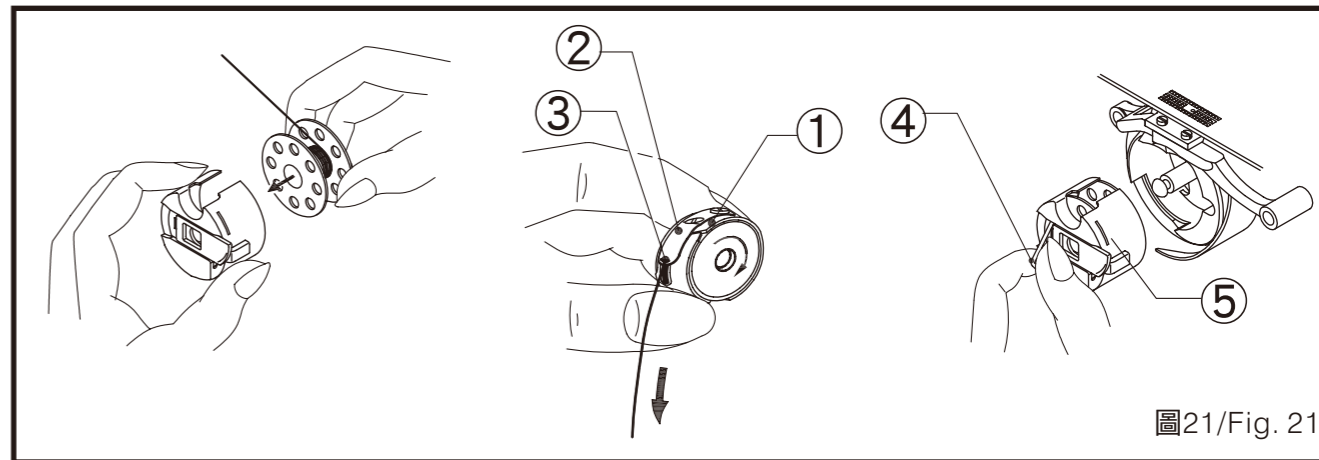


圖21/Fig. 21

### 7. 梭芯線張力調整(圖22)

- (1)線張力的理想值為 25g，其中12.5g由剎車彈簧②提供，12.5g由梭皮③提供。
- (2)調整梭皮螺絲①，改變彈力使梭碗依靠自身的重量緩緩向下。
- (3)剎車彈簧是在使自動剪線後阻止梭子繼續轉動。

### 7.Adjustment of the shuttle tension (Fig.22)

- (1) The ideal value of the tension is 25g, which 12.5g supply from the break spring ② and 12.5g supply from the bobbin skin ③.
- (2) Adjust the bobbin skin screw①, change the elasticity and let bobbin case holder slowly down by its weight.
- (3)The break spring is for stopping the bobbin rotating after the automatic trimmer.

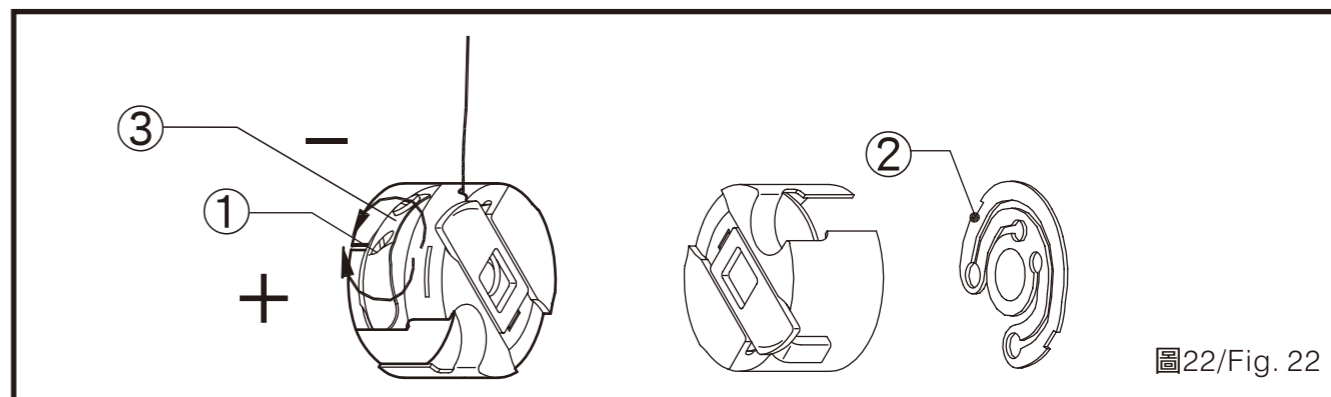


圖22/Fig. 22

### 8. 機針更新(圖23)

- (1)轉動手輪，使針桿至上死點。
- (2)鬆開螺絲①，取下機針。將新機針插到針桿的針孔孔底。
- (3)確認針喉位③於右側，固鎖螺絲①。
- (4)在調換別種規格針時，旋梭和機針之距離要從新調整。

### 8.Needle change(Fig.23)

- (1)Turn the hand wheel, have the needle bar to the upper dead point.
- (2) Loosen the screw ①; take off the needle. Have the new needle insert into the end hole of the needle bar.
- (3)Ensure the needle to be at the right of the position③. Then, tighten the screw ①.
- (4)When substituting another new needle, the distance between the hook and the needle needs to be adjusted.



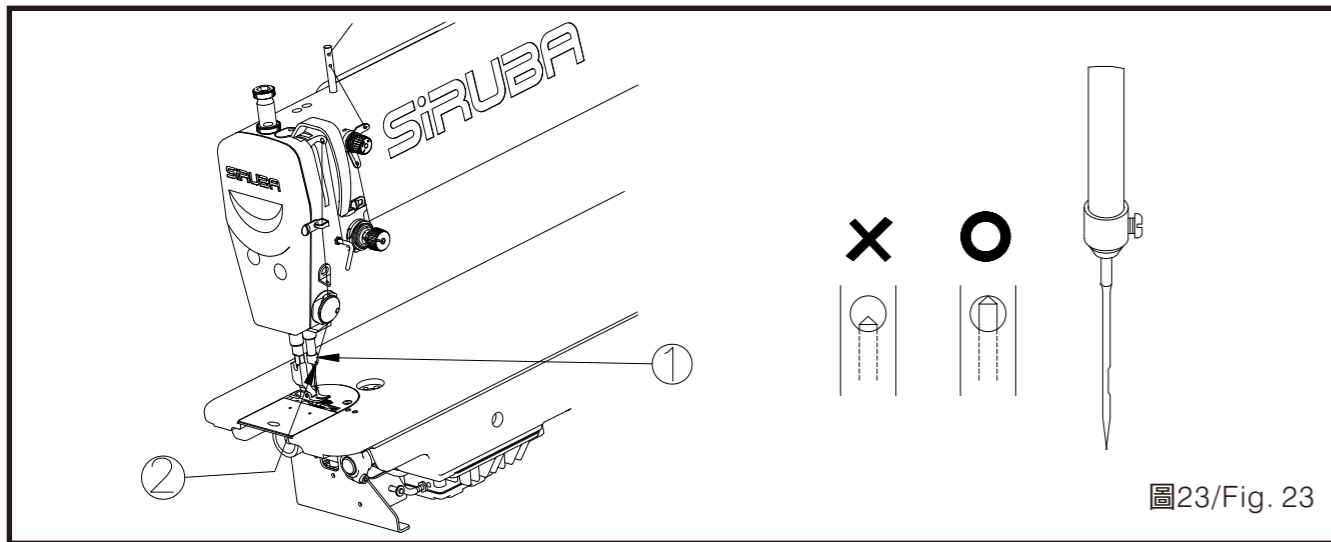


圖23/Fig. 23

9. 針線放線量調節器調整(圖24)

- (1) 為了確保最佳的縫紉性能。
- (2) 鬆開螺絲②，調整針線量調節器①之長短，使線環③在最小張力且沒有多餘的線量平順的滑出旋梭。

9. The thread regular adjustment (Fig.24)

- (1) To ensure the best sewing function.
- (2) Loosen the screw ② and adjust the length of the thread regular ①. Let the thread ring ③ can slide out the hook smoothly at the least tension without spare thread.

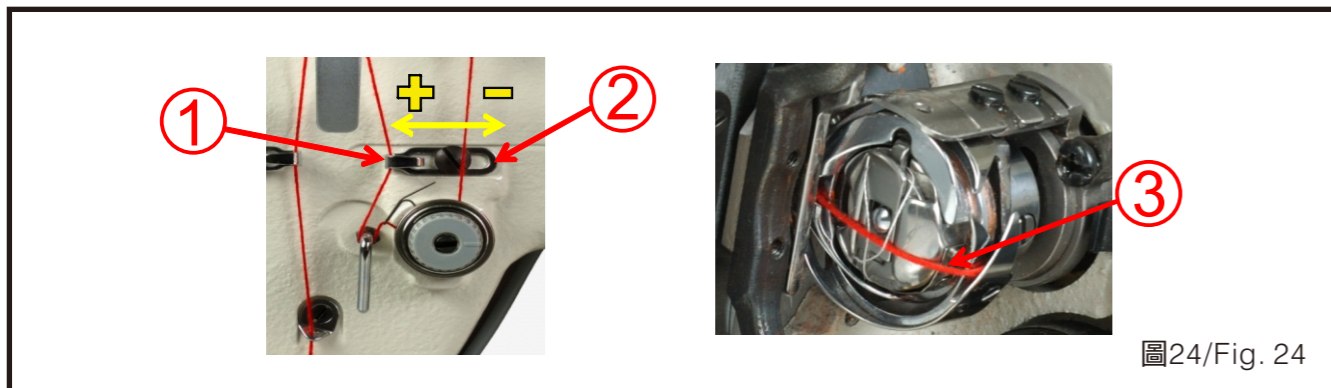


圖24/Fig. 24

10. 縫距調整及手動倒縫(圖25)

- (1) 轉動手輪①，就能同時改變正縫和倒縫的縫距。
- (2) 按下倒縫扳手②，就可以使機器一直保持倒縫。

10. Adjustment the length and the manual back stitching(Fig.25)

- (1) Turn the hand wheel①, it can adjust the length of the stitching and back stitching at the same time.
- (2) Press down the wrench of backstitching ②, and it can keep the machine doing the backstitching.

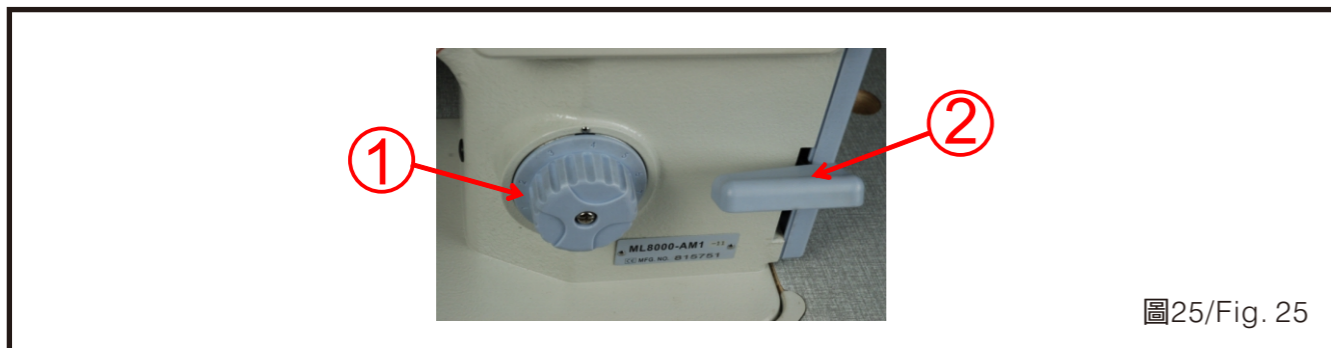


圖25/Fig. 25

11. 抬壓腳壓力調整(圖26)

- (1) 應盡可能減小押具壓力，但必須有足夠的壓力使面料不至滑動
- (2) 放鬆螺母①。
- (3) 轉動壓力調整螺栓②，調整所需押具壓力。
- (4) 鎖緊螺母①。

11. Adjust the pressure of the presser foot lifter(Fig.26)

- (1) Minimize the pressure of the presser foot as possible, but it must have enough pressure to keep the material steady.
- (2) Loosen the screw ①.
- (3) Turn the pressure to adjust the screw and adjust the pressure which the ② presser foot needs.
- (4) Tighten the nut ①.

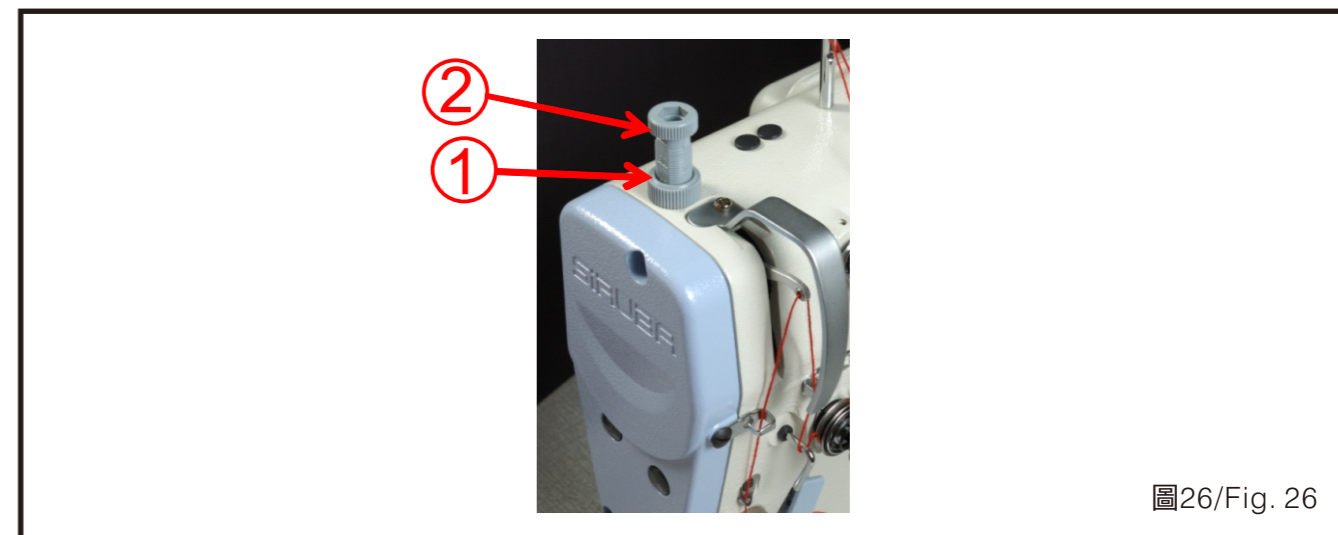


圖26/Fig. 26

12. 壓腳抬起(圖27)

- (1) 把壓腳扳手①扳到前側-可將壓腳鎖緊在抬上位置
- (2) 放下壓腳扳手①，取消鎖緊
- (3) 利用膝控抬壓腳或電動抬壓腳抬起壓腳，則壓腳扳手可恢復初始位置。

12. Lift the presser foot(Fig.27)

- (1) Push the wrench ① of the presser foot to the front side. It can lock the presser foot at the position on the table.
- (2) Pull back the wrench ① and cancel the lock.
- (3) The wrench of the presser foot can be back to the initial position by lifting the presser foot through the knee lift or the electronic lift.

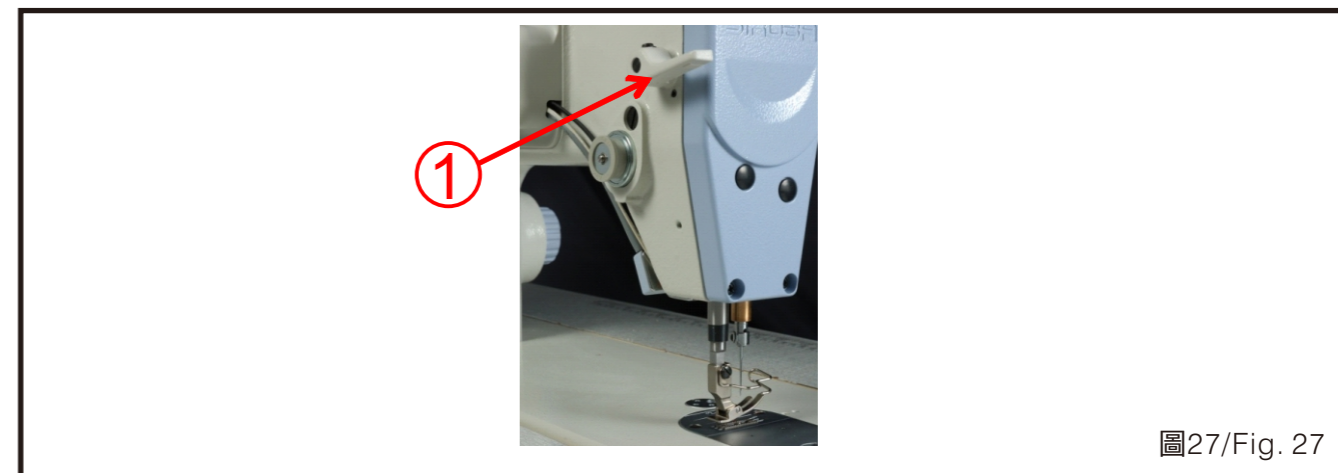


圖27/Fig. 27



旋梭供油量調整  
(M1/H1/L2/M2規格)

ADJUST THE ROTARY HOOK  
LUBRICATION AMOUNT  
(FOR M1/H1/L2/M2 TYPES)

 注意CAUTION



在檢查旋梭供油量時，手指和油量測試紙不能碰到旋梭和送布機構等運動零件。以免導致人員受傷。

Be careful and do not touch any moving part such as the rotary hook or the feed mechanism with your fingers or the lubrication amount check sheet when checking the supplied oil amount of the rotary hook. Otherwise, injury may happen.

如果換了旋梭或要變更縫紉速度時，請依以下步驟調整旋梭的供油量。

1. 供油量的確認(圖28)

- (1) 拆去從挑線桿到機針上的線。
- (2) 將押具抬起。
- (3) 以縫紉機實際縫紉的轉速進行約1分鐘的空轉。
- (4) 將油量測試紙①置於旋梭②的下面，以縫紉機實際進行縫紉的轉速使縫紉機運轉8秒鐘。
- (5) 確認飛濺到試紙上的油量。

注意：

如果供油量的檢查結果不符左圖所示的狀態(飛濺到紙上的油跡呈完整的帶狀或一點也沒有飛濺出來)，則可向右轉動油量調整螺絲③將其完全鎖入，然後再向左轉動旋出2圈半，在此狀態下再進行下述的調整作業。

Please follow the following steps to adjust the oil lubrication amount after changing the rotary hook or if intending to alter the sewing speed.

1. Check the lubrication amount (Fig.28)

- (1) Remove the thread from the thread take-up to the needle.
- (2) Lift the presser foot.
- (3) Process idle running about 1 minute at the regular sewing speed.
- (4) Place the lubrication amount check sheet ① underneath the rotary hook ②. Then operate the sewing machine at the normal sewing speed for about 8 seconds.
- (5) Check the splashing oil amount on the sheet.

NOTE:

If the checking result does not match the correct amount shown in the illustration at left (the oil appears belt shape or none at all), turn the adjusting screw ③ clockwise to fully tighten it, and then turn it back counter-clockwise 2 1/2 turns. After this, process the following adjustments in this state.

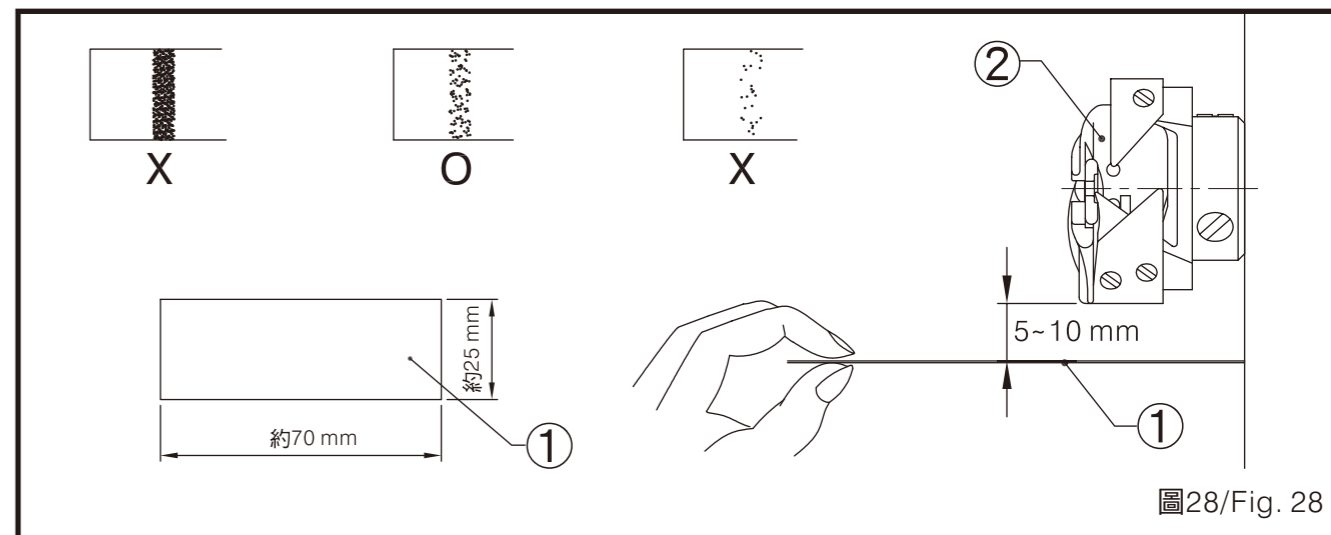


圖28/ Fig. 28

2. 供油量的調整(圖29)

- (1) 後傾縫紉機頭。
- (2) 轉動油量調整螺絲③調整油量。
  - a. 向右轉動油量調整螺絲③，供油量增加。
  - b. 向左轉動油量調整螺絲③，供油量減少。
- (3) 依前項-供油量的確認，來檢查供油量。
- (4) 在進行約2小時的縫紉後，請再次檢查供油量。

注意：

請反覆進行油量調整螺絲③的調整及供油量的確認，直到獲得適當的供油量為止。

2. Adjust the lubrication amount (Fig. 29)

- (1) Tilt backward the machine head.
- (2) Turn the adjusting screw ③ to adjust the lubrication amount.
  - a. Turn the adjusting screw ③ clockwise to increase the lubrication amount.
  - b. Turn the adjusting screw ③ counterclockwise to decrease the lubrication amount.
- (3) Check the lubrication amount again according to the procedure given in "Checking the lubrication amount" previously.
- (4) Check the lubrication amount again after the sewing machine has been used for approximately two hours.

NOTE:

Turn the adjusting screw ③ and check the lubrication amount repeatedly until the lubrication amount is correct.

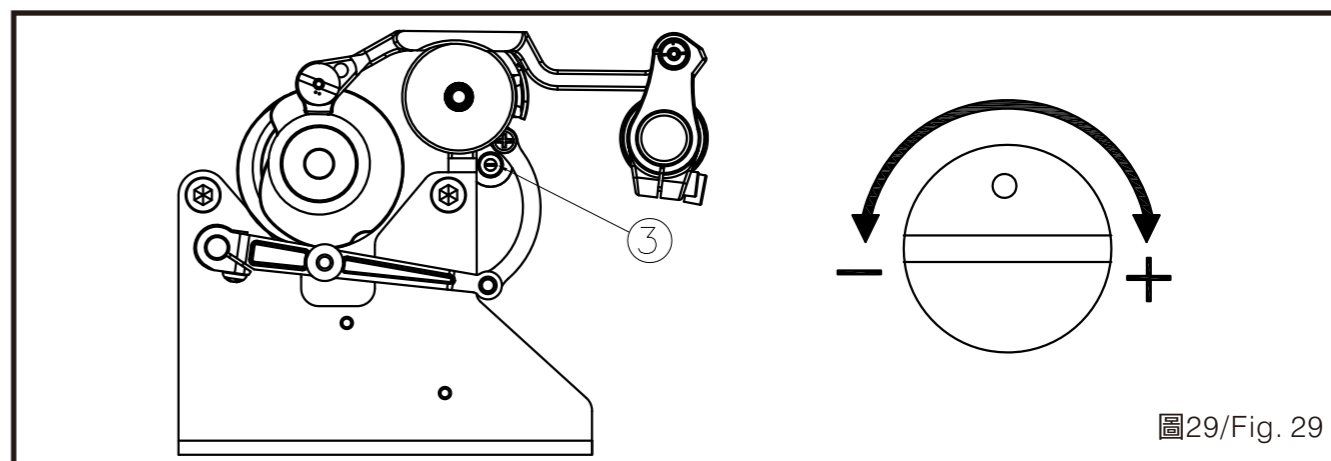


圖29/ Fig. 29

選針盒按鍵說明：

Description of the Operation Box：

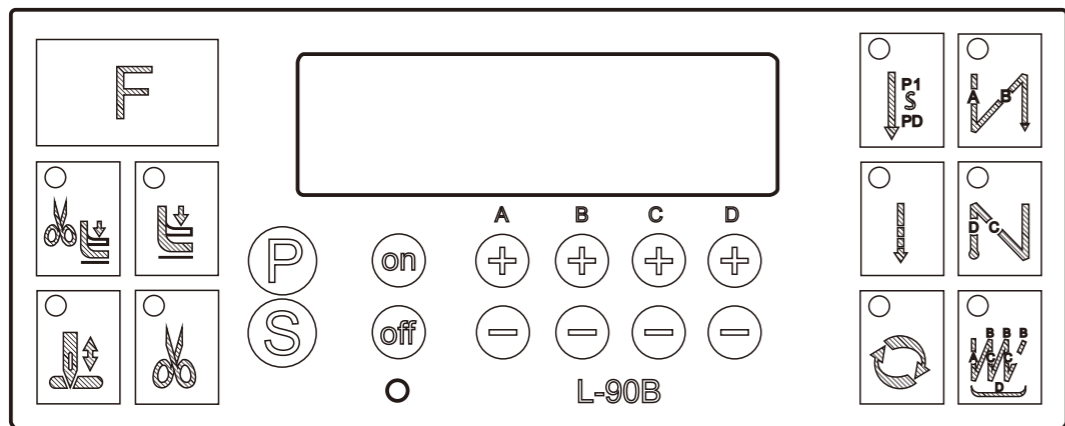


圖30/Fig. 30

功能名稱 Function	按鍵圖示 Key	對應車縫動作 Corresponding Action
起始/終止回縫功能 Start / End Backstitch		執行起始回縫A,B段車縫一次 Start backstitching section A, B once.
		執行終止回縫C,D段車縫一次 End backstitching section C, D once.
連續回縫功能 Continuous Backstitch		執行連續回縫A段一次,B,C段D次 Continuously backstitch section A once, and section B, C, for D times.
定寸縫功能 Fixed Sewing		進入定寸縫功能,分為P1~PF共15段,可設定每段針數 Enter the function of fixed sewing, divide into 15 sections from P1 to PF. The numbers of stitches in each section can be set.
自由縫 Free Sewing		1. 踏板中立時停止車縫 The pedal stands flat to stop sewing. 2. 踏板前踩時進行車縫 Step forward the pedal to do sewing. 3. 踏板後踩時進行切線、掃線、抬押腳等動作 Step backwards to do the action, such as, the trimmer, the thread wiper, the presser foot...ect.
自動模式 Auto Mode		前踩踏板完成回縫之設定針數； The setting numbers of stitches when stepping forwards. 定寸縫功能中則完成該段之針數 The completion numbers of stitches in the function of fixed sewing.

功能名稱 Function	按鍵圖示 Key	對應車縫動作 Corresponding Action
切線功能 Trimmer		選擇切線功能 Select Trimmer
押腳功能 Presser Foot		選擇車縫停止時，押腳是否動作 The action of the presser foot, when selecting the stop sewing.
切線押腳功能 Trimmer Presser Foot		選擇切線之後，押腳應是否動作 The action of presser foot, when selecting the trimmer.
補針功能 Complement Stitch		依照參數設定在車縫結束之後補半針 According to the parameter setting, complement half stitch after finishing sewing.
特殊功能選擇 Special Function		進入特殊功能選擇區後，選擇特殊功能 Enter the selection of special function, choose the special function.
參數設定 Parameter Setting		長按此鍵進入參數區； Keep pressing the key to enter. 設定參數後按此鍵由參數設定跳回參數選擇 After selecting parameter, press the key to back to the parameter selection.
儲存參數設定並離開 Save the parameter setting and escape		長按此鍵進入特殊功能選擇 Keep pressing the key to enter. 設定參數後，按此鍵跳離參數選擇並儲存設定 After setting the parameter, press the key to escape and save the setting.
開啟LED Turn on LED		開啟照明用 LED Turn on LED.
關閉LED Turn off LED		關閉照明用LED Turn off LED.
參數功能別/參數內容遞增 Parameter Function/ Parameter Content Increase		增加A,B,C,D針數0~15針(0~F)； Increase the numbers of the stitches A,B,C,D(0~F), from 0 stitch to 15. 參數功能別項次選擇遞增 / 參數內容調整 Parameter Function Section Increase / Parameter Content Adjustment
參數功能別/參數內容遞減 Parameter Function/ Parameter Content Decrease		減少A,B,C,D針數15~0針(F~0)； Decrease the numbers of the stitches A,B,C,D(0~F), from 0 stitch to 15. 參數功能別項次選擇遞減 / 參數內容調整 Parameter Function Section Decrease / Parameter Content Adjustment

圖表2/Chart 2

參數介紹

PARAMETER ILLUSTRATION

參數碼 Parameter	顯示 LED Display	功能描述 Function Description	可調 範圍 Range	單位 Unit	出廠值 Default	說明 Description	備註 Note
1	H	馬達速度調整 Motor Speed	200~ 4500	rpm	4000	選擇切線功能 Select Trimmer	
2	SLM	慢速起縫模式 選擇 Soft Start Stitch ModeFoot	A/T	//	T	A:往前輕觸踏板，即自動執行慢速起縫。 A: Automatic soft start stitching when treading forward foot pedal. T:當切線動作結束後下一次執行車縫動作時自動執行慢速起縫。 T: Automatic soft start stitching when thread trimming completed and start next stitching cycle.	
3	CNR	計數比例選擇 Counter Ratio Selection	1-100	倍數 Multipl er	1	設定計數:"043.UD"的倍數值 Set the counter ratio. It will be a multiple for the value set in "043". The real value will be "003" x "043". (042.CUD設為UTS模式時無效，固定為1倍) When "042" was set as UTS mode, the multiple is set default value (1).	
4	N	起始回縫速度 Start Tacking Speed	200- 4500	rpm	2000		
5	V	終止回縫速度 End Tacking Speed	200- 4500	rpm	2000		
6	B	連續回縫速度 Bar Tacking Speed	200~ 4500	rpm	1800		
7	S	慢速起縫速度 Soft Start Speed	200~ 3000	rpm	400		

參數碼 Parameter	顯示 LED Display	功能描述 Function Description	可調 範圍 Range	單位 Unit	出廠值 Default	說明 Description	備註 Note
8	SLS	慢速起縫針數 Soft Start Stitch Number	0~99	針 stitch	1		
9	A	自動定寸縫速 度 Auto Constant Stitching Speed	200- 4500	rpm	3800		
10	ACD	定寸縫後自動 執行終止回縫 選擇 Auto End Tacking after Constant Stitching	ON/ OFF	//	ON	ON:在執行完最後一段定針縫後，即自動執行終止回縫或切線動作。意即取消補針功能。 ON: After last stitching cycle at constant stitching, automatically execute end tacking or thread trimming. OFF:再執行完最後一段定針縫後，將無自動執行終止回縫或切線動作。 OFF: After last stitching cycle at constant stitching, the end tacking or thread trimming will not be executed unless depressing backward on foot pedal.	

參數碼 Parameter	顯示 LED Display	功能描述 Function Description	可調 範圍 Range	單位 Unit	出廠值 Default	說明 Description	備註 Note
12	SMS	起始回縫模式 選擇 Mode Selection for Start Tacking	A/M/ SU/SD	//	A	<p>A:往前輕觸踏板，即自動執行完起始回縫段針數。 A: One shot sewing.</p> <p>M:受踏板控制可任意控速與停止。 M: Motor can adjust speed and stop during operation via foot pedal control.</p> <p>SU:於各段轉角處自動暫停針上後，始繼續執行下一段針數，暫停時間由參數"027.CT"調整控制。 SU: One shot sewing while motor stops at needle UP with few ms interruption at end of each seam. The interruption time set by "027" timer.</p> <p>SD:於各段轉角處自動暫停針下後，始繼續執行下一段針數，暫停時間由參數"027.CT"調整控制。 SD: One shot sewing while motor stops at needle DOWN with few ms interruption at end of each seam. The interruption time set by "027" timer.</p>	
13	TYS	起始回縫結束 點操作模式選 擇 Mode Selection at the End of Start Tacking	CON/S TP	//	CON	<p>CON:執行完起始回縫段針數後，即自動連續執行下一段的功能設定。 CON: At the end of start tacking, it continues operations if foot pedal presses.</p> <p>STP:執行完起始回縫段針數後，即停止並取當次切線動作一次，必須再次前踏後始恢復一般功能。 STP: At the end of start tacking, the re-start must be controlled by foot pedal forward treading.</p>	

參數碼 Parameter	顯示 LED Display	功能描述 Function Description	可調 範圍 Range	單位 Unit	出廠值 Default	說明 Description	備註 Note
14	SBT	起始回縫功能 選擇 Start Tacking Function Selection	ON/ OFF	//	ON	ON:開啟 ON: Enable OFF:關閉 OFF: Disable	
15	SBA	起始回縫A段 針數設定 Stitch A Setting for Start Tacking	0~15	針 Stitch	3	起始回縫功能ON時， A/B段針數的設定 Setting Stitch numbe A and B for start tacking when the function enabled.	
16	SBB	起始回縫B段 針數設定 Stitch B Setting for Start Tacking	0~15	針 Stitch	3		
17	SBN	起始回縫回數 設定 Turns Setting for Start Tacking	0~4	回 Turn	3		
18	BT1	調整起始回縫 A段補償 Stitch A Balance for Start Tacking	00~0F	針 Stitch	0		
19	BT2	調整起始回縫 B段補償 Stitch B Balance for Start Tacking	00~0F	針 Stitch	0		



參數碼 Parameter	顯示 LED Display	功能描述 Function Description	可調 範圍 Range	單位 Unit	出廠值 Default	說明 Description	備註 Note
20	SME	終止回縫模式 選擇 Mode Selection for End Tacking	A/SU/ SD	//	A	A:車縫後觸動全後踏功能，即自動執行完終止回縫段針數。 A: One shot sewing. SU:於各段轉角處自動暫停針上後，始繼續執行下一段針數，暫停時間由參數"027.CT"調整控制。 SU: One shot sewing while motor stops at needle UP with few ms interruption at end of each seam. The interruption time set by "027" timer. SD:於各段轉角處自動暫停針下後，始繼續執行下一段針數，暫停時間由參數"027.CT"調整控制。 SD: One shot sewing while motor stops at needle DOWN with few ms interruption at end of each seam. The interruption time set by "027" timer.	
21	EBT	終止回縫功能 選擇 End Tacking Function Selection	ON/ OFF	//	ON	ON:開啟 ON: Enable OFF:關閉 OFF: Disable	
22	EBC	終止回縫針數 C設定 Stitch C Setting for End Tacking	0~15	針 Stitch	3	起始回縫功能ON時，C/D段針數的設定。 Setting Stitch numbe C and D for end tacking when the function enabled.	
23	EBD	終止回縫針數 D設定 Stitch D Setting for End Tacking	0~15	針 Stitch	3		
24	EBN	終止回縫回數 設定 Turns Setting for End Tacking	0~4	回 Turn	2		

參數碼 Parameter	顯示 LED Display	功能描述 Function Description	可調 範圍 Range	單位 Unit	出廠值 Default	說明 Description	備註 Note
25	Bt3	調整終止回縫 C段補償設定 Stitch C Balance for End Tacking	00~0F	//	0		
26	Bt4	調整終止回縫 D段補償設定 Stitch D Balance for End Tacking	00~0F	//	0		
27	CT	自動回縫段落 停止時間 Interruption Time Setting at Section End of Tacking	0~999	ms	50		
28	Sb5	起始/終止回縫 針數設定 Stitch Setting for Start / End Tacking Turns Setting for Start Tacking	ON/ OFF	//	OFF	ON:有效 ON: Enable OFF:無效 OFF: Disable	
29	Sb9	起始/終止回縫 針數各 +0~99針 Adding Stitches for Start / End Tacking	0~99	針 Stitch	0		
30	BCC	終止縫C段多 加1針 Adding 1 Stitch to the Stitch C of End Tacking	ON/ OFF	針 Stitch	OFF	ON:當執行終止回縫功能時，再第一段的C段內自動追加一針(必須在車縫中直接做中止回縫功能始有效) ON: When executing end tacking, it will automatically add 1 stitch in C Section. OFF:無效 OFF: The function is invalid.	

參數碼 Parameter	顯示 LED Display	功能描述 Function Description	可調 範圍 Range	單位 Unit	出廠值 Default	說明 Description	備註 Note
31	SMB	自動連續回縫 運動模式選擇 Mode Selection for Bar Tacking	A/M/ SU/SD	//	A	A:往前輕觸踏板，即自動 執行完起始回縫段針數。 A: One Shot Sewing. M:受踏板控制可任意控速 與停止。 M: Motor can adjust speed and stop during operation via foot pedal control. SU:於各段轉角處自動暫 停針上後，始繼續執行下 一段針數，暫停時間由參 數"027.CT"調整控制。 SU: One shot sewing while motor stops at needle UP with few ms interruption at end of each seam. The interruption time set by "027" timer. SD:於各段轉角處自動暫 停針下後，始繼續執行下 一段針數，暫停時間由參 數"027.CT"調整控制。 SD: One shot sewing while motor stops at needle DOWN with few ms interruption at end of each seam. The interruption time set by "027" timer.	
32	BAR	連續回縫功能 選擇 Bar Tacking Function Selection	ON/ OFF	//	OFF	ON:開啟 ON: Enable OFF:關閉 OFF: Disable	
33	BRC	連續回縫A段 針數設定 Stitch A Setting for Bar Tacking Stitch C Setting for End Tacking	00~0F	針 Stitch	4	0:無效	

參數碼 Parameter	顯示 LED Display	功能描述 Function Description	可調 範圍 Range	單位 Unit	出廠值 Default	說明 Description	備註 Note
34	BRN	連續回縫回數 設定 Turns Setting for Bar Tacking	0~15	回 Turn	4	連續回縫的來回車縫次 數設定 註:當來回車縫次數如設 定為'0'時，將為無限次的 來回車縫，必須以全後 踏做結束動作。	
35	BT5	連續回B段針數 設定 Stitch B Setting for Bar Tacking	00~0F	針 Stitch	4	0:無效	
36	BT6	連續回C段針數 設定 Stitch C Setting for Bar Tacking	00~0F	針 Stitch	4	0:無效	
37	SMP	定寸模式選擇 Mode Selection for Constant Stitching	A/M	//	M	A:前踏即動作 A: One Shot Sewing. M:由踏板控制且馬達可中 途停止 M: Motor can adjust speed and stop during operation via foot pedal control.	
38	PM	定寸(15段)選擇 Constant Stitching Function Selection	ON/ OFF	//	OFF	ON:開啟 ON: Enable OFF:關閉 OFF: Disable	
39	PS	第一段至第四 段定寸針數設 定 Stitches Setting for Constant Stitching (P1- P4)	0~250	針	15	P1:15 P2:15 P3:15 P4:15	
		第五段至第十 五段定寸縫針 數設定 Stitches Setting for Constant Stitching (P5- P15)	0~250	針	15	P5:0 P6:0 P7:0 P8:0 P9:0 P10:0 P11:0 P12:0 P13:0 P14:0 P15:0	



參數碼 Parameter	顯示 LED Display	功能描述 Function Description	可調 範圍 Range	單位 Unit	出廠值 Default	說明 Description	備註 Note
40	WON	撥線出力功能 Wiper Function Selection	ON/ OFF	//	ON	ON:開啟掃線功能 ON: Enable OFF:關閉 OFF: Disable	
41	TM	切線出力功能 Trimmer Function Selection	ON/ OFF	//	ON	ON:開啟 ON: Enable OFF:關閉 OFF: Disable	
42	CUD	計數器模式選 擇 Counter Mode Selection	NOP/ UTS	//	NOP	NOP:無計數器功能 NOP: The counter is invalid. UTS:切線後往上計數一次 當達到設定的馬達自動停 止按操作盒A鍵重新計數 UTS: Count up by trimming. When count is over the limit, the motor stops and the counter must be reset by Key A on the Operation Box.	
43	UD	計數目標值設 定 Count Setting	1~ 9999	回 Count	99	計數目標值為參數 "003.CNR" x"043.UD" The set value is parameter "003.CNR" x "043.UD"	
44	PN	計數值顯示 Current Count Display	0~99	//	即時顯 示 Real Time Display	計數目標值"043.UD"的顯 示 Displab the set value in "043.UD"..	
45	SP	車頭速度顯示 Sewing Machine Speed Display	0~ 4500	rpm	即時顯 示 Real Time Display	車頭運轉速度顯示 Sewing Machine Speed Display	

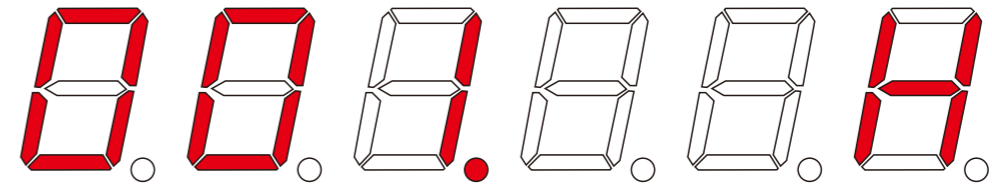
表4/Table4

使用說明

OPERATION ILLUSTRATION

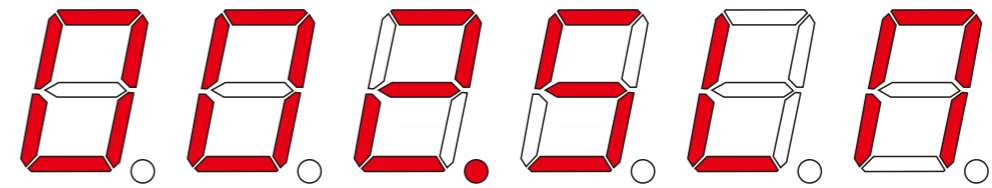
1. 在一般模式下，長按P鍵 (P) 可進入參數選擇模式。

1. In Normal Mode, press P Key (P) to enter Parameter Selection Mode.



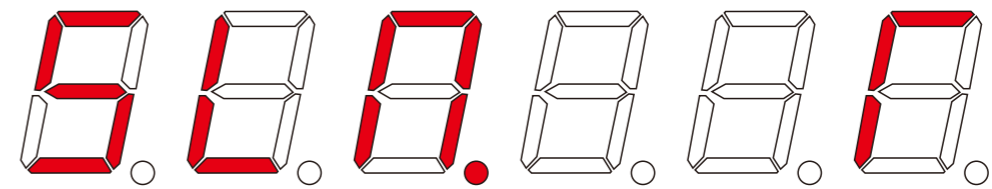
2. 利用D區塊的增加鍵 (+) 選擇參數。

2. Use the increment key (+) in D block to select parameter.



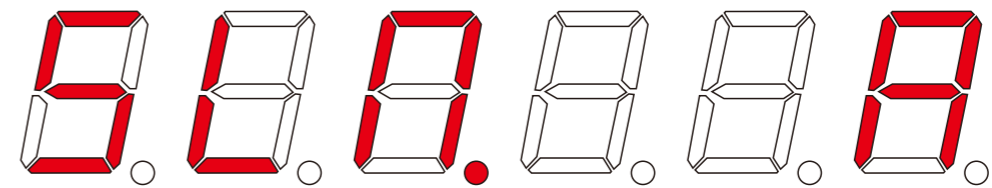
3. 按S鍵 (S) 進入參數調整模式。

3. Press S Key (S) to enter Parameter Adjustment Mode.



4. 利用ABCD區塊的增減鍵 (+) (-) 設定參數。

4. Use the increment key and decrement key in A B C D block to (+) (-) adjust the parameter.

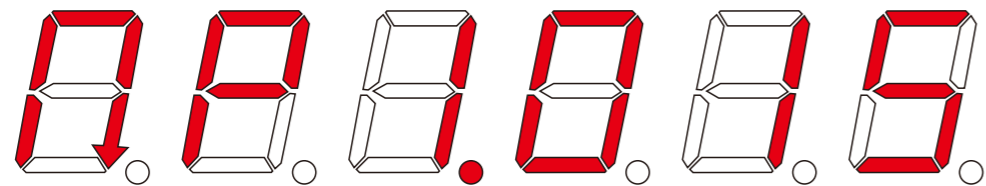



5. 按S鍵回到一般模式 / 或按P鍵回到參數選擇模式。

5. Press S Key to go back to Normal Mode. Or press P Key to go back to Parameter Selection Mode.


《定寸縫詳細步驟》


1. 按定寸縫功能鍵  可進入定寸縫設定模式。



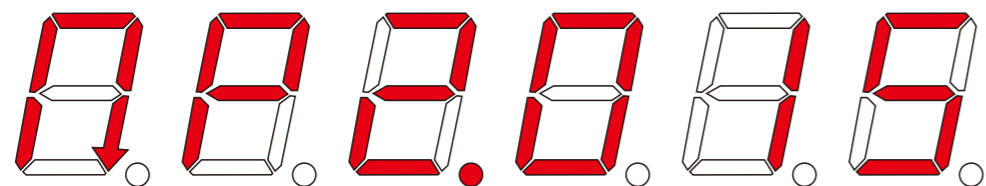
 表示運行中選針盒的跑馬燈，在一般模式下會持續旋轉


《Constant Stitching Parameter Setting Details》

1. Press Constant Stitch Key  to enter Constant Stitching Mode.

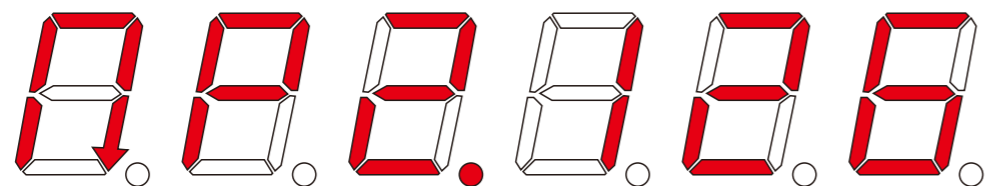
 shows the Operation Box is running.

2. 按A區塊的增加鍵  可調整段數  
P1表示第一段，PA表示第十段，PD表示第13段。




2. Press Increment Key  in A Block to adjust stitch number. For example, P1 refers to 1 stitch, PA refers to 10 stitches, while PD refers to 13 stitches.

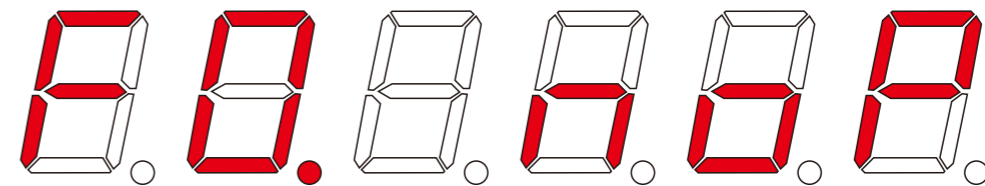
3. 按BCD區塊的增減鍵  $\oplus$   $\ominus$  可調整各段針數，B控制百位C控制十位，D控制個位數，各按一次增加鍵  $\oplus$  則加111。



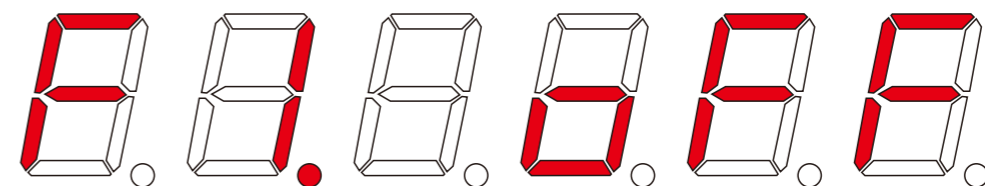
3. Press Increment Key  $\oplus$  and Decrement Key  $\ominus$  can adjust stitches number. For example, the stitches number will increase by 111 if push all Increment Keys  $\oplus$  in B, C, D Block by 1.

《特殊功能設定模式》

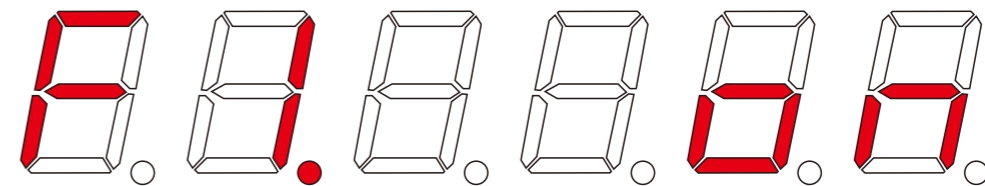
1. 在一般模式下長按S鍵  可進入特殊功能模式。




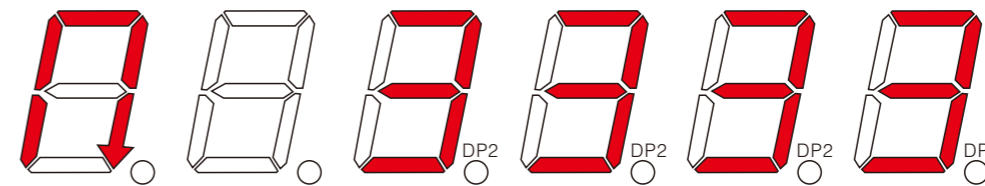
2. 按D區塊的增減鍵可調整功能。F0表示Function 0，F6表示Function 6。




3. 按F鍵  可調整參數。



4. 按S鍵  可離開特殊功能模式，回到一般模式。




《Special Function Setting Details》

1. In Normal Mode, Press S Key  to enter Special Function Mode.

2. Press Increment Key and Decrement Key in D Block to adjust function. F0 refers for Function 0, while F6 refers to Function 6.

3. Press F Key  to adjust parameter.

4. Press S Key  to leave Special Function Mode and back to Normal Mode.

《 顯示器對照表 》

《 Display Table 》

Value	0	1	2	3	4	5	6	7	8	9
Display	0	1	2	3	4	5	6	7	8	9
Value	A	B	C	D	E	F	G	H	I	J
Display	A	b	C	d	E	F	G	H	I	J
Value	K	L	M	N	O	P	Q	R	S	T
Display	k	L	M	n	o	P	q	r	s	t
Value	U	V	W	X	Y	Z				
Display	U	v	W	X	Y	Z				

表5/Table5

馬達電源 Motor Power		倒縫電磁鐵 Reverser		馬達編碼器 Motor Encoder		選針盒 Operation Box		切線電磁閥 Trimmer	
腳位 Pin No.	訊號 Signal	腳位 Pin No.	訊號 Signal	腳位 Pin No.	訊號 Signal	腳位 Pin No.	訊號 Signal	腳位 Pin No.	訊號 Signal
1	U	1	Rev+	1	A+	1	5V	1	Trim+
2	V	2	Rev-	2	B+	2	GND	2	Trim-
3	W			3	Z+	3	Rx		
4	PE			4	+5V	4	Tx		
				5	5V_GND				
				6	U+				
				7	W+				
				8	V+				

表6/Table6

《 連接器連接說明 》

《 Connector Diagram 》

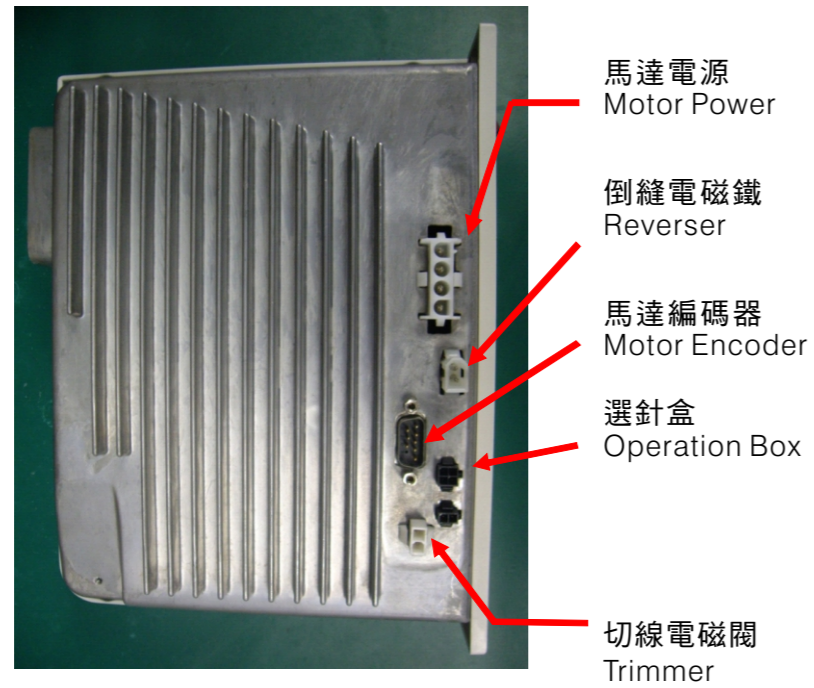


圖31/Fig. 31

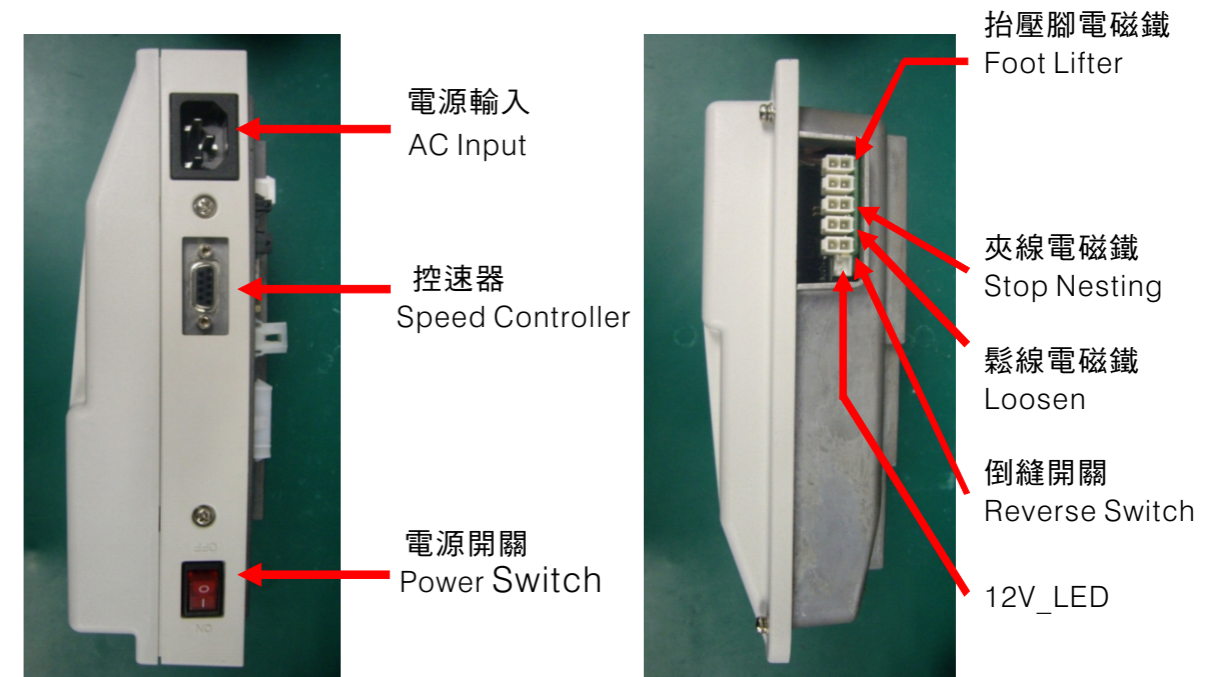


圖32/Fig. 32

控速器 Speed Controller		電磁鐵 Electromagnet			LED	
腳位 Pin No.	訊號 Signal	連接器 conndctor	腳位 Pin No.	訊號 Signal	腳位 Pin No.	訊號 Signal
1	GND	Cn2 抬壓腳 Cn2 Foot Lifter	1	Foot	1	GND
5	Signal		2	24V	2	12V
7	12V	Cn3 夾線 Cn3 Thread Grip	1	Nest		
			2	24V		
		Cn4 鬆線 Cn4 Loose	1	Loosen		
			2	24V		
		Cn5 回縫開關 Cn5 Reverse Switch	1	Rever_SW+		
			2	Rever SWN		

表7/Table7

為了保持縫紉機的機能,且能長久的使用,請每日加以保養。另外,縫紉機如果長時間未使用,請進行以下的保養後再使用。

For keeping the machine quality and lengthening the usage term of this sewing machine, please maintain it everyday. In addition, before first use after a long idling time, please follow the following steps to maintain.

《保養》

1. 抬起押具
2. 將兩個螺絲①拆下,然後拆下針板②。
3. 以軟毛刷清除送布牙③上的布屑。(圖33)

《CLEANING》

1. Raise the presser foot.
2. Remove the two screws ①, and then remove the needle plate ②.
3. Use a soft brush to clean dust and lints on the feed dog teeth ③. (Fig.33)

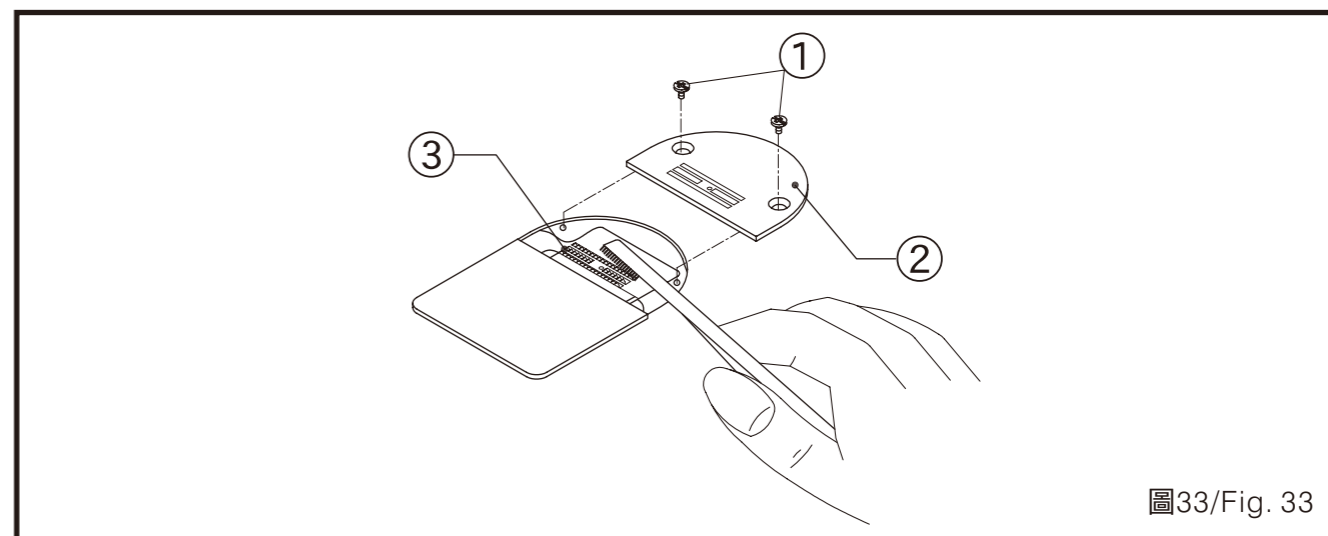


圖33/Fig. 33

4. 清潔後將針板②裝上。
5. 後傾斜縫紉機頭部
6. 拆下梭碗④。(圖34)

4. Install the needle plate ② after doing the above cleaning.
5. Tilt back the machine head.
6. Remove the bobbin case ④. (Fig.34)

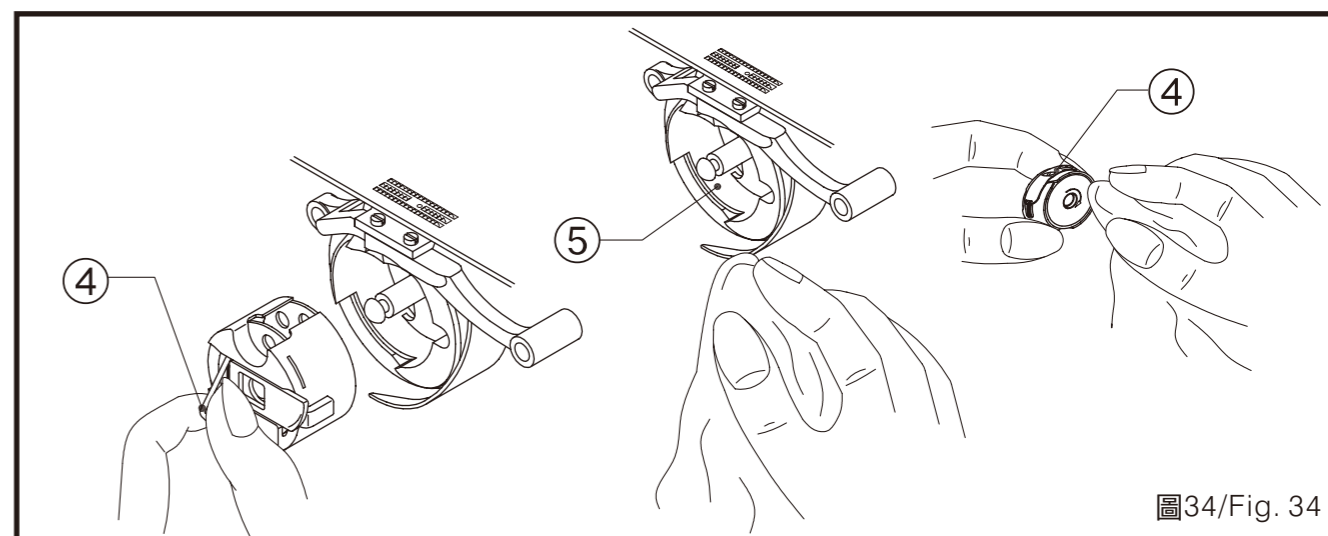


圖34/Fig. 34

保養

MAINTENANCE



注意CAUTION



清潔作業前,請切斷電源。當誤觸起動開關時,縫紉機動作易導致人員受傷。  
Turn off the power switch before carrying out cleaning. The machine may operate if the treadle is pressed incautiously, which could result in injury.



加潤滑油和黃油時,務必戴好保護眼鏡和手套,以防潤滑油進入眼中或沾在皮膚上,易引起發炎。  
Be sure to wear protective goggles and gloves when handling the lubricating oil and grease so that they do not get into your eyes or onto your skin, otherwise inflammation can be resulted.



潤滑油或黃油不能飲用,否則將會引起嘔吐和腹瀉,將油放在小孩拿不到的地方。  
Furthermore, do not drink or eat the oil nor the grease for they can cause vomiting and diarrhea. Keep the oil away of the reach of children.

縫紉機頭倒下或豎起時,請以雙手進行操作。  
Use both hands to hold the machine head when tilting or returning it to its original position.



單手操作時,因縫紉機的重量較重,萬一滑落易導致受傷。  
If only using one hand to move the machine, the weight of the machine head may cause slipping and you may get hurt.



7. 以軟布擦去旋梭⑤上的布屑，檢查旋梭⑤是否受損。
8. 將梭子從梭碗④上拆下，以布清潔梭碗④。
9. 將梭子裝入梭碗④，再將梭碗④重新裝入縫紉機梭頭內。

《潤滑》  
齒輪箱油量(圖35)

- 1.齒輪箱油每月確認是否低於下限③。
- 2.打開螺絲①。
- 3.傾倒機臺加油至刻度上限②。
- 4.固鎖螺絲①。
- 5.每3個月更新一次
- 6.打開螺絲②。
- 7.機體下方放置空盒子，直立機臺5分鐘，漏光機油。
- 8.傾倒機臺加油至刻度上限②。
- 9.固鎖螺絲①。

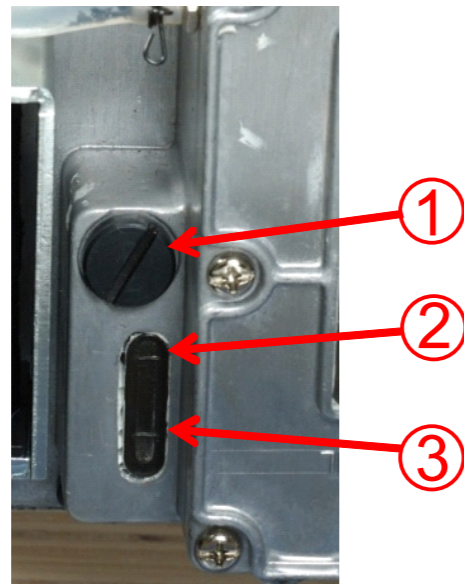


圖35/Fig. 35

7. Wipe off any dust on the rotary hook⑤ with a soft cloth, and check that there is no damage to the rotary hook ⑤.
8. Remove the bobbin from the bobbin case ④ and clean the bobbin case ④ with a cloth.
9. Insert the bobbin into the bobbin case ④ and then place the bobbin case④ back into the machine.

《LUBRICATION》  
Gearbox oil quantity (Fig.35)

- 1.Ensure if the oil is below the lower limit ③ in the gear box monthly.
- 2.Unfasten the screw①.
- 3.Pour the oil to the upper limit ② in the machine.
- 4.Tighten the screw①.
- 5.Renew every 3 months.
- 6.Take off the screw②.
7. Put an empty box under the machine.Put the machine straight for 5 minutes for leaking oil.
- 8.Pour the oil to the upper limit ② in the machine.
9. Tighten the screw ①.

- 固態潤滑油添加-三個月(圖36)  
下列幾處要進行固態潤滑油的添加
- 1.針棒軸襯①、②。
  - 2.送具偏心軸③。
  - 3.固態潤滑油的成分說明

註：調整時請先關閉電源，以確保安全。

Add the solid lubrication-Quarterly. (Fig.36)  
The followings are where need to add the solid lubrication.

- 1.Needle bar bushing①,② .
- 2.Feed dog with the eccentric shaft ③.
- 3.Ingredient description of the solid lubrication.

Remark: For safety, please turn off the power before adjusting.

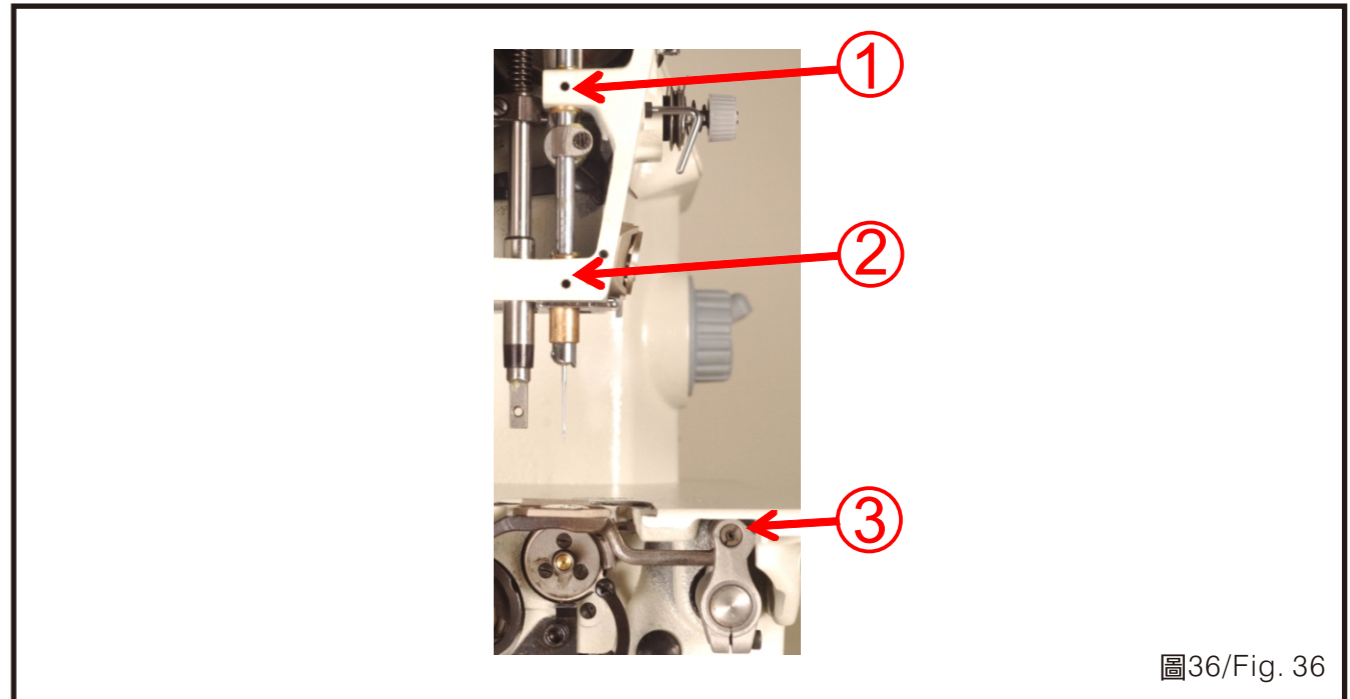
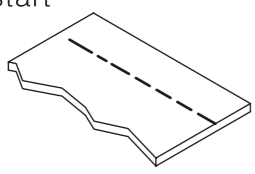
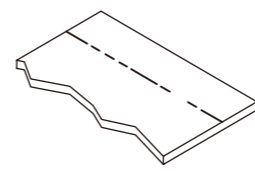
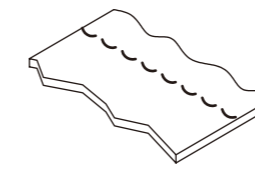


圖36/Fig. 36

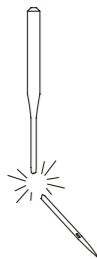




項次 NO.	現象 Problem	檢查及調整 Possible Reason	參照 Goes to Page
5	縫紉開始時出現跳針或脫線 Skipped stitches or unraveled thread at sewing start 	<ul style="list-style-type: none"> <li>●挑線簧張力是否過大?</li> <li>◎減小挑線簧張力。</li> <li>●Is the thread take up spring tension too strong?</li> <li>◎Reduce the tension of the thread take-up spring.</li> </ul>	24
		<ul style="list-style-type: none"> <li>●挑線簧活動範圍是否過大?</li> <li>◎降低挑線簧的位置。</li> <li>●Is the thread take-up spring operating range too large?</li> <li>◎Lower the position of the thread take-up spring.</li> </ul>	24
		<ul style="list-style-type: none"> <li>●切線後, 針線殘留量是否過短?</li> <li>◎調整張力。</li> <li>●Are the trailing lengths of the upper threads too short after thread trimming?</li> <li>◎Adjust the tension.</li> </ul>	21
		<ul style="list-style-type: none"> <li>●縫線是否剪切整齊?</li> <li>◎將固定刀磨利, 或視需要更換固定刀和活動刀。</li> <li>●Are the threads not being trimmed cleanly?</li> <li>◎Sharpen the fixed knives, or replace the fixed and moveable knives if necessary.</li> </ul>	
		<ul style="list-style-type: none"> <li>●機針是否過粗?</li> <li>◎使用比現有機針小一號的機針。</li> <li>●Is the needle too wide?</li> <li>◎Try using a needle with a count that is one lower than the current needle.</li> </ul>	23
		<ul style="list-style-type: none"> <li>●切線後, 梭碗拖出底線是否過短?</li> <li>◎如果梭子發生空轉, 更換梭碗中的旋梭空轉防止簧。</li> <li>●Is the length of thread trailing out from the bobbin case after thread trimming too short?</li> <li>◎If the bobbin is spinning loosely, replace the anti-spin spring in the bobbin case.</li> <li>●縫紉開始時, 縫紉速度是否過快?</li> <li>◎使用慢速起縫。</li> <li>●Is the sewing speed too fast at the sewing start?</li> <li>◎Start stitching in slow speed</li> </ul>	21

項次 NO.	現象 Problem	檢查及調整 Possible Reason	參照 Goes to Page
6	線縫不平整 Uneven seam 	<ul style="list-style-type: none"> <li>●壓具壓力是否過小?</li> <li>◎調整壓具壓力。</li> <li>●Is the presser foot pressure too weak?</li> <li>◎Adjust the presser foot pressure.</li> <li>●送布牙高度是否太低?</li> <li>◎調整送布牙高度。</li> <li>●Is the feed dog too low?</li> <li>◎Adjust the feed dog height.</li> <li>●梭子是否有刮痕?</li> <li>◎如果梭子受損, 用油石打磨光滑, 或予以更換。</li> <li>●Is the bobbin scratched?</li> <li>◎If the bobbin is damaged, smooth it with an oiled grindstone or replace it.</li> </ul>	25
7	大量的皺褶(張力過大) Large degree of puckering (excess tension) 	<ul style="list-style-type: none"> <li>●針線張力是否過大?</li> <li>◎盡量減小針線張力。</li> <li>●Is the upper thread tension too strong?</li> <li>◎Make the upper thread tension as weak as possible.</li> <li>●梭線張力是否過大?</li> <li>◎盡量減小梭線張力。</li> <li>●Is the lower thread tension too strong?</li> <li>◎Make the lower thread tension as weak as possible.</li> <li>●挑線彈簧張力是否過大?</li> <li>◎盡量減小挑線簧張力。</li> <li>●Are the thread take-up spring tensions too strong?</li> <li>◎Make the thread take-up spring tension as weak as possible.</li> </ul>	21  23  21



項次 NO.	現象 Problem	檢查及調整 Possible Reason	參照 Goes to Page
11	剪線不正確 (上線和底線均未剪切) Incorrect thread trimming (Upper and lower threads are both not being trimmed)	<ul style="list-style-type: none"> <li>● 固定刀或活動刀零件部是否受損或磨損?</li> <li>◎ 更換固定刀或活動刀。</li> <li>● Is the fixed knife or movable knife damaged or worn?</li> <li>◎ Replace the fixed knife or the movable knife.</li> <li>● 機針是否安裝正確?</li> <li>◎ 如果機針安裝不正確，應正確加以安裝。</li> <li>● Is the needle properly installed?</li> <li>◎ If it is incorrect, install the needle correctly.</li> </ul>	24
12	斷針 Broken needles  	<ul style="list-style-type: none"> <li>● 縫紉過程中是否在送入或拉出面料時用力過度?</li> <li>● 機針是否安裝正確?</li> <li>◎ 如果機針安裝不正確，應正確加以安裝。</li> <li>● Is the material being pushed or pulled with excessive force during sewing?</li> <li>● Is the needle properly installed?</li> <li>◎ If it is incorrect, install the needle correctly.</li> <li>● 機針是否彎曲? 針尖是否斷裂起毛或針孔是否被堵住?</li> <li>◎ 更換機針</li> <li>● Is the needle bent, is the needle tip broken, or is the needle hole blocked?</li> <li>◎ Replace the needle.</li> </ul> <p>注意 如果斷針不慎掉入縫紉衣物中，會有很大的危險。請盡可能找出斷掉的機針 Caution It is extremely dangerous to leave any pieces of broken needle sticking in the material. If the needle breaks, search for all pieces until the whole of the needle is found.</p>	24
		<ul style="list-style-type: none"> <li>● 電源插頭是否從控制箱上鬆開?</li> <li>◎ 將插頭插牢</li> <li>● Is the power supply connector disconnected from the control box?</li> <li>◎ Insert the connector securely.</li> </ul>	24
14	打開電源並踩下腳踏 板時，縫紉機不動 作。 Machine does not operate when power is turned on and treadle is pressed.	<ul style="list-style-type: none"> <li>● 電源插頭是否從控制箱上鬆開?</li> <li>◎ 將插頭插牢</li> <li>● Is the power supply connector disconnected from the control box?</li> <li>◎ Insert the connector securely.</li> </ul>	17

項次 NO.	現象 Problem	檢查及調整 Possible Reason	參照 Goes to Page
15	縫紉機不能以高速運轉 Machine does not operate at high speed	<ul style="list-style-type: none"> <li>● 縫紉速度設定和倒縫加固速度設定是否正確?</li> <li>◎ 請設定在高速縫紉速度</li> <li>● Is the sewing speed setting or backtack speed setting incorrect?</li> <li>◎ Use the sewing speed control keys to set the high speed.</li> </ul>	30
16	在縫紉過程中縫紉機 停止運轉。 Machine stops during sewing.	<ul style="list-style-type: none"> <li>● 定針鍵是否在ON位置?</li> <li>◎ 關閉定針鍵功能。</li> <li>● Is the fixed stitch key turned on?</li> <li>◎ Turn off the function of fixed stitch key.</li> <li>● 電源電壓是否太低?</li> <li>◎ 檢查電源。如果電線太長，或單一插座接入過多的電器，則可能造成電壓下降。</li> <li>● Is the power supply voltage too low?</li> <li>◎ Check the power supply. (If the power cord is too long or too many appliances are being run from a single outlet, this may cause voltage drops.)</li> </ul>	
17	操作盒顯示螢幕上沒 有任何顯示圖像。 Nothing appears on the operation panel display.	<ul style="list-style-type: none"> <li>● 電源插頭是否從控制箱上鬆動?</li> <li>◎ 將插頭插牢。</li> <li>● Is the power supply connector disconnected from the control box?</li> <li>◎ Insert the connector securely.</li> </ul>	16
		<ul style="list-style-type: none"> <li>● 控制箱內的操作盤插頭是否鬆動?</li> <li>◎ 將插頭插牢。</li> <li>● Is the operation panel connector inside the control box disconnected?</li> <li>◎ Insert the connector securely.</li> </ul>	16

圖表3/Chart3



《 其他故障排除 》

1.Err 1：過電流保護

說明：

- (1) 控制器檢知Motor運轉電流值  $\geq 20A$ 時。
- (2) Bulk Voltage大於470Vdc時，Motor不再啟動。

故障排除：

- 步驟 1: 檢查負載是否過大?或機構大心卡住?
- 步驟 2: 確認IGBT驅動器或IGBT是否損毀。(圖表4)  
是→跳到步驟3。  
否→跳到步驟4。
- 步驟 3: 更換控制基板。
- 步驟 4: 更換馬達。
- 步驟 5: 如仍無法解決問題，則同時更換控制器與馬達。

《 Other troubleshooting 》

1.Err 1 :Over Current Protection .

Description :

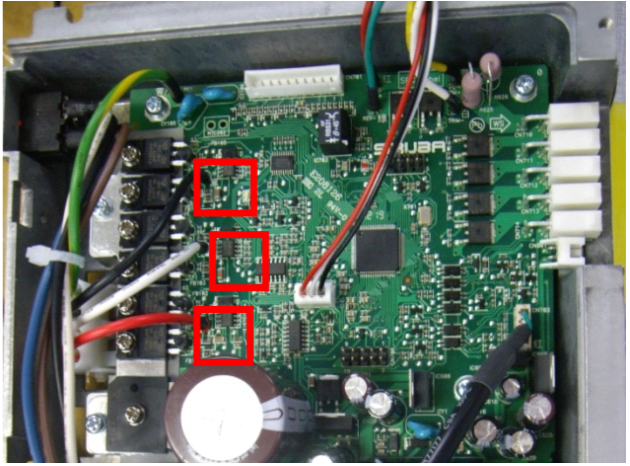
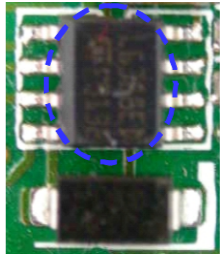
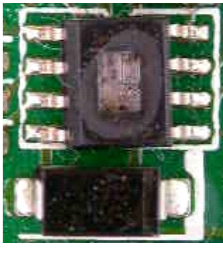
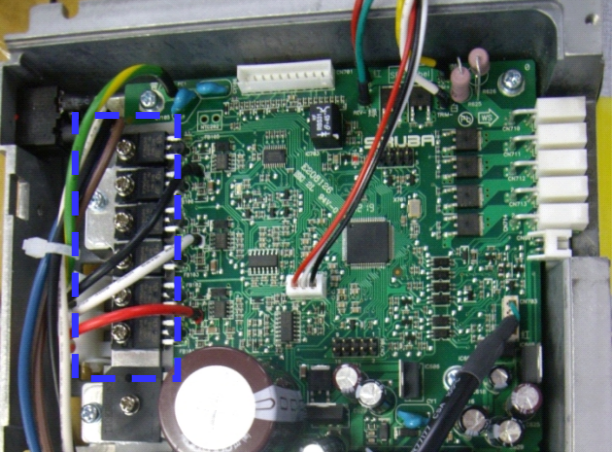


- (1) When Motor controller detects the current value  $\geq 20A$  .
- (2) Bulk voltage is greater than 470Vdc. Motor will not start.

Troubleshooting:

- Step 1: Check if the load is too large or main shaft is stuck.
- Step 2: Check if IGBT driver or IGBT is damaged . (Chart4)  
Yes → Go to Step 3.  
No → Go to Step 4.
- Step 3: Replace the control board.
- Step 4: Replace the motor.
- Step 5: If the error still cannot be solved, change both control board and motor.

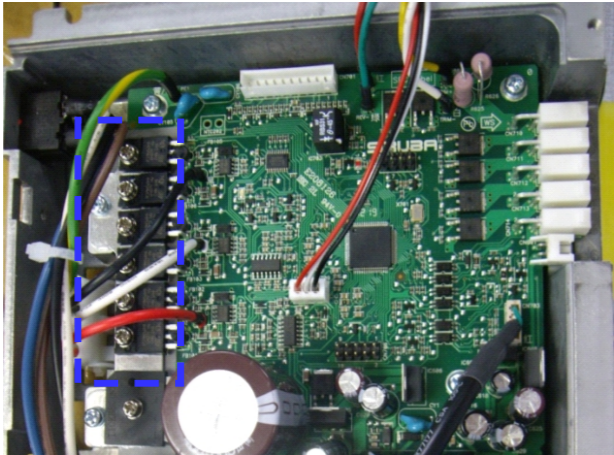
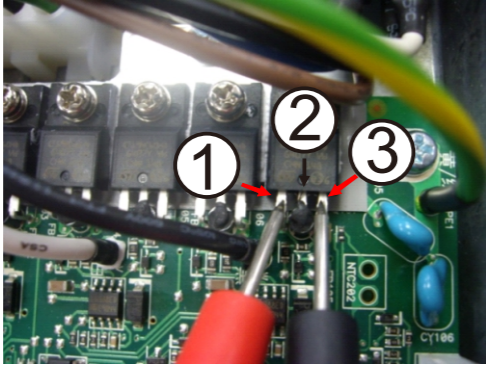
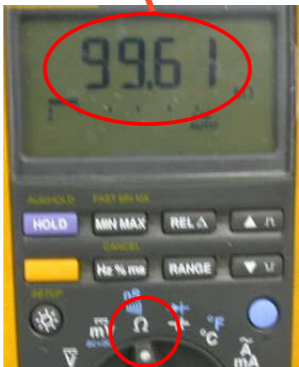
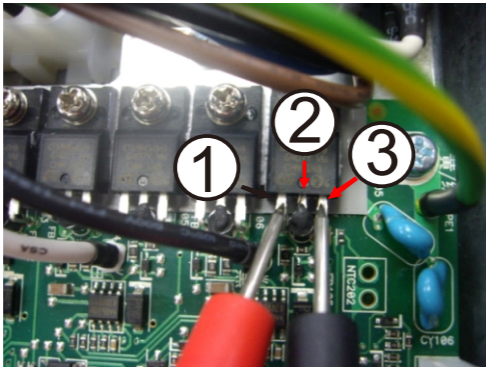
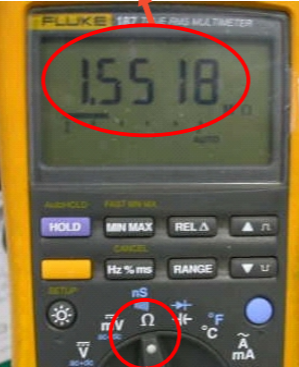
《 步驟 2: IGBT驅動器或IGBT分析步驟 》

《 Step 2: IGBT Driver or IGBT Troubleshooting Steps 》

項次 NO.	圖示
<p>(1) 確認IGBT驅動器是否異常。 (1) Check if IGBT drivers abnormal.</p>	 <p style="text-align: center;">3 IGBT Drivers Location</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>Normal: The black molding is completed and without damaged.</p> </div> <div style="text-align: center;">  <p>Abnormal: The black molding is broken and the inside die exposed.</p> </div> </div>
<p>(2) 確認IGBT是否異常。 (2) Check if IGBT abnormal.</p>	 <p style="text-align: center;">6 IGBTs Location</p> <div style="display: flex; justify-content: center; align-items: center;">  <div style="margin-left: 20px;">  <p>Abnormal: The black molding is broken and the inside die exposed.</p> </div> </div>



《 步驟 2: IGBT 驅動器或 IGBT 分析步驟 》  
 《 Step 2: IGBT Driver or IGBT Troubleshooting Steps 》

項次 NO.	圖示
<p>(3) 調整萬用電錶到歐姆檔，確認 IGBT 阻值是否異常。</p> <p>(3) Adjust DVM for resistance measurement and check IGBT resistance value.</p> <ul style="list-style-type: none"> <li>● 逐顆量測 IGBT Pin 1 到 Pin 3 阻值 (正常值為 100k ohm +/- 20%)</li> <li>● Check resistance value between IGBT Pin 1 and 3 on each IGBT. (Pass Value: 80K~120k ohm).</li> </ul>	 <p style="text-align: center;">6 IGBTs Location</p>  <p style="text-align: center;">Measure Pin 1 and 3 Resistance</p>  <p style="text-align: center;">Adjust to Resistance Measurement</p> <p style="text-align: center;">Pass Value from DVM</p>
<p>(4) 調整萬用電錶到歐姆檔，確認 IGBT 阻值是否異常。</p> <p>(4) Adjust DVM for resistance measurement and check IGBT resistance value.</p> <ul style="list-style-type: none"> <li>● 逐顆量測 IGBT Pin 2 到 Pin 3 阻值 (正常值為 1.55Mohm +/- 20%)</li> <li>● Check resistance value between IGBT Pin 2 and 3 on each IGBT. (Pass Value: between 1.24M-1.86Mohm).</li> </ul>	 <p style="text-align: center;">Measure Pin 2 and 3 Resistance</p>  <p style="text-align: center;">Adjust to Resistance Measurement</p> <p style="text-align: center;">Pass Value from DVM</p>

圖表 4/Chart 4

2. Err 4 : 過電壓保護(圖37)

說明：檢知 Bulk Voltage 發生最大值時，Motor 不再啟動。

故障排除：

步驟 1：調整萬用電錶到 AC 檔量測 AC 電壓，確認輸入電壓是否異常過高 (280Vac)。

步驟 2：故障無法排除，請更換控制基板。

2. Err 4 : Over Voltage Protection (Fig. 37)

Description: When detector bulk voltage reaches maximum, motor will not start.

Troubleshooting:

Step 1: Adjust DVM for AC Voltage measurement. Measure the outlet to check if input voltage is higher than 280V.

Step 2: If error can not be solved, replace the control board.

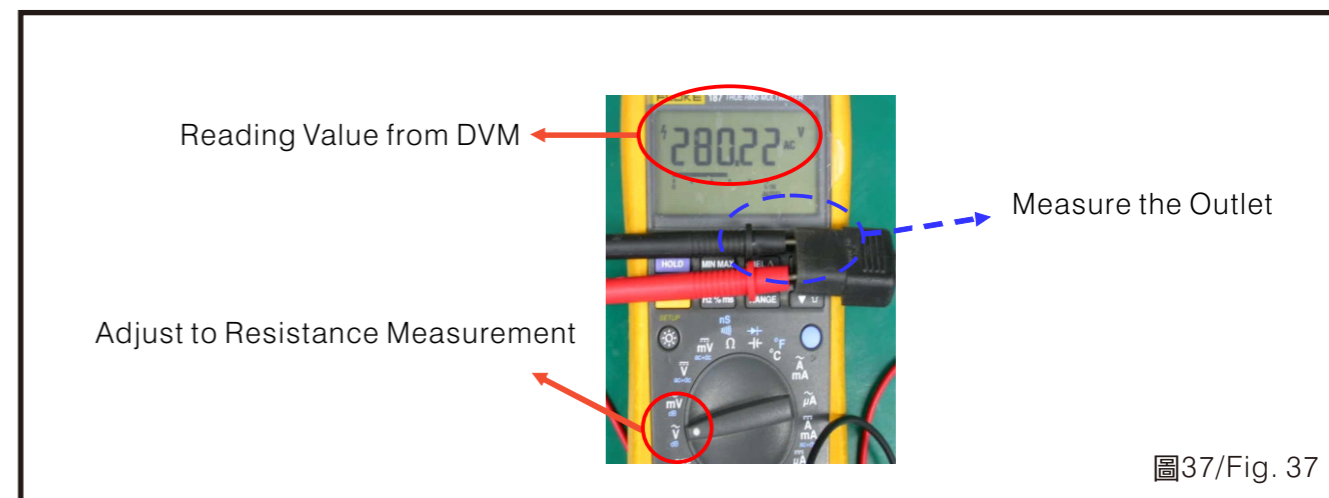


圖 37/Fig. 37

3. Err 7 : 馬達堵轉

說明：因機台零件損毀或不可抗拒因素造成馬達堵轉。

故障排除：

步驟 1：檢查機台是否有異物纏繞手輪造成卡住、機體有零件損毀或馬達損毀。

步驟 2：IGBT 驅動器或 IGBT 是否有損毀 (分析步驟同 Err 1 Step 2)。

步驟 3：故障無法排除，請更換控制基板。

3. Err 7 : Over Torque

Description: The motor is blocked due to spare part damages or uncontrollable causes.

Troubleshooting:

Step 1: Check if there is any object winding around the machine, any spare part damage or motor damage.

Step 2: Check if IGBT driver or IGBT is damaged. (same as details in Err 1 Step 2).

Step 3: If the error can not be solved, replace the control board.

4. Err 8 : 選針盒通訊介面異常(圖38)

說明：選針盒通訊介面傳輸發生異常。

故障排除：檢查選針盒連接線是否有損傷斷線及確實插上。

4. Err 8 : Operation Box Communication Error (Fig. 38)

Description: Communication interface with operation box is abnormal.

Troubleshooting:

Check if the cable of the operation box is broken. Ensure correct connection between control box and operation box.



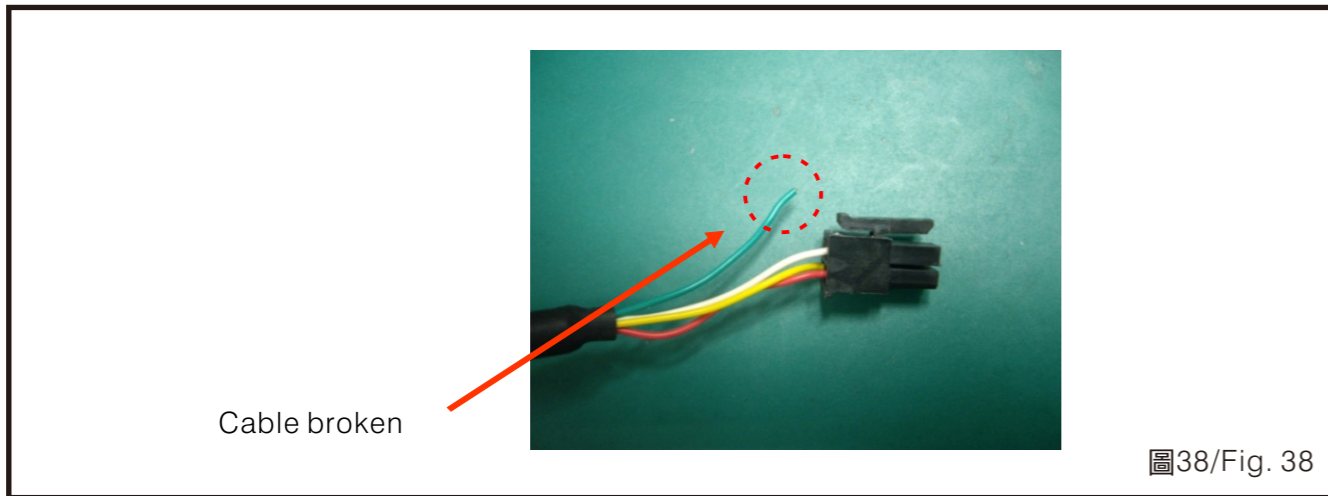


圖38/Fig. 38

5.Err 20：控制器過熱保護 (圖39)

說明：控制器內部溫度過高導致異常。  
故障排除：

- 步驟1：檢查是否負載過大?或運轉時間過長?
- 步驟2：更換溫度Sensor NTC201。
- 步驟3：故障無法排除，請更換控制基板。

5.Err 20: Control Box Over Temperature Protection(Fig. 39)

Description: The temperature inside the control box is too high.

Troubleshooting:

- Step1: Check if the load is too large or under long time running.
- Step2: Replace temperature sensor NTC201
- Step3: If the error cannot be solved, replace the control board.

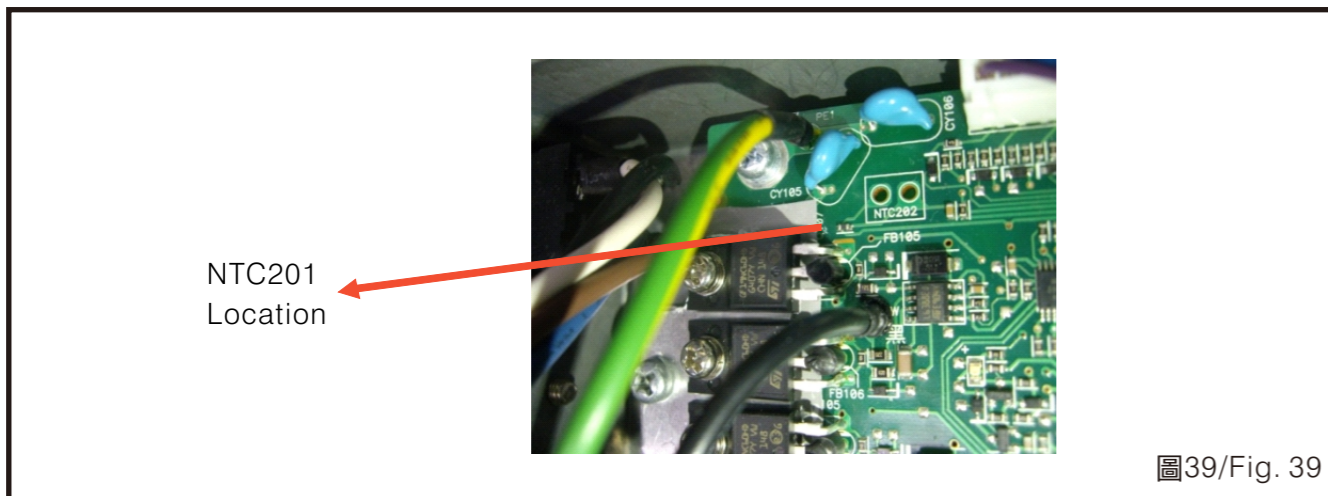


圖39/Fig. 39

6.Err 21：電機編碼板異常(圖40)

說明：馬達Encoder訊號因斷線或損毀，導致MCU偵測發生異常，Motor動作。

故障排除：

- 步驟1：馬達Encoder訊號線是否斷線或損毀。
- 步驟2：故障無法排除，請更換馬達。

6.Err 21: Motor Encoder Abnormal(Fig.40)

Description:

If the motor encoder signal breaks or damages, it will cause the MCU sensing abnormal. As a result, the motor will not start.

Troubleshooting:

- Step1: Check if motor encoder cable is disconnected or damaged.
- Step2: If error can not be solved, please replace the motor.

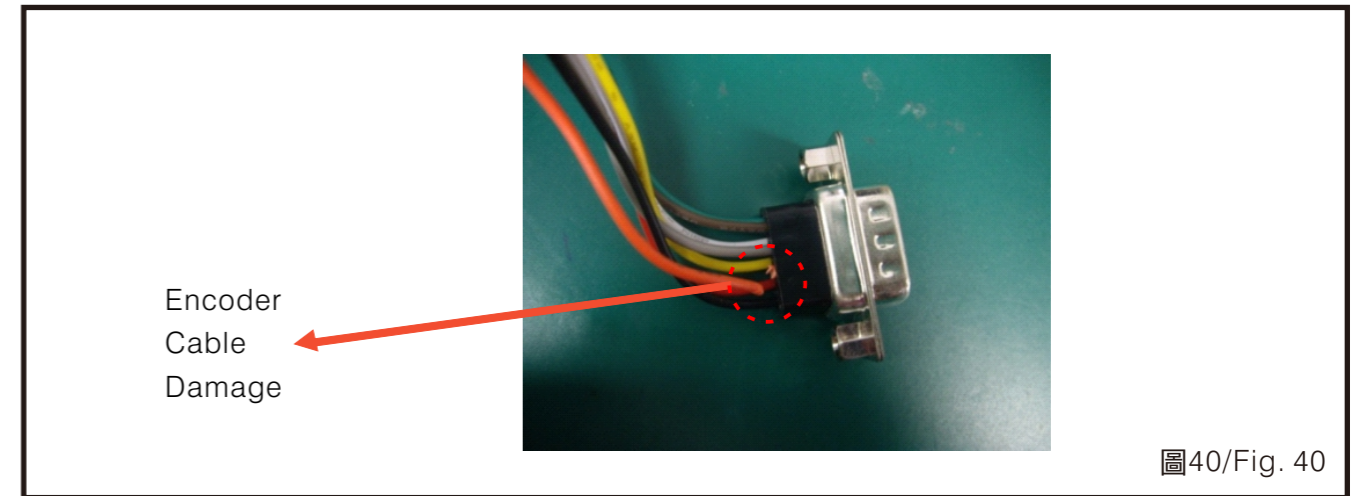


圖40/Fig. 40

7.Err 23：倒縫開關異常

說明：倒縫開關異常。

故障排除：檢查倒縫開關接線是否有錯誤或倒縫開關是否短路。

7.Err 23：Reverse Stitching Switch Abnormal

Description: Reverse stitching switch abnormal.

Troubleshooting:

Check if there is connection error or short on reverse stitching stitch.

8.OIL LOW：低油位警示

說明：旋梭潤滑油油位過低需添加潤滑油。

故障排除：

- 步驟1：可長按選針盒A欄 ⊕ 鍵暫時清除低油位警示，可繼續進行縫製作業。
- 步驟2：另因此警示為油位耗盡之預警，請同步連絡技術人員為機台添加潤滑油，以避免油位耗盡導致停機。
- 步驟3：添加潤滑油後，參數49油位檢知針數累計顯示清除程序同Err 24 Step 3。

8.OIL LOW：Lubricant Level Warning

Description:

This indicates the lubricant level is low and requires refill lubricant.

Troubleshooting:

- Step1: Press column A ⊕ key in operation box can temporary clear the lubricant level warning. The sewing operation can be continued.
- Step2: As the error code is the pre-alert for lubricant depletion, please also contact with qualified technician to refill lubricant before lubricant depletion and machine shutdown.
- Step3: After refilling lubricant, the clear procedure for parameter 49 lubricant level display follows Err24 Step 3.

9. Err 24: 油位耗盡遮斷

說明：旋梭潤滑油已耗盡，此時機台會完全停機需即刻添加潤滑油。

故障排除：

步驟1：關閉電源。

步驟2：添加潤滑油。

步驟3：完成添加潤滑油後，將踏板置於中立處後，進入參數49油位檢知針數累計顯示。長按選針盒A欄 ⊕ 鍵，將油位累計針數歸零並解除警示完成後。機台可再進行運轉。

注意：未添加潤滑油請勿將參數49歸零。

9. Err 24: Lubricant Depletion Shutdown

Description:

This indicates the lubricant is depleted. The machine is completely shutdown and requires refilling lubricant immediately.

Troubleshooting :

Step1: Turn off the power.

Step2: Refill lubricant into machine.

Step3: After lubricant refilling, set the pedal at neutral place then enter parameter 49 lubricant level display. Press column A ⊕ key for few seconds to reset the number to zero then the machine will resume operations.

Warning: Do not reset parameter 49 into zero without refilling lubricant.

10. Err 25: 電磁閥短路遮斷

說明：24V電磁閥異常。

故障排除：

檢查所有電磁閥(切線、倒縫、抬壓腳、鬆線、夾線)是否短路或阻抗過低。

10. Err 25: Electromagnetic Valve Short Protection

Description: 24V electromagnetic valve abnormal.


Troubleshooting:

Check if the electromagnetic valves (thread trimming, reverse stitching, foot presser lifter, thread tension release, thread grip) are short or with low impedance.

11. 安全開關檢知

說明：安全開關異常。

故障排除：


一般模式下，旋轉符號  不轉動時：

步驟1：關閉電源，檢查縫紉機安全開關是否故障。

11. Safety Switch Error

Description: The safety switch is unusual.

Troubleshooting :

When the motor rotating symbol  stops during Normal Mode:

Step1: Turn off the power and check the connection for safety switch.

桌板圖

TABLE CUT-OUT

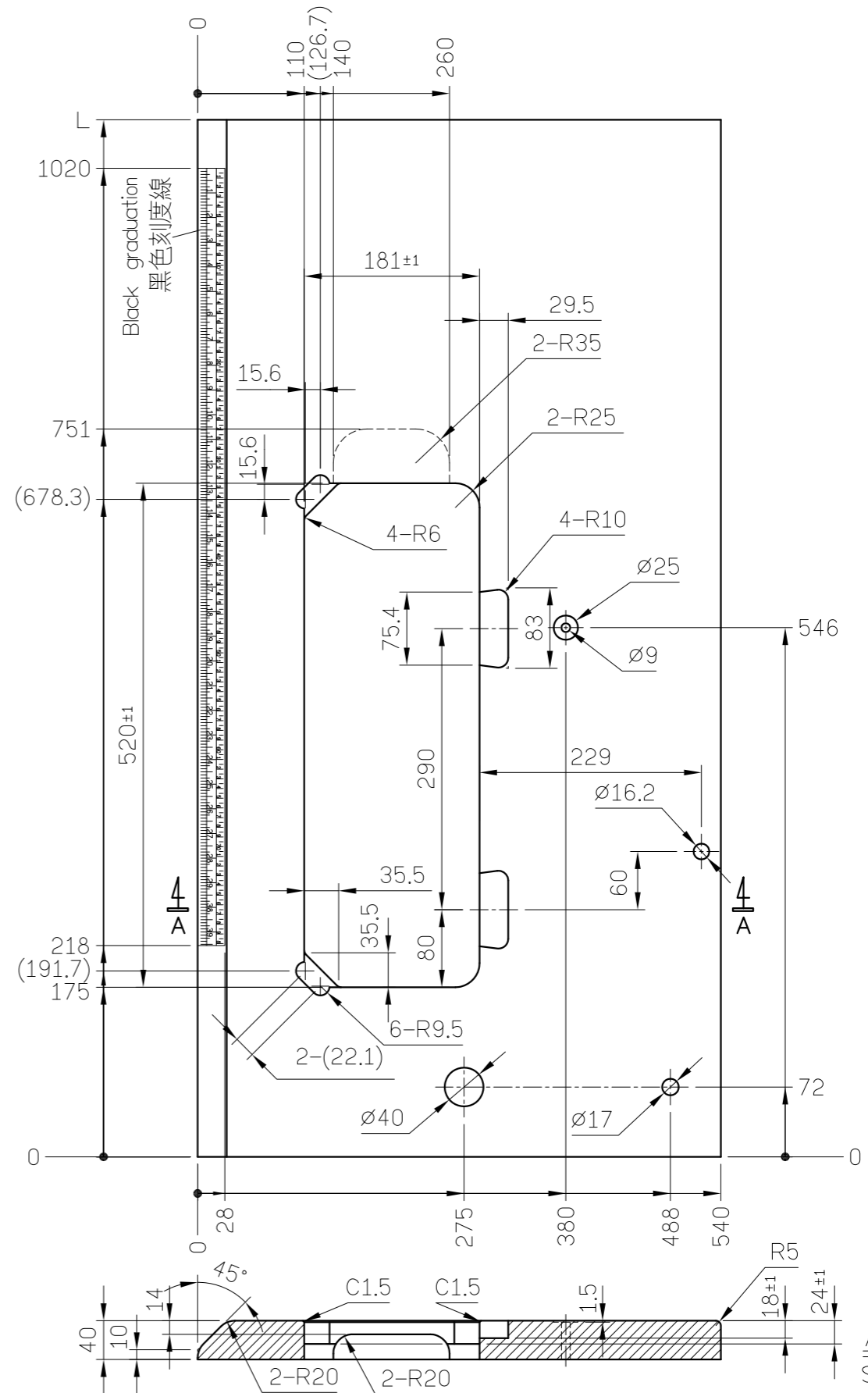


圖41/Fig. 41

## 報廢流程

## DEMOLITION PROCEDURE

1. 當機器需要被淘汰與報廢時，有一些基本規則必須採納、遵守以保護環境及公眾健康。
  2. 所有的機器零組件必須依照下列分類來區分開：
    - (1) 所有護套、可伸縮軟管及塑膠或非金屬零件。
    - (2) 電器零件：開關、照明器具等。
    - (3) 絕緣材料：石棉、彈性/可伸縮橡膠片。
    - (4) 金屬：含鐵金屬、銅、青銅與黃銅、其他各種金屬。
  3. 以此方法，所有材質可以正確的淘汰、回收再利用或鎔解為可再使用或再處理而不至於危害環境。
1. When the machine needs to be eliminated and demolished, certain basic rules must be observed to protect the environment and public health.
  2. ALL machine componenets must be divided according to categories as the followings:
    - (1) All sheathes, flexible hosing and plastic or non-metal components.
    - (2) Electricity components: switches, or lighting components.
    - (3) Insulation materials: rock wool, and flexible rubber strips.
    - (4) Metals: ferrous metals, copper, bronze and brass, various.
  3. In this way, all materials can be eliminated correctly, recycled, or melted down for re-use or disposed of so that they do not harm the environment.