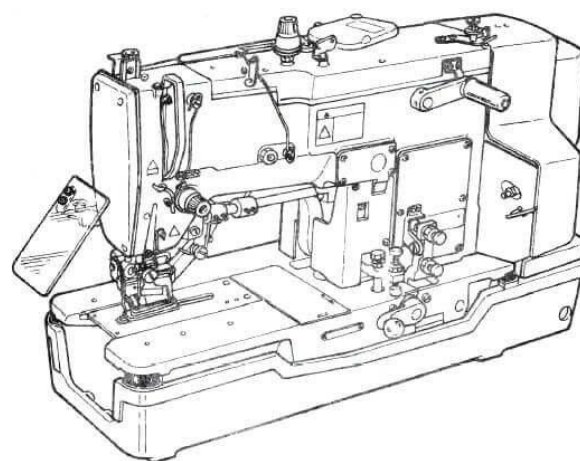


**781  
783**

**782  
784**

**使用說明  
零件圖冊**

**OPERATION MANUAL  
PARTS BOOK**



**Read safety instructions carefully and understand them before using.  
Retain this Instruction Manual for future reference.**

為了安全地使用，請您在使用之前一定閱讀本使用說明書。

另外，請您注意保管本使用說明書，以便隨時查閱。

## IMPORTANT SAFETY INSTRUCTIONS

Putting sewing systems into operation is prohibited until it has been ascertained that the sewing systems in which these sewing machines will be built into, have conformed with the safety regulations in your country. Technical service for those sewing systems is also prohibited.

1. Observe the basic safety measures, including, but not limited to the following ones, whenever you use the machine.
2. Read all the instructions, including, but not limited to this Instruction Manual before you use the machine. In addition, keep this Instruction Manual so that you may read it at anytime when necessary.
3. Use the machine after it has been ascertained that it conforms with safety rules/standards valid in your country.
4. All safety devices must be in position when the machine is ready for work or in operation. The operation without the specified safety devices is not allowed.
5. This machine shall be operated by appropriately-trained operators.
6. For your personal protection, we recommend that you wear safety glasses.
7. For the following, turn off the power switch or disconnect the power plug of the machine from the receptacle.
  - 7-1 For threading needle(s), looper, spreader etc. and replacing bobbin.
  - 7-2 For replacing part(s) of needle, presser foot, throat plate, looper, spreader, feed dog, needle guard, folder, cloth guide etc.
  - 7-3 For repair work.
  - 7-4 When leaving the working place or when the working place is unattended.
  - 7-5 When using clutch motors without applying brake, it has to be waited until the motor stopped totally.
8. If you should allow oil, grease, etc. use with the machine and devices to come in contact with your eyes or skin or swallow any of such liquid by mistake, immediately wash the contacted areas and consult a medical doctor.
9. Tampering with the live parts and devices, regardless of whether the machine is powered, is prohibited.
10. Repair, remodeling and adjustment works must only be done by appropriately trained technicians or specially skilled personnel. Only spare parts designated by JUKI can be used for repairs.
11. General maintenance and inspection works have to be done by appropriately trained personnel.
12. Repair and maintenance works of electrical components shall be conducted by qualified electric technicians or under the audit and guidance of specially skilled personnel.


Whenever you find a failure of any of electrical components, immediately stop the machine.
13. Before making repair and maintenance works on the machine equipped with pneumatic parts such as an air cylinder, the air compressor has to be detached from the machine and the compressed air supply has to be cut off. Existing residual air pressure after disconnecting the air compressor from the machine has to be expelled. Exceptions to this are only adjustments and performance checks done by appropriately trained technicians or specially skilled personnel.
14. Periodically clean the machine throughout the period of use.
15. Grounding the machine is always necessary for the normal operation of the machine. The machine has to be operated in an environment that is free from strong noise sources such as high-frequency welder.
16. An appropriate power plug has to be attached to the machine by electric technicians. Power plug has to be connected to a grounded receptacle.
17. The machine is only allowed to be used for the purpose intended. Other used are not allowed.
18. Remodel or modify the machine in accordance with the safety rules/standards while taking all the effective safety measures. assumes no responsibility for damage caused by remodeling or modification of the machine.
19. Warning hints are marked with the two shown symbols.


  


Danger of injury to operator or service staff

Items requiring special attention

## FOR SAFE OPERATION

- 

1. Don't put your hand under the cloth cutting knife and the needle when you turn "on" the power switch or operate the machine.
  2. Don't put your hand into the thread take-up cover while the machine is running.
  3. Never bring your fingers, hair or clothing close to, or place anything on the handwheel, V-belt, bobbin winder wheel or motor during operation.
  4. If your machine is provided with a belt cover, finger guard and safety plate, never operate your machine with any of them removed.
  5. When tilting the machine head, exercise care not to allow your fingers etc. to be caught under the machine head.
- 

6. To ensure safety, never operate the machine with the ground wire for the power supply removed.
  7. Before inserting/removing the power plug, the power switch has to be turned OFF in advance.
  8. In time of thunder and lightning, stop your work and disconnect the power plug from the receptacle so as to ensure safety.
  9. If the machine is suddenly moved from a cold place to a warm place, dew condensation may be observed. In this case, turn ON the power to the machine after you have confirmed that there is no danger of water drops in the machine.

## 重要安全事項

此縫紉機在有的國家（設置場所）由於該國的安全規定而被禁止使用。同時，技術服務也同樣被禁止。

1. 使用此縫紉機時、必須遵守包括如下項目的基本安全措施。
2. 使用此縫紉機之前，請閱讀本使用說明書在內的所有指示文件。同時應將此使用說明書妥善保管，以便能夠隨時查閱。
3. 此縫紉機應與貴國的有關安全規定一起使用。
4. 使用此縫紉機和縫紉機動作中，所有的安全裝置應安裝到規定的位置。沒有安裝規定的安全裝置的縫紉機禁止使用。
5. 此縫紉機應由接受過培訓的操作人員來操作。
6. 使用縫紉機時，建議戴安全防護眼鏡。
7. 發生下列情況時，應立即關掉電源開關，或拔下電源線插頭。
  - 7-1 機針、彎針、分離器等穿縫和更換旋梭時。
  - 7-2 更換機針、壓腳、針板、彎針、分離器、送布牙、護針器、支架、布導向器等時。
  - 7-3 修理時。
  - 7-4 工作場所無人了或離開工作場所時。
  - 7-5 使用離合馬達時，請等待馬達完全停止之後再進行。
8. 縫紉機以及附屬裝置使用的機油、潤滑脂等液體流入眼睛或沾到皮膚上時，或被誤飲時，應立即清洗有關部份並去醫院治療。

9. 禁止用手觸摸打開了縫紉機關通電的零件或裝置。
10. 有關縫紉機的修理、改造、調整應由受過專門訓練的技術人員或專家來進行。
11. 一般的維修保養應由受過訓練的人員來進行。
12. 有關縫紉機的電氣方面的修理、維修應由有資格的電氣技術人員或專家的監督和指導下進行。
13. 修理、保養有關空氣、氣缸等壓縮空氣的零件時，應切斷空氣壓縮機供氣源後再進行。如有殘留壓縮空氣時，應放掉壓縮空氣。但，受過相當訓練的技術人員或專家進行有關調整或確認動作時除外。
14. 縫紉機的使用期間應定期進行清除。

15. 為了正常安全運轉、應安裝地線。同時應在不受高頻焊接機等強噪音源影響的環境下使用。
16. 電源插頭應用具有電氣專門知識的人來安裝。電源插頭必須連接到接地插座上。


17. 縫紉機指定用途以外不能使用。
18. 對縫紉機的改造。變更應符合安全規格，並採取有效的安全措施。另外，對於有關改造和變更，公司概不負責。

19. 本使用說明書上採用以下2個警告符號。

有損傷操作人員、維修人員的危險。

安全上需要特別加以注意的事項。

## 為了安全地使用 縫紉機的注意事項

 <p>注意</p>	<ol style="list-style-type: none"> <li>1. 為了防止人身事故的發生，打開電源時以及縫紉機運轉中，請不要把手指放到壓腳、切刀和機針的附近。</li> <li>2. 為了防止突然的起動造成人身事故，放倒縫紉機時，或卸皮帶罩和V形皮帶時，請一定關掉電源。</li> <li>3. 為了防止被卷入機器的人身事故，縫紉機運轉中請不要將手指、頭髮、衣服靠近皮帶輪、V形皮帶、馬達、切刀等驅動部分，也不要把東西放到機器上面。</li> <li>4. 為了防止人身事故的發生，請不要在卸下皮帶防護罩、眼睛防護器等安全裝置的狀態下運轉縫紉機。</li> <li>5. 為了防止人身事故的發生，放倒縫紉機或返回原來位置時，要注意不要夾住手。</li> <li>6. 為了防止觸電事故，卸下電源地線的狀態，請不要運轉縫紉機。</li> <li>7. 為了防止觸電和損壞電氣零件，拔電源的插頭時，請先關掉機器電源開關。</li> <li>8. 為了防止損壞零件造成的事故，打雷時請停止作業，並拔掉電源插頭以確保安全。</li> <li>9. 為了防止損壞零件造成的事故，從寒冷的地方急速地移動到暖和的地方時，會發生結露。待水洩完全幹後再打開電源。</li> <li>10. 為了防止損壞零件造成的事故，停電時請一定關掉電源。</li> </ol>
---	---

## CONTENTS

CAUTION BEFORE OPERATION .....	1
SPECIFICATIONS .....	1
1. MOTOR PULLEY AND V BELT .....	2
2. SETTING UP THE SEWING MACHINE .....	3
3. SETTING UP THE MACHINE HEAD .....	5
4. ATACHING THE FLAT BELT .....	6
5. INSTALLATION/REMOVAL OF BELT COVER .....	6
6. SETTING UP THE THREAD STAND .....	6
7. LUBRICATION .....	7
8. HOW TO INSTALL THE NEEDLE .....	8
9. INSTALLATION/REMOVAL OF BOBBIN CASE .....	8
10. WINDING THE BOBBIN .....	8
11. THREAD THE NEEDLE-THREAD .....	8
12. THREADING THE NEEDLE-THREAD .....	9
13. REDUCTION OF SEWING SPEED AND EMERGENCY STOP .....	9
14. MANUAL FEED HANDLE .....	10
15. HOW TO HOLD THE DESCENDING KNIFE .....	10
16. TYPES OF STITCHES .....	11
17. THREAD TENSION .....	11
18. ADJUSTING THE BUTTONHOLE LENGTH .....	13
19. REPLACING THE KNIFE .....	14
20. ADJUSTING THE BUTTONHOLE WIDTH (STITCH WIDTH AND BAR TACKING WIDTH) AND BUTTONHOLE REFERENCE POSITION .....	14
21. CHANGING THE NUMBER OF STITCHES .....	15
22. ADJUSTING THE PRESSER BAR PRESSURE .....	15
23. NEEDLE-TO-HOOK RELATION .....	15
24. ADJUSTING THE THREAD TENSION RELEASE TIMING .....	16
25. ADJUSTMENT OF THE BOBBIN PRESSER UNIT .....	16
26. ADJUSTING THE BOBBIN THREAD WINDER .....	17
27. ADJUSTMENT THE SPEED THANSMITTER .....	17
28. ADJUSTMENT OF THE NEEDLE THREAD TRIMMER .....	18
29. ADJUSTMENT OF THE BOBBIN THREAD TRIMMER .....	19
30. ADJUSTMENT OF NEEDLE THREAD TRIMMER HOLDER AND LIMITING PLATE .....	20
31. TIMING FOR DROPPING THE KNIFE .....	20
32. TROUBLE, CAUSE, AND REMEDY .....	21
33. STITCHING TROUBLES CAUSED BY OTHER REASONS .....	22



## 目 錄

運轉前的注意事項 .....	1
規格 .....	1
1. 馬達皮帶輪和 V 型皮帶 .....	2
2. 縫紉機的安裝方法 .....	3
3. 縫紉機頭的安裝 .....	5
4. 平皮帶的挂法 .....	6
5. 皮帶防護罩的安裝、拆卸 .....	6
6. 縫架的安裝 .....	6
7. 加油 .....	7
8. 機針的安裝方法 .....	8
9. 梭梭的安裝方法 .....	8
10. 底綫的繞綫方法 .....	8
11. 梭心的安裝方法 .....	8
12. 上綫穿綫方法 .....	9
13. 低速運轉和緊急停止 .....	9
14. 手動送布手柄 .....	10
15. 防止切刀掉落 .....	10
16. 縫迹形式 .....	11
17. 綫張力 .....	11
18. 縫迹長度 ( 送布量 ) 的調節 .....	13
19. 切刀的更換 .....	14
20. 鎖眼寬度 ( 擺動幅和加固縫寬度 ) 以及縫鎖基準位置的調整 .....	14
21. 針數的計數方法 .....	15
22. 壓腳的壓力調整 .....	15
23. 機針和旋梭的關係 .....	15
24. 機綫鬆弛時期的調整 .....	16
25. 梭心壓片的調整 .....	16
26. 底綫繞綫裝置的調整 .....	17
27. 減速器的調整 .....	17
28. 上綫切綫的調整 .....	18
29. 底綫切刀的調整 .....	19
30. 上綫切綫動作曲軸和限制板的調整 .....	20
31. 切刀落刀時期的調整 .....	20
32. 有關縫制的故障、原因及處理方法 .....	21
33. 縫制以外的故障、原因及處理方法 .....	22

## BEFORE OPERATION



**WARNING :**  
To avoid malfunction and damage of the machine, confirm the following.

- The normal rotating direction of the sewing machine is counterclockwise, as observed from the pulley side. Be sure not to let it rotate in a clockwise direction.
- Never operate the machine unless the sewing machine head base has been properly lubricated.
- Be sure to remove the bobbin case and needle thread from the machine when doing trial sewing.
- Be sure to remove any dust from the hook or bobbin thread cutting knife section at the end of the day, and check the amount of oil remaining.
- Be sure to return the activating pedal to the home position after the machine has started to run. If the pedal is held depressed, the sewing machine may double the seam or cause a stop-motion during sewing at high speed.
- Confirm that the voltage has been correctly set.  
Confirm that the power plug has been properly connected to the power supply.

## 運轉縫紉機前的注意事項



**注意**

為了防止機械的錯誤動作或損傷，請確認如下項目。

- 從皮帶輪側看縫紉機的旋轉方向是反時針方向。請注意不要反轉。
- 縫紉機油槽中沒有加油時，請絕對不要運轉縫紉機。
- 試運轉時，請卸下梭殼和上線。
- 作業結束之後，請清掃旋梭、切刀部的灰塵。並確認油量是否充足。
- 使用起動踏板時，縫紉機起動後請把踏板返回到原來的位置。否則會發生重縫或高速縫中停止的事故。
- 請確認電壓設定是否正確。請確認電源插頭是否正確連接。

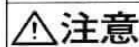
## SPECIFICATIONS/規格

	781	782	783	784
Application	Buttonholing for ordinary cloth, knit, etc.			
Sewing speed	Max. 3,600 rpm			
Buttonhole length	6.4 ~ 19.0 mm (1/4" ~ 3/4")	6.4 ~ 25.4 mm (1/4" ~ 1")	6.4 ~ 31.7 mm (1/4" ~ 1-1/4")	2.7 ~ 38.0 mm (1/2" ~ 1-1/2")
Bar-tacking width	2.5 ~ 4.0 mm (3/32" ~ 5/32")	2.5 ~ 5.0 mm (3/32" ~ 3/16")		
Needles	DP X 5 #11J ~ #14J			
Presser lift	12 mm (15/32")			
Lubricating oil	Standard Machine Lubricating Oil			

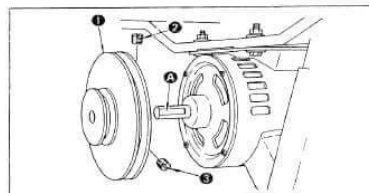
	781	782	783	784
用途	一般布料、針織布料等的鎖眼			
縫紉速度	最高每分3,600針、標準每分3,000針 (化纖時每分2,800針)			
a 孔眼長度	22mm	33mm	40mm	47mm
b 孔眼寬度	2.5 ~ 4mm	2.5 ~ 5mm	2.5 ~ 5mm	2.5 ~ 5mm
c 切刀長度 ( ) 內為英吋	6.4 ~ 19mm (1/4" ~ 3/4")	6.4 ~ 25.4mm (1/4" ~ 1")	6.4 ~ 31.7mm (1/4" ~ 1-1/4")	12.7 ~ 38mm (1/2" ~ 1-1/2")
機針	DP X 5 #11J ~ #14J			
壓腳高度	12mm			
使用機油	標準縫紉機潤滑油			

**WARNING:**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



為了防止意外的起動造成的事故，請關閉電源，確認馬達確實停止轉動後再進行。

**1. MOTOR PULLEY AND V BELT/馬達皮帶輪和V形皮帶****★ How to install motor pulley**

Place motor pulley ① into the motor shaft so that flat part A of the motor shaft aligns with first setscrew ②. Then securely tighten setscrews ② and ③.

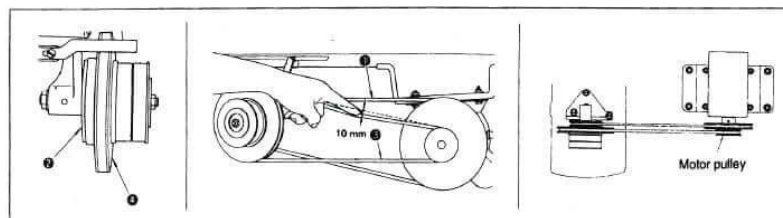
**★ 馬達皮帶的安裝**

把馬達皮帶輪①對準馬達軸的平坦部 A 和第1固定螺絲②，並插入軸中。然後擰緊固定螺絲②③。

1. 馬達使用單相或三相的4極 300 W 馬達。  
(如果使用250 W 馬達時，轉速請控制在每分3,100 轉以下。)
2. 使用 M 型 V 形皮帶。
3. 馬達皮帶輪和 V 形皮帶長度、縫紉機轉速的關係如下所示。

Sewing speed (rpm) 縫紉速度 (rpm)	Hz	Motor pulley part No.	高速 High speed V belt	低速 Low speed V belt
3,600	50	B7262-781-000A	45	42
	60	B7263-781-000A	43	41
3,300	50	B7256-781-000A	44	42
	60	B7257-781-000A	43	42
3,000	50	B7253-781-000A	44	42
	60	B7254-781-000A	42	41
2,800	50	B7258-781-000A	43	42
	60	B7259-781-000A	41	41

(inch)

**★ How to install V belt**

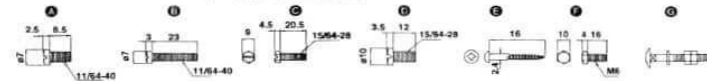
1. Mount high-speed V belt ① on accelerating pulley ② and the large diameters of the motor pulley.
2. Mount low-speed V belt ③ on low-speed pulley ④ and the small diameters of the motor pulley.
3. By moving the motor from side to side, adjust the tension of V belts ① and ③ so that they give an approx. 10 mm slack when their middle portions are pushed lightly by hand.
4. Move the motor pulley back and forth to align V belts ① and ③.

**★ V 形皮帶的掛法**

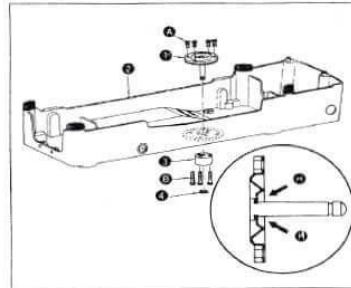
1. 把高速 V 形皮帶①掛到高速皮帶輪②和馬達皮帶輪的大直徑部上。
2. 把低速 V 形皮帶③掛到低速皮帶輪④和馬達皮帶輪的小直徑部上。
3. 用手輕輕按壓 V 形皮帶①③的中央部使垂度為10mm左右。左右移動馬達進行調整。
4. 前後移動馬達皮帶輪使 V 形皮帶①③保持在一直線上。

## 2. SETTING UP THE SEWING MACHINE/ 縫紉機的安裝方法

### 1. Screws used for set up/ 裝設時使用的螺絲



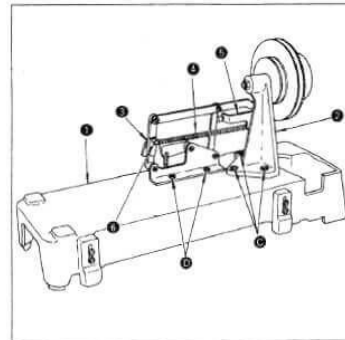
### 2. Attaching the shifter driving pin(asm.) 昇降驅動銷 (組件) 的安裝



- 1) Fully apply the supplied grease to the pin of the shifter drive pin(asm.) ① and the rubber surface on the rear(See arrows ② of figure).
  - 2) Using screw ②, fix the shifter driving pin (asm.) on machine head base ③.
  - 3) Using screw ④, fix driving pin base ⑤ on the rear surface of the machine head base so that the shifter driving pin moved up and down smoothly.
  - 4) Install snap ring ⑥ on the shifter driving pin(asm.).
- 1) 把附屬的潤滑脂塗到升降驅動銷(組件)①的銷子和背面橡膠面,然後裝起來。(參照圖箭頭②)
- 2) 把升降機驅動銷(組件)用螺絲②固定到機頭座上。
- 3) 把驅動銷套⑤用螺絲④固定到機頭座背面。這時升降機驅動銷應上下動作順暢。
- 4) 把E型環⑥安裝到升降機驅動銷上。

### 3. Installing transmitter(asm.)and shifter base(asm.)

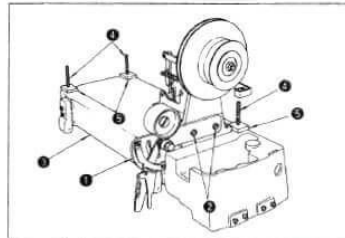
減速器 (組件) 和昇降器台 (組件) 的安裝



- 1) Place machine head base ① with its rear surface facing toward you.
  - 2) Fix transmitter (asm.) ② by screw ③.
  - 3) Fix shifter base ④ by screw ⑤.
  - 4) Attach shifter tension spring ⑥ to shifter stopper bracket (asm.) ⑦ and shifter tension spring bracket ⑧ of the shifter stopper base (asm.).
- 1) 把機頭座①轉到背面。
- 2) 把機頭座②把減速器 (組件) ③ 固定起來。
- 3) 用螺絲⑤固定好升降器 (組件) ④。
- 4) 把升降器拉簧⑥挂到減速器 (組件) 的升降器止動套⑦和升降器底座 (組件) 的彈簧鉤⑧上。

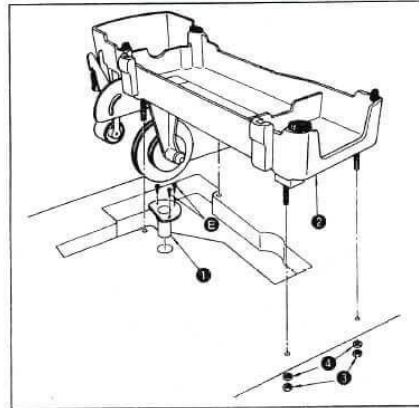
### 4. Installing the tension pulley coupling

張力皮帶輪組件的安裝



- 1) Fix tension pulley coupling ① by hexagon screw ② supplied with the reducer (asm.).
  - 2) Install stud ③ and machine head base seat felt ④ on machine head base ⑤.
  - 3) Fully apply the supplied grease to the shifter driving pin base again. Also apply the supplied grease to the end of the shifter driving pin and the head of the screw of the shifter pin bracket.
- 1) 用六角螺絲②固定到減速器 (組件) ①上。
- 2) 把③和機頭座氈墊④安裝到機頭座⑤上。
- 3) 向升降器驅動銷和驅動銷套上適量的潤滑脂塗。另外,也向升降器驅動銷前端和升降器座的螺絲頭上適量的潤滑脂塗。

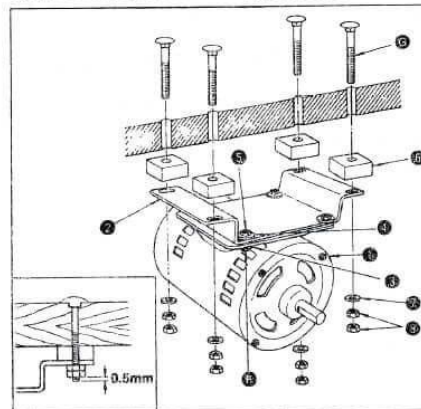
## 5. Installing the machine head base (asm.) 機頭座（組件）的安裝



- 1) Fix drain funnel ① to the drain hole (ø25) in the table by wood screw ⑤.
- 2) Placing the machine head base (asm.) ② on the table, fix it by tightening nut ③ (flat washer ④ is used) from the bottom of the table.

- 1) 把油栓①用木螺絲⑤固定到機臺的廢油孔 (Φ25) 部。
- 2) 把機頭座 (組件) ② 放到機臺上, 從機臺下側用螺母 ③ (平墊片 ④) 固定好。

## 6. Installing the motor/ 馬達的安裝



- 1) Install motor ① on motor base ② by screw ⑤ (flat washer ③, spring washer ④, and nut ⑤ are used).
- 2) Placing spacer ⑥ between the table bottom and the motor base, fix the motor base by installing bolt ⑥ (a flat washer ⑦ and nut ⑧ are used). Tighten the nuts so that the lower nut is levelled with the end of bolt ⑥ or bolt ⑥ projects by 0.5 mm.

- 1) 把馬達①固定起⑤ (平墊片③和彈簧墊④、螺母⑤) 安裝到馬達座②上。
- 2) 把墊塊⑥放到機臺下面和馬達座之間, 用安裝螺栓 ⑥ (平墊片⑦和螺母⑧) 固定好馬達座。擰緊螺母時, 請調節安裝螺栓 ⑥, 讓下側的螺母正好對準安裝螺栓 ⑥, 螺栓突出0.5mm。

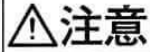


### 3. SETTING UP THE MACHINE HEAD/ 縫紉機頭的安裝

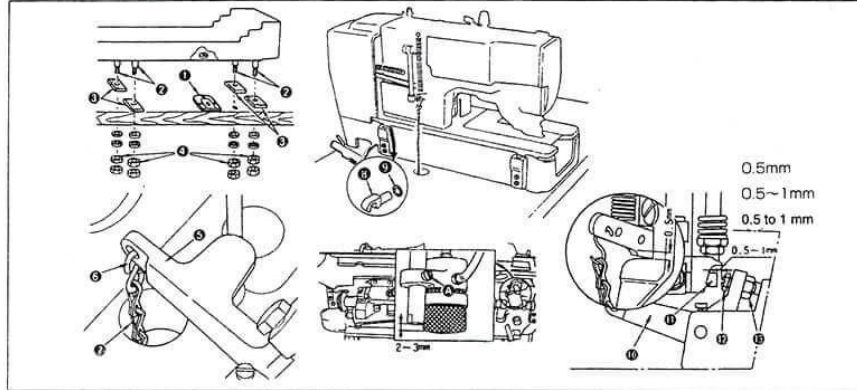


#### WARNING:

To prevent possible accidents caused by the fall of the sewing machine, perform the work by two persons or more when the machine is moved.



搬運縫紉機時，請一定要2人以上進行。



1. Attach oil-drain funnel ① to the oil-drain section (25Φ) on the table using the woodscrews.
2. Attach studs ② (both sides are threaded.) to the machine base.
3. Put machine base felt pads (4 pcs.) ③ on the four holes of the table.
4. Put the machine base on them, and tighten it from the under side of the table using nut ④ to fix it.
5. Hang S-shaped metal fitting ⑤ on starting link ⑥ attached in the rear of the machine base. Then connect it with chain ⑦, and attach it to the start pedal.
6. Putting cushion ⑧ into hinge ⑨, insert hinge ⑨ into the machine head. Then, place the machine head on the machine base.
7. Then, adjust the wire-netting of the pump suction hole so that it comes below the bed screw stud by 2 to 3 mm. (The height can be adjusted with ⑩.)
8. After placing the machine head, adjust the starting link adjusting bolt as stated below. After confirming that the sewing machine is in the stop motion state, push starting link ⑪ to the rear side. At this time, adjust with nut ⑫ so that a clearance of 0.5 to 1 mm is provided between ⑪ and ⑫. At this time, a clearance of 0.5 mm is provided between the presser barlifting lever and the starting link.

1. 排掉機台排油部 (25Φ) 的機油，用木螺絲安裝漏斗 ①。

2. 把螺栓 ② (兩端有螺絲) 安裝到機頭上。

3. 把機頭對準機臺上的4個螺絲孔，然後放上機頭座墊 (4個) ③。

4. 把機頭座放到上面，從機臺下側用螺母 ④ 擰緊固定。

5. 把S形金屬部件 ⑤ 挂到機頭座後方安裝的起動環 ⑥ 上，連接鏈條 ⑦，並安裝到起動踏板上。

6. 把墊片 ⑧ 放到紋鏈 ⑨ 裏，然後拆進縫紉機頭部。然後把縫紉機頭放到機頭座上。

7. 接著，把油杯吸入口往從機座支柱向下拉出2~3mm。(高度用A可以調整)。

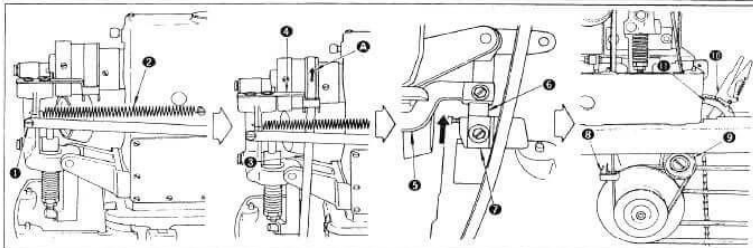
8. 安裝完機頭，按如下方法調節起動環調節螺栓。

確認了縫紉機處於分離狀態後，向後方按壓起動環10。用螺母把11和12的間隙調整為0.5~1mm。此時，壓腳提升撥杆和起動安全曲軸的間隙為0.5mm。

**WARNING:**  
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

**注意** 為了防止意外的起動造成的事故，請關掉電源，確認馬達確實停止轉動後再進行。

#### 4. ATTACHING THE FLAT BELT/ 平皮帶的掛法



1. Removing screw ①, remove spring ② from the suspension screw. (At this time, be careful not to push starting link driving rod ⑩ in the direction of arrow. When starting link driving rod ⑩ is pushed by mistake and cannot be pulled to the rear side, loosen the nut of tension post No. 1 until the starting link driving rod can be pulled to the rear side. After doing so, reset so that the thread tension disk is opened.)

2. Pass belt ③ through belt shifter ④ so that the belt rotates in the direction of arrow ④.

3. Reinstall screw ① and spring ② in their home positions.

4. Lift tripping lever ⑤ in the direction of arrow, and pass the belt between latch B ⑥ and latch A ⑦.

5. Passing belt shifter ④ located on the side of the speed transmitter, attach the belt onto tension pulley ⑧.

6. Put fixing pawl ⑩ in the second groove from the bottom of ratchet ⑨ to provide the belt with tension.

(NOTE) Some expansion or contraction in the belt caused by temperature or humidity may make it rather difficult to install the belt. However, the belt will restore its original length while in use.

1. 卸下螺絲①，從彈簧掛鉤上卸下彈簧②。(此時，請不要往箭頭方向按壓起動安全曲杆12。如果錯按了，起動安全曲杆12不能向後拉時，請擰鬆第1線張力杆螺母，鬆開第1線張力杆，讓起動安全曲杆能向後拉。然後在分離時，再次進行設定。)

2. 讓皮帶③的轉動方向和箭頭A一致，放進皮帶卡④裏再掛到皮帶輪上。

3. 把螺絲①和彈簧②安裝到原來的位置。

4. 向箭頭方向抬起鉤提升撥杆⑤，從鉤B⑥和鉤A⑦之間穿過皮帶。

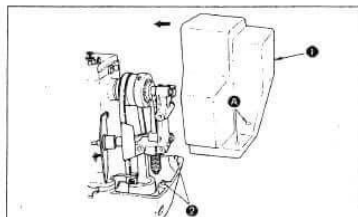
5. 把皮帶掛到減速器側的皮帶提升器⑧上，再把皮帶掛到張力輪⑨上。

6. 把固定爪放到開輪的倒數第2個齒上，張緊皮帶。

(注意) 平皮帶隨氣溫、溫度變化會產生若幹伸縮，安裝時不容易裝上。

但是，使用時會恢復到原來的長度，因此不用擔心。

#### 5. INSTALLATION/REMOVAL OF BELT COVER/ 皮帶防護罩的安裝、拆卸



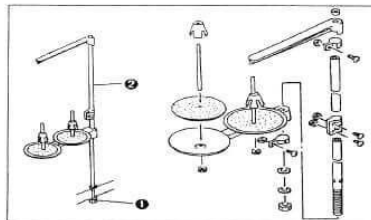
Aligning guide pin ② with hole A in belt cover ①, push the belt cover in the arrow direction until it snaps.

For removal of the belt cover, bring down the belt cover in the direction opposite to the arrow, and slide it up.

把皮帶防護罩①的孔A對準導銷②，往箭頭方向按壓皮帶防護罩，直到聽見「喀噠」的聲音。

拆卸時，把皮帶防護罩往與箭頭方向相反方向放倒，然後向上拔出。

#### 6. INSTALLING THE THREAD STAND 線架的安裝

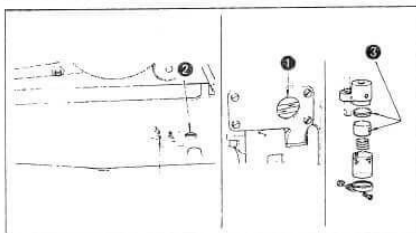


**WARNING:**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

**注意**

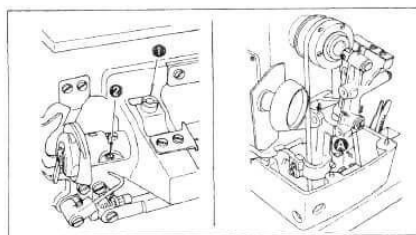
為了防止意外的起動造成事故，請關掉電源，確認馬達確實停止轉動後再進行。

**7.****LUBRICATION/ 加油****★ Before starting the machine:**

1. Fill the oil reservoir with standard machine lubricating oil up to the level indicated by "HIGH".
2. When the machine is operated after the oil reservoir has been filled with oil, the oil is seen to run through the two pipes from oil sight window ❶ as far as the sewing machine is normally lubricated. (Low speed operation permits easier observation of the lubricating oil.) If dirty oil is used, dust will accumulate on the lubrication net felt pads ❷ shown in the figure, impairing smooth flow of the oil from the machine. In this case, it is necessary to drain the oil from the machine base and fill it with fresh oil and to remove the felt pads and wash them clean.
3. If the oil gets stained, loosen drain screw ❸ to drain the dirty oil from the machine base and fill it with fresh oil.

**★縫紉機運轉之前**

1. 把標準縫紉機潤滑油加入油槽 ❶，加到 HIGH 標記的位置。
2. 加油後運轉縫紉機，潤滑正常時應能看到油窗 ❶ 裏的 2 根油管中有油在流動。  
(低速運轉時看得特別清楚。)  
油臟了之後會積存到加油網氈 ❷ 上。會堵塞油管。這時請把油槽中的油換成新的，並卸下加油網氈清洗乾淨。
3. 油臟污之後，請擰鬆放油螺絲 ❸ 排出廢油，並換新機油。

**★ Adjusting the lubrication for the sewing hook**

Adjust the volume of lubricating oil supplied to the sewing hook by turning oil adjusting screws ❶ for rough adjustment, and ❷ for fine adjustment; oil volume is reduced when turning the screws clockwise.

**★ Other lubricating points**

1. Apply one or two drops of lubricating oil to the arrowed points once a week or every other week.
2. Apply two or three drops of lubricating oil only to ❸ point when the machine is newly set up or has been out of use for a long time.

**★旋梭油量的調整**

用調節螺絲 ❶ 調節大旋梭的油量，用調節螺絲 ❷ 進行微量調節。  
把調節螺絲往裏擰油量變多。

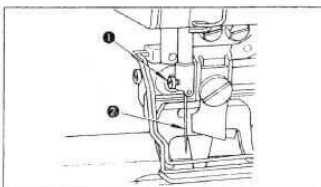
**★其他加油**

1. 每 1~2 周往箭頭所示的地方加油 1 次每次加油 1~2 滴。
2. 新縫紉機或很久沒有使用的縫紉機，在使用時，請往 A 部加油 2~3 滴機油。

**WARNING:**  
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

**注意** 為了防止意外的啟動造成的事故，請開掉電源，確認馬達確實停止轉動後再進行。

## 8. INSERTING THE NEEDLE/ 機針的安裝方法

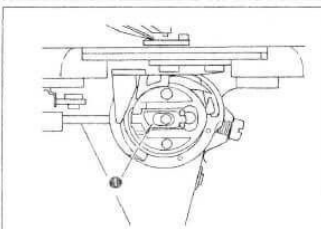


- Use a DPx5J needle.
1. Loosening needle setscrew ❷, hold needle ❶ with its recessed part facing toward the operator.
  2. Insert the needle fully into the needle clamping hole, and
  3. Securely tighten the needle setscrew.

使用 DP x 5J 機針。

1. 拆鬆機針固定螺絲 ❷，手拿機針，把機針 ❶ 凹部朝向轉到前側。
2. 然後把機針插進針孔的深處。
3. 擰緊機針固定螺絲。

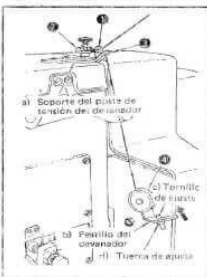
## 9. INSTALLATION/REMOVAL OF BOBBIN CASE/ 梭殼的安裝方法



1. Lift up and hold bobbin case latch lever ❶ between two fingers to remove it from the hook.  
A bobbin does not fall off the bobbin case while the latch lever is lifted up.
2. For installation of the bobbin case, push the bobbin case into the hook so that it is supported by the hook shaft, and then snap in the latch lever.

1. 掀起梭殼扣爪 ❶，取下梭殼。  
掀起扣爪拿梭殼時梭心不會掉出來。
2. 安裝時請把梭殼插到底，扣爪閉上。

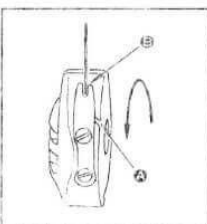
## 10. WINDING THE BOBBIN/ 底線的繞線方法



1. Fit a bobbin onto the bobbin winder shaft.
2. Take the thread from the spool and pass it through the guides in the numerical order shown in the figure, and wind the end of the thread several turns around the bobbin.
3. Push the bobbin winder trip latch ❶ in the arrow direction, and the bobbin will be wound.
4. Loosening the adjusting nut, perform adjustment by screwing in or out the adjusting screw ❷ so that the bobbin is wound about four-fifths full.
5. If the bobbin is wound unevenly, adjust the position of the bobbin winder tension bracket ❸ for proper and even winding.

1. 把梭心裝到繞線軸上。
2. 如圖所示進行穿線，并把線在梭心上繞幾圈。
3. 向前頂方向按梭心導線器 ❶，進行繞線。
4. 擰鬆調節螺母，移動調節螺絲 ❷，讓繞線到梭心的 90%。
5. 如果繞線不勻時，請把底線導線座 ❸ 移動到正確的位置。

## 11. ATTACHING THE BOBBIN/ 梭心的安裝方法

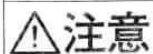


1. Hold and place a bobbin into the bobbin case so that the bobbin is wound counterclockwise.
2. Passing the thread through thread outlet ❶ of the bobbin case, pull the thread, and the thread can be drawn out from thread outlet ❷, passing under the bobbin winder tension spring.
3. Set the bobbin so that it rotates in the arrow direction when the bobbin thread is pulled.

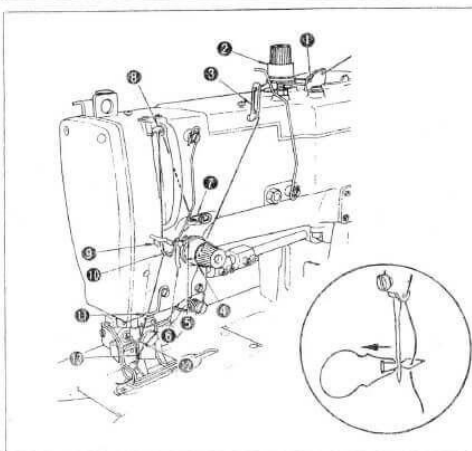
1. 手拿梭心，讓線往左繞的方向，把它放入梭殼。
  2. 把線穿過梭殼的穿線口 A，然後把線往 B 方向拉，從線張力彈簧下面的穿線口 B 拉出來。
- ✧拉底線 C，確認底線是否梭心與箭頭的方向相同。

**WARNING:**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

**注意**

為了防止意外的起動造成的事故，請關掉電源，并用腳踩踏板確認機器確實不動。

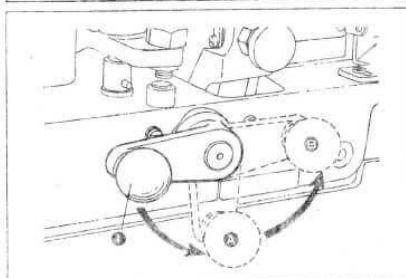
**12. THREADING THE NEEDLE-THREAD/上線的穿線方法**

1. Pass the needle thread in the order as shown in the figures.
  2. The threading can be done easily by using the needle threader supplied with the machine.
1. 如圖所示穿上線。  
2. 線穿針進，如使用附屬的穿線器穿線非常方便。

Cotton thread, spun thread.



Synthetic filament thread.

**13. REDUCTION OF SEWING SPEED AND EMERGENCY STOP/ 低速運轉和緊急停止****★ 低速運轉**

1. 放下 (A 的位置) 手動停止手柄 1。
2. 高速運轉中的縫紉機也變成低速運轉。

**★ 緊急停止**

1. 把手動停止手柄繼續轉到 B 的位置。
2. 縫紉機立即停止。

(注意) 手柄不能返回時，請輕輕施加點力量就會轉動。也變成低速運轉。

**★ Reduction of sewing speed**

1. Turn hand stop crank ① downwards to position A, and
2. the machine will be immediately slowed down.

**★ Emergency stop**

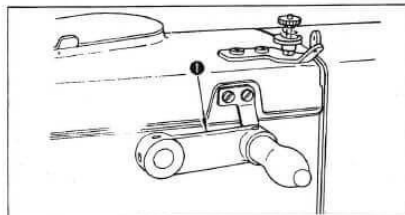
1. Turn the hand stop crank downwards to position A, and further upwards to position B and
2. the machine will stop immediately.

(NOTE) When the hand stop crank do not return, push it down.



	<b>WARNING:</b> To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.
	<b>注意</b> 為了防止意外的起動造成的事故，請關掉電源，并用腳踩踏板確認機器確實不動。

#### 14. MANUAL FEED HANDLE/ 手動送布手柄



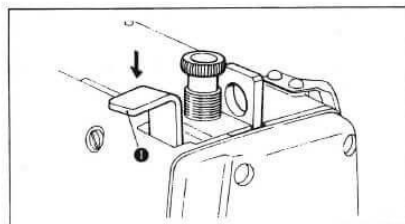
When you want to feed fabric manually after giving an emergency stop or to resume sewing from the point at which thread was broken, rotate manual feed handle ❶ to operate the cloth feeding mechanism.

**(NOTE)** Confirm that the needle does not stick in fabric before turning the manual feed handle.

緊急停止後，或中途線斷後，再次開始縫紉時，轉動手動送布手柄❶送布機構就開始動作。

(注意) 手動送布手柄應在確認了機針沒有扎到布之後再轉動。

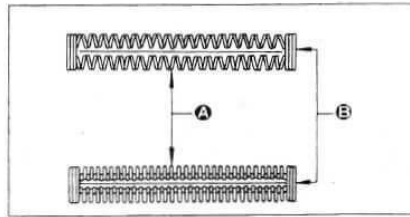
#### 15. HOW TO HOLD THE DESCEND KNIFE/ 防止切刀掉落



When you do not want to cut fabric after sewing because of thread breakage or some other reasons, keep on pressing down knife stop lever ❶ lightly until the machine stops. Then the knife will not descend.

緊上線和底線被切斷時，或不想讓切刀落下時，在縫紉機停止之前，把切刀固定撥杆❶輕輕向下按壓。切刀就不會下落。

## 16. TYPES OF STITCHES/ 縫跡形式



本縫紉機有 2 種縫迹形式。它們是 1. 此縫紉機鋸齒邊縫和 2. 直鎖眼縫。

(鋸齒邊縫)

布的表面祇有上綫，背面是底綫的鋸齒狀縫迹。

(直鎖眼縫)

增強上綫張力，上綫直綫通過，底綫左右鎖縫的縫迹。

This machine is capable of forming two different types of stitches, namely whip stitch 1 and purl stitch, 2.

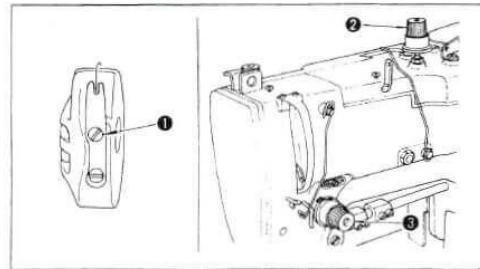
### 1) Whip stitch

The whip stitch is formed in zigzag showing the needle thread only on top of fabric, and the bobbin thread on the bottom.

### 2) Purl stitch

When applying higher tension to the needle thread to permit it to pass straight through fabric, the purl stitch is formed by the bobbin thread which is pulled over from both sides to the center line.

## 17. THREAD TENSION/ 線張力



### ★ 直鎖眼縫的綫張力

1. 用梭殼張力螺絲①把底綫張力調節為 15~20g 左右。
2. 調整第 1 綫張力器②縫制出漂亮的鋸齒邊縫同樣的縫迹。(如果背面綫頭露出的話，請調緊第 1 綫張力器。)
3. 對於平行部A的鋸齒形狀，請用第 2 綫張力器③調節。

### ★ 鋸齒邊縫的綫張力


1. 用張力螺絲①把底綫張力調節為 40~50g 左右。
2. 更換第 1 綫張力器②和第 2 綫張力器③的調節彈簧。(第 2 綫張力器要稍弱一些。)
3. 用第 2 綫張力器③和進行調節，不讓縫紉完了後脫綫。
4. 用第 1 綫張力器②調節平行部、加固縫部的縫迹。

### ★ Adjust the thread tension for purl stitch:


1. Adjust the bobbin thread tension to approx. 15 to 20g by adjusting screw ① of the bobbin case.
2. Adjust tension controller No. 1 ② for proper needle thread tension so that the bar-tack part ③ is formed by well-shaped whip stitches. If the tension is too low, bar tacking seam may form thread knots on the rear face of fabric.
3. Adjust tension controller No. 2 ③ for proper tension of the parallel side seams ④ by judging from the stitch formation.

### ★ Adjusting the thread tension for whip stitch:

1. Adjust the bobbin thread tension to approx. 40 to 50g by adjusting screw ① of the bobbin case.
2. Exchange the adjusting springs of tension controllers No. 1 ② and No. 2 ③ each other (the tension controller No. 2 will have a weak spring).
3. Adjust tension controller No. 2 ③ to prevent ravelling off at the end of a seam.
4. The stitches of the parallel sides or bar-tack can be adjusted by tension controller No. 1 ②.

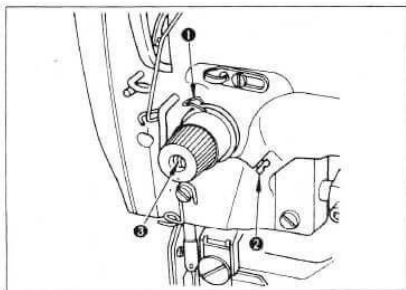


**WARNING:**  
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



**注意**

為了防止意外的起動造成的事故，請關掉電源，并用腳踩踏板確認機器確實不動。

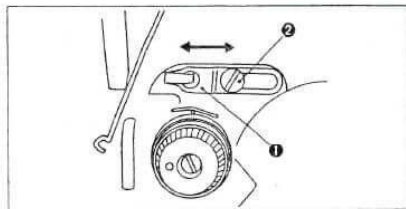


★拉綫彈簧（直鎖眼縫）

把拉綫彈簧①的拉綫量調節成8～10mm，把始動時的張力強度調節為10～20g。

變更拉綫彈簧的動作範圍時，請擰緊螺絲②，把細螺絲刀插到綫張力杆③的切縫處轉動調節。

變更拉綫彈簧的強度時，請在螺絲②擰緊的狀態下，把細螺絲刀插到綫張力杆③的切縫處轉動調節。向右轉動拉綫彈簧的強度變大，向左轉動變弱。



★挑綫量的調節

根據縫制物的厚度變更挑綫量可以得到良好的緊綫效果。

a. 縫制厚料時，擰鬆導綫器①的固定螺絲②，向左移動導綫器。

挑綫量變大。

b. 縫制薄料時，把導綫器①向右移動導綫器。

挑綫量變小。

### ★ Adjusting the thread take-up spring (for purl stitch)

The suitable range of the stroke of thread take-up spring ① is from 6 to 8 mm with a starting tension of 20 to 50g.

For adjusting the stroke of the thread take-up spring, loose screw ②, and insert a thin screwdriver into the slit of tension post ③ to turn the tension post.

To adjust the tension of the thread take-up spring, insert a thin screwdriver into the slit of tension post ③ to turn it, with screw ② tightened. The tension of the thread take-up spring increases when the tension post is turned clockwise, and decreases when turned counterclockwise.

### ★ Adjusting the thread take-up amount of the thread take-up lever

The thread take-up amount of the thread take-up lever should be adjusted in accordance with the thickness of the sewing products so as to obtain well-tightened stitches.

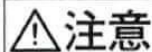
a. For heavy-weight materials, loosen setscrew ② in thread guide ①, and move the thread guide to the left. The thread take-up amount of the thread take-up lever will be increased.

b. For light-weight materials, move thread guide ① to the right.

The thread take-up amount of the thread take-up lever will be reduced.

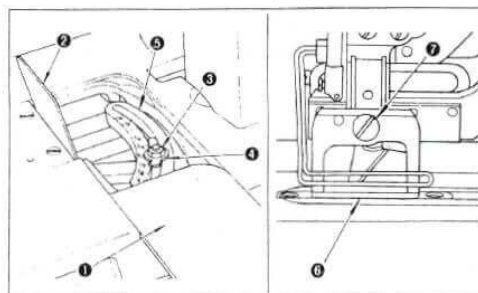
**WARNING:**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



為了防止意外的起動造成的事故，請關掉電源，并用腳踩踏板確認機器確實不動。

## 18. ADJUSTING THE BUTTONHOLE LENGTH/ 鎖縫長度（送布量）的調節



1. 拉出外罩①，就可以抬起外罩②。
2. 用附屬的扳手擰鬆螺母③，把指針④對準送布曲柄⑤上希望的刻度（與切布刀寬度相同的尺寸），然後擰緊螺母③。  
請不要把螺母③擰下來。
3. 進行試驗縫制，微調整環切刀不切加固縫部。

### ★壓腳的更換

請使用接近鈕扣眼長度的壓腳⑥。  
擰鬆壓腳固定螺絲⑦，就可以更換壓腳。


1. Pull out cover ①, and raise cover ②.
2. Loosen nut ③ by the spanner supplied with the machine. Set point ④ to a desired length on scale ⑤ (this length is the same with the knife width), and then retighten nut ③.
3. Through your trial sewing, adjust the overedging length accurately to the extent that the bar tacking seams are not cut by the knife.

### ★ Changing the work clamp check


Use work clamp check ⑧ having the size nearly the same as that of a buttonhole length.

By removing setscrew ⑦, a work clamp checks can be changed together with a work clamp check holder as a set.

Work clamp check/Work clamp check holder set Part No.	Applicable knife width
壓腳和壓腳組件的貨號	可以使用的切刀寬度
	1/4" ~ 3/4"
	1/4" ~ 1"
	1/4" ~ 1 1/4"



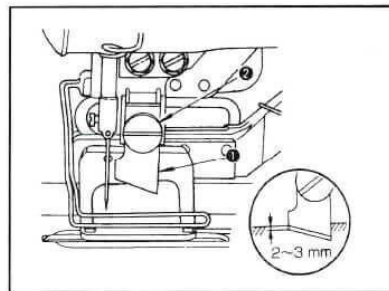
**WARNING:**  
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



**注意**

為了防止意外的起動造成的事故，請關掉電源，并用腳踩踏板確認機器確實不動。

## 19. REPLACING THE KNIFE/ 切布刀的更換



When sharpening or replacing the knife, remove it as follows:

1. Loosen setscrew ②, and remove knife ① together with the washer.
2. Attach the knife to the knife holder so that the higher end of the slanted knife blade comes down 2 to 3 mm above the surface of the throat plate when the knife is brought down to the lowest position.

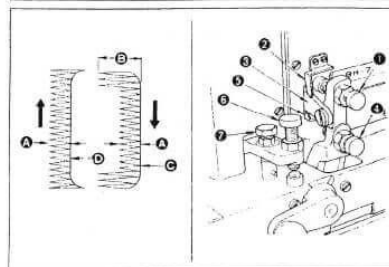
**(NOTE)** Do not forget to install the washer when retightening the setscrew.

研磨切刀或更換新切刀時，請按照如下要領進行更換。

1. 擰鬆切刀固定螺絲②，把切刀①和墊片一起卸下。
2. 安裝時，下降到切刀最低點，讓切刀和護針器上面的距離為2~3mm，擰緊切刀固定螺絲②。

(注意) 請一定放上墊片。

## 20. ADJUSTING THE BUTTONHOLE WIDTH (STITCH WIDTH AND BAR TACKING WIDTH) AND BUTTONHOLE REFERENCE POSITION 鎖眼寬度（擺送幅和加固縫寬度）以及縫鎖基準位置的調整



機針的擺動以機針擺動的右側為基準位置。調整時請按照以下要領進行。

1. 擺動寬度 A，移動螺絲①把指針②對準刻度板③上希望的刻度。實際的擺動寬度是刻度的1/2 的量（單位：mm）。
2. 加固縫寬度 B，移動螺絲④把指針⑤對準刻度板的指針⑥指示的刻度，設定為擺動寬度的2 倍。

The needle swings from right to left with the right base line established as the reference position.

Perform the adjustment as follows:

1. To adjust stitch width ②, screw in or out screw ①, and set pointer ② to a desired value on scale plate ③. The actually sewn stitch width will be the half of the set scale value (mm).
2. For adjustment of bar tacking width ⑤, screw in or out screw ④, and set pointer ⑤ to the value indicated by scale plate pointer ②, making the bar tacking width twice as large as the stitch width.
3. Adjust the position of right base line ⑥ by screwing in or out screw ⑦ so that it is kept away from the cutting line of the knife. As screw ⑦ is screwed in, the right base line moves to the left.
4. Through your trial sewing, further perform fine adjustment.
5. It is not necessary to adjust the position of left base line ⑧ since it remains unchanged when the stitch width is changed. However, the left base line should be moved to the left by screwing in screw ⑦ if it is cut by the knife.
3. 右基線 C 的位置，移動螺絲⑦，設定到切刀切不了綫的位置。擰緊螺絲⑦ 右基線向左移動。
4. 進行試驗縫，以進行上述的微調整。
5. 左基線 D 的位置，因變更擺動寬度位置也不變動，所以不需調整。但是切刀切左基綫時，擰緊螺絲⑦ 讓其向左移動。



**WARNING:**  
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

**注意** 為了防止意外的起動造成的事故，請關掉電源，并用腳踩踏板確認機器確實不動。

21. CHANGING THE NUMBER OF STITCHES/ 針數的變換方法

記号

Symbol

J	54	345	A	93	200
Ⓐ	62	300	B	100	190
K	66	285	C	105	180
Ⓚ	70	268	D	110	170
M	74	252	Ⓔ	115	160
N	79	238	F	123	152
O	83	225	Ⓕ	130	145
	88	212	H		

記号

Symbol

A	93	200
B	100	190
C	105	180
D	110	170
Ⓔ	115	160
F	123	152
Ⓕ	130	145

★更換齒輪

- 更換齒輪，可以變為表中所述的針數。
- 齒輪上均刻有 A、B、C... 的英文字母和 123、156 的數字
- 用英文字母相同的齒輪進行組合。
- 後面安裝的齒輪上刻的數字表示此時的針數。  
(○裏的為標準附屬品。其它則為另外訂購零件。)

★安裝齒輪

- 從作業人員方面看，把齒輪 1 插進前面的更換齒輪座 2 的紋縫上。
- 把齒輪 1 向箭頭方向轉動，插進後面的更換齒輪座 3 的紋縫上。

★低速凸輪位置的調整

擰緊固定螺絲 4，按下表的間隙 A 值調整低速凸輪 5 的位置。

針數	間隙 A
93 針以下	10~12mm
115 針以下	5mm
123 針	0

★Attaching the spur gears to their shafts

- Push gear 1 into the shaft so that it is securely fixed by the pin on gear bushing 2 located nearer to an operator.
- For installing gear 3 on the pin of rear gear bushing 4, push gear 3 into the shaft while turning it in the arrow direction.

★ Adjusting the low-speed cam position

Loosen setscrews 4, and adjust the position of low-speed cam 5 to set clearance A as shown below:

Number of stitches	Clearance A
93 stitches or less	10 - 12 mm
115 stitches or less	5 mm
123 stitches	0

22. ADJUSTING THE PRESSER BAR PRESSURE/ 布壓腳的壓力調整

The presser bar goes up 12 mm when the pedal is fully stepped down.

To adjust the pressure applied by the presser bar to fabric, turn presser spring regulator 1. When the pressure is not enough to prevent fabric from puckering, turn regulator 1 clockwise.

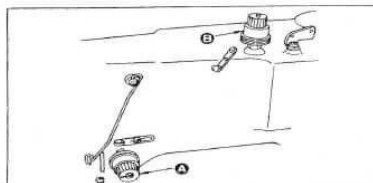
踏板踩到底時的壓腳提升量為 12mm。

布壓腳的壓力用壓腳調節螺絲 1 調節。擰緊調節螺絲後，布壓腳壓力變大，布不容易出褶。

**WARNING:**  
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

**注意** 為了防止意外的起動造成的事故，請關掉電源，并用腳踩踏板確認機器確實不動。

## 24. ADJUSTING THE THREAD TENSION RELEASE TIMING/ 機線鬆弛時期的調整



★ Thread tension release of the thread tension disk No. 1  
Thread tension disk No. 1 ① rises only when the sewing machine has entered the stop motion state and stopped. Its standard rising amount is 1 mm.

Adjust the rising amount by raising/lowering the attaching height of the thread tension disk No. 1.

★ Thread tension release of the thread tension disk No. 2  
Thread tension disk No. 2 ② is kept risen between the bartacking section and several stitches from the sewing end to the sewing start.

The rising amount can be adjusted by loosening setscrew ③ and pulling out or putting in of ④. The appropriate rising amount is 0.5 to 1 mm. The period of thread tension release at the sewing start should be adjusted so that the thread tension release finishes within 2 to 3 stitches from the sewing start. (For 123 stitches.)

To adjust the thread tension release timing, move both tension release cams ⑤ and ⑥ to the direction of arrow to advance the timing, and move them to the reverse direction to retard.

★ 第 1 線張力器的鬆弛

第 1 線張力器 B 僅在縫紉機分離停止時浮起，張力器浮起量為 1mm。用第 1 線張力杆的上下安裝高度來調節。

★ 第 2 線張力器的鬆弛

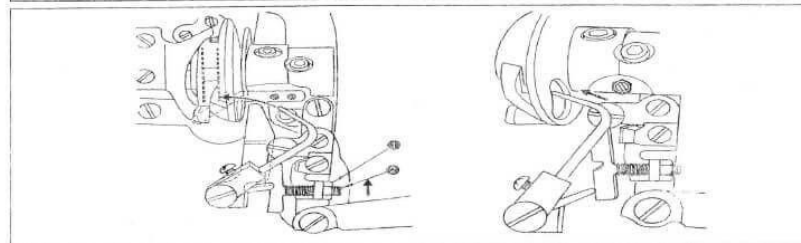
第 2 線張力器 A 在加固縫部和縫紉結束到再次開始縫的數針之間浮起。

擰鬆固定螺絲 ③ 拉出 A 來調節浮起量。浮起量為 0.5~1mm。開始縫的鬆弛期間為始縫起 2~3 針。(123 針時) 鬆弛時期，沿箭頭方向移動第 1 鬆弛凸輪 ⑤ 和第 2 鬆弛凸輪 ⑥ 動作提前，反側推遲。

**WARNING:**  
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

**注意** 為了防止意外的起動造成的事故，請關掉電源，并用腳踩踏板確認機器確實不動。

## 25. ADJUSTMENT OF THE BOBBIN PRESSER UNIT/ 梭心壓片的調整



The bobbin presser unit is a unit to prevent the bobbin idling at the time of thread trimming or stitch skipping and slip-off of the thread at the sewing start. If the bobbin thread is cut short, the pressure of the bobbin thread is too strong. Loosen adjusting nut ①, and turn adjusting screw ② counterclockwise to reduce the spring pressure. If it is turned clockwise, the pressure will increase.

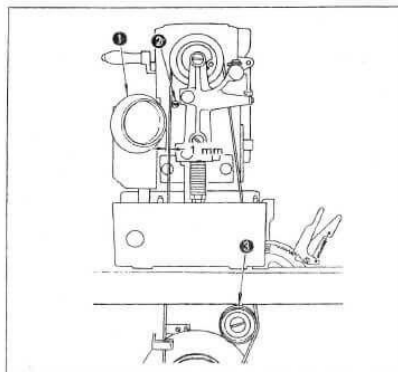
梭心壓片，是防止停縫時梭心空轉和開始縫時跳針、脫線的裝置。底線切得過短時，是因為梭心壓片的壓力過大。擰鬆調整螺母 ①，向左轉動調節螺絲 ②，彈簧壓力變弱。反向轉動壓力變強。

**WARNING:**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

**注意**

為了防止意外的起動造成的事故，請關掉電源，并用腳踩踏板確認機器確實不動。

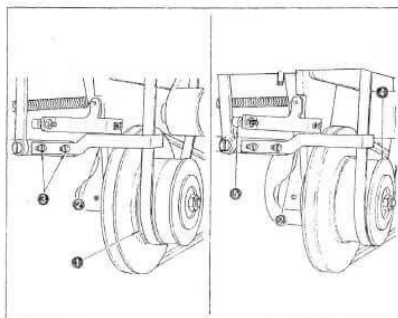
**26. ADJUSTING THE BOBBIN THREAD WINDER/ 底線繞線裝置的調整**

Loosen screw ② to make adjustment so that the clearance between bobbin thread winder pulley ① and belt ② becomes approx. 1 mm (33/64") when pulley ① is apart from the belt.

If, however, the belt touches the pulley, adjust the tension by tension pulley ③ to decrease the deflection of the belt. And if the belt still touches the pulley, increase the clearance to more than 1 mm (3/64").

底線繞線皮帶輪①分離時，皮帶輪①和皮帶之間的間隙為1mm。擰鬆螺絲②來進行調整。

但是，皮帶接觸皮帶輪時，請用張力輪③調節張力使皮帶擺動變小，如果仍然接觸時則把間隙調整為1mm以上。

**27. ADJUSTING THE SPEED TRANSMITTER/ 減速器的調整****★皮帶升起位置**

轉動手動停止手柄，設定到低速位置時，擰鬆螺絲③讓皮帶向低速皮帶輪①移動，然後移動皮帶提升器②。

**★檔塊螺絲的位置**

高速運轉狀態時，用檔塊螺絲⑤調節皮帶提升器②不讓皮帶從高速皮帶輪④上脫落下來。

**★ Adjustment of the position of the belt shifter**

When the hand stop crank is turned down to the low speed position, loosen screw ③ and allow the belt to move onto low-speed pulley ①, moving the position of belt shifter ②.

**★ Adjusting the stopper screw**

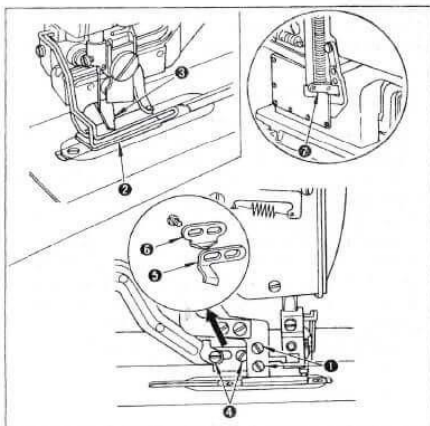
Perform adjustment by stopper screw ⑤ so that belt shifter ② does not cause the belt to come off high-speed pulley ④ during high speed operation.

**WARNING:**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.



為了防止意外的起動造成的事故，請關掉電源，并用腳踩踏板確認機器確實不動。

**28. ADJUSTMENT OF THE NEEDLE THREAD TRIMMER/ 上線切線的調整****★ Attaching the trimmer**

Loosen setscrew ①, and adjust the height of trimmer ②. Set the height of trimmer ② as low as possible, provided that it does not touch work clamp check ③, in order to minimize the length of remaining thread on the needle after trimming.

**★ Closing timing of the needle thread trimmer**

Adjust the closing timing of the needle thread trimmer so that the trimmer completely closes when it advances farthest.

To perform the adjustment, loosen screw ④, and move needle thread trimmer driving plate A ⑤ back and forth. When the needle thread trimmer driving plate is moved towards you, the closing timing is delayed with reduced amount of closing.

(NOTE) Confirm that an allowance of 0.3 to 0.5 mm is left between the blades of the trimmer when the trimmer has completely closed.

If there is no such allowance, the trimmer would interfere with the operation of the needle thread trimmer driving plate, preventing smooth movement of lifting lever ⑦.

**★ Opening timing of the needle thread trimmer**

Adjust the timing of the thread trimmer so that the trimmer begins to open gradually at a distance of approx. 2.5 to 3 mm (3/32" to 1/8") from the start.

To perform the adjustment, loosen screw ①, and move needle thread trimmer driving plate B ⑥ back and forth. As it moves towards you, the trimmer begins to open earlier.

(NOTE): Take care not to cause the already fixed needle thread trimmer driving plate A to get out of position.

**★ 切刀的安裝**

擰鬆螺絲①，下降壓腳使壓腳②和切刀③不相碰。上線可以剪短。

但是縫紉布層時，壓腳會傾斜所以把切刀的位置安得稍高一點。

**★ 切刀關閉的同步時間**

切刀伸到最末時，調整切刀關閉的同步時間。

擰鬆螺絲④，把上線切刀動作板 A ⑤ 前後移動，來調節。

往前移動關閉同步時間推遲，同時關閉量也變少。

(注意) 切刀關閉之後，請確認還應有 0.3~0.5mm 左右的富裕。

沒有關閉富裕時，切刀上線切刀動作板相接觸壓腳提升撥杆 ⑦ 變重。

**★ 切刀張開的同步時間**

調整切刀使切刀在從開始縫的 2.5 ~ 3mm 左右的地方，漸漸開始張開。

擰鬆螺絲①，前後移動上線切刀動作板 B ⑥ 來進行調節。

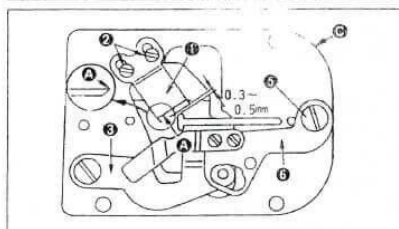
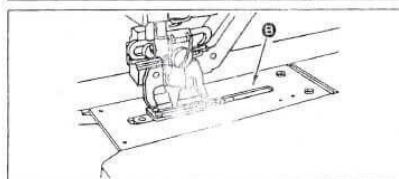
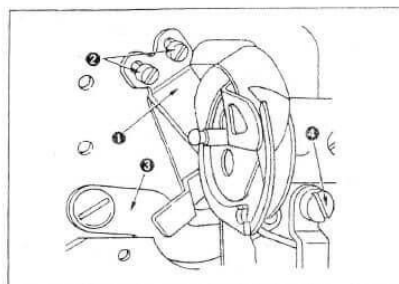
向前移動張開時間提前。

(注意) 定位的上線切刀動作板 A 一定不能傾斜。

**WARNING:**  
To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

**注意** 為了防止意外的起動造成的事故，請關掉電源，並用腳踩踏板確認機器確實不動。

## 29. ADJUSTMENT OF THE BOBBIN THREAD TRIMMER/ 底線切刀的調整



When the sharpness of the trimmer has got dull, remove counter knife ①, and sharpen the blade point ④ of the counter knife with the oilstone or the like.

**(Caution) Never buff section ④.**

1. To replace counter knife ①, tilt the sewing machine, remove the bobbin case positioning plate, and remove setscrew ②. To attach the counter knife, adjust so that a clearance of 0.3 to 0.5 mm is provided between the blade point and the needle hole in the throat plate.
2. To replace bobbin thread trimming knife ②, remove first bobbin thread trimmer connecting rod shaft ①.
3. Remove work clamp carrier ③, loosen the setscrew (4 pcs.) of throat plate base, and remove throat plate base ④.
4. Then, remove setscrew ⑤ of bobbin thread trimmer arm, and remove bobbin thread trimmer arm ⑤.
5. Finally remove the bobbin thread trimming knife from the throat plate base, and replace it.

切刀不快了，請卸下固定刀 ①，用油時磨固定刀的刀刃 A，進行修理。

(注意) A 部的刀刃一定不能弄壞。

1. 更換固定刀 ①時，放倒縫紉機頭，卸下旋梭固定螺絲 ②。安裝固定刀時，把刀間和針板孔的間距調整為 0.3 ~ 0.5 mm。
2. 卸下底線切刀連結杆軸 ①，更換底線切刀 ②。
3. 卸下送布板 B，擰鬆 4 個針板座固定螺絲，卸下針板座 C。
4. 然後卸下底線切縫曲柄螺絲 ⑤，卸下底線切縫曲柄 ⑥。
5. 最後從針板座卸下底線切刀進行更換。



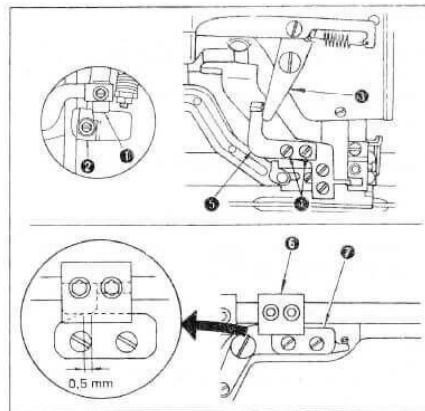
**WARNING:**

To protect against possible personal injury due to abrupt start of the machine, be sure to start the following work after turning the power off and ascertaining that the motor is at rest.

**注意**

為了防止意外的啟動造成的事故，請關掉電源，并用腳踩踏板確認機器確實不動。

### 30. ADJUSTMENT OF NEEDLE THREAD TRIMMER HOLDER AND LIMITING PLATE/ 上線切線動作曲軸和限制板的調整



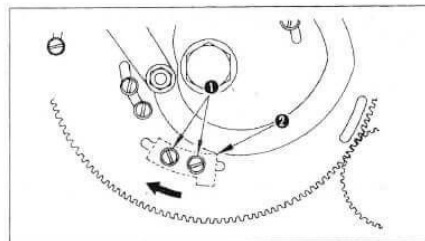
Loosen setscrew (1), and install and adjust limiting plate (1) so that it comes in contact with the blocking arm (3) at the time of slow start of the machine (when latch B (2) is engaged with latch A (2)).

Needle thread trimmer holder (3) should be installed in such manner that it engages with cam (7) by 0.5 mm (1/64") when the needle thread trimmer opens.

縫紉機低速啟動時（鉤B(2)和鉤A(2)咬合時），擰鬆固定螺絲(1)，讓限制板頂到阻擋曲軸(3)。

上線切刀張開時，讓上線切線動作曲軸(3)和動作凸輪(7)咬合0.5mm。

### 31. TIMING FOR DROPPING THE KNIFE/ 切刀落刀時期的調整



Loosen screws (1), and move knife tripping segment (2) in the direction shown by the arrow, and the knife will drop earlier. Adjust it so that the knife drops two to three stitches before the machine stops.

擰鬆固定螺絲(1)，向箭頭方向移動切刀動作凸輪(2)，切刀落刀時期提前，反則推遲。

縫紉機停止的2~3針前，讓切刀落刀。

### 32. TROUBLE, CAUSE, AND REMEDY

Trouble	Cause	Remedy	Page
1. Needle thread is broken.	(1) The tension of the tension controller No. 2 is too tight.	o Decrease the tension of the tension controller No. 2.	17
	(2) The tension or the stroke of the take-up spring is too great.	o Decrease the tension or the stroke of the take-up spring.	18
	(3) Blade point of sewing hook has burr or scratches.	o Buff the blade point of the sewing hook, or replace the sewing hook.	23
	(4) Poor timing of the sewing hook.	o Readjust the sewing hook's timing by the timing gauge.	23
	(5) The thread path has scratches.	o Buff the thread path by cloth files, etc.	—
	(6) The needle is too thin.	o Replace by a thick needle.	18
2. Thread slips out of the needle.	(1) The needle thread trimmer opens too early.	o Move back the needle thread trimmer driving plate B.	27
	(2) The needle thread trimmer opens when the work clamp check is coming down.	o Move back the needle thread trimmer driving plate B.	27
	(3) The whip stitch is not formed at the start of sewing.	o Decrease the tension of the tension controller No. 1.	17
	(4) Wrong threading.	o Perform correct threading.	15
3. Wobbling stitches are formed in the overedging seams.	(1) The tension disc No. 2 is too loose.	o Increase the tension of the tension disc No. 2.	17
	(2) The tension and stroke of the take-up spring is not enough.	o Readjust the take-up spring.	18
	(3) Bobbin thread tension is too high.	o Decrease the bobbin thread tension (15 to 20g for purl stitches).	17
4. Wobbling stitches are formed at the start of sewing.	(1) The tension disc No. 1 is too loose.	o Increase the tension of the tension disc No. 1 (15 to 30g).	17
	(2) The position of the needle thread trimmer is too high.	o Lower the trimmer as low as possible, provided it does not come in contact with the work clamp check.	27
	(3) The stroke of the take-up spring is too great.	o Decrease the stroke of the take-up spring, and increase the spring pressure.	18
5. The needle thread at the first bar tacking comes out and lumps on the bottom of cloth.	(1) The tension disc No. 1 is too loose.	o Increase the tension of the tension disc No. 1.	17
	(2) The bobbin thread tension is too high.	o Decrease the bobbin thread tension (15 to 20g).	17
6. Stitches float over cloth.	(1) Bobbin thread tension is not enough.	o Increase the bobbin thread tension.	17
	(2) Bobbin thread slips out of the thread path on the bobbin case.	o Properly thread the bobbin case.	14
7. Stitches are skipped.	(1) The work clamp check is too large for the buttonhole.	o Change the work clamp check with a smaller one.	18
	(2) The cloth is made of light-weight materials.	o Delay the timing of the needle and the sewing hook. (Lower the needle bar by approx. 0.5 mm (1/2"))	23

### 33. STITCHING TROUBLES CAUSED BY OTHER REASONS

Trouble	Cause	Remedy	Page
1. Starting pedal does not work (The work clamp arm is not lifted up fully.)	(1) Needle plate, needle plate base or bobbin thread trimmer is clogged with fibrous dust. (2) The needle thread trimmer is interfered by the work clamp check or the trimmer driving plate.	o Tilt the machine head and clean them up.  o Readjust the installation of the trimmer, or the position of the trimmer driving plate.	2 7
2. Machine does not reach the high speed even when the pedal is stepped down fully.	(1) The hand stop crank is not in the correct position. (2) The belt shifter of the speed transmitter has not changed to the high speed pulley.	o Correct the position of the hand stop crank.  o Lubricate the shifter driving pin.	1 5
3. A loud noise is produced with a stop-motion, or sewing speed does not lower at the end of sewing.	(1) Improper setting of the low speed cam for small numbers of stitches. (2) The flat belt is too loose. (3) The low speed V belt is too loose.	o Readjust the setting of the low speed cam.  o Increase the belt tension by the tension pulley. o Increase the tension of the V belt by the motor.	2 2 1 0 4
4. Stop-motion is not smooth.	(1) Stop-motion lever needs lubrication. (2) The belt shifter of the speed transmitter has not changed to the low speed pulley.	o Lubricate the stop-motion lever.  o Readjust the position of the belt shifter.	1 2 2 6
5. The machine does not lubricate.	(1) Oil level in the oil reservoir is too low. (2) Oil is not circulated.	o Fill the lubricating oil up to "HIGH" mark. o Apply oil to the oil return felts.	1 2 1 2
6. Knife is dropped during high speed rotation.	(1) Position of the knife tripping segment is not correct (2) The setting of the low speed cam for numbers of stitches is not correct.	o Adjust the position of the driving cam so that the knife is dropped down at a delayed timing. o Correct the setting of the low speed cam.	2 9 2 2
7. Knife is dropped even if the needle thread is broken.	(1) The machine is threaded incorrectly.	o Correct the threading.	1 5
8. Needle is broken.	(1) The needle is bent. (2) The needle and the hook blade touch with each other. (3) Needle thread trimmer hits the needle when opening its blades.	o Replace the needle. o Readjust the positions of the needle and the sewing hook. o Readjust the position of the trimmer. o Adjust so that the limiting plate and the blocking arm touch each other at the time of starting.	1 3 2 3 2 7 2 7

32. 有關縫制的故障、原因及處理方法

現象	原因	處理方法	頁
1. 上線斷線	①第2線張力器過強。	○減弱第2張力器的張力。	17
	②拉線彈簧的強度、移動量過大。	○減弱拉線彈簧的彈力，或縮小移動量。	18
	③旋梭尖有刺或有傷痕。	○磨平旋梭尖，或更換旋梭。	23
	④旋梭不同步。	○用同步尺，調整旋梭的同步。	23
	⑤線道有傷痕。	○用布或銼刀磨平。	—
	⑥機針過細。	○更換成粗針。	13
2. 上線脫線	①上線切線剪打開過早。	○往後移動上線切線動作板 B。	27
	②放下壓腳，上線切刀便打開。	○往後移動上線切線動作板 B。	27
	③開始縫時不能為直鎖眼縫。	○減弱第1線張力器的張力。	17
	④上線的穿線方法不對。	○正確地穿線。	15
3. 平行部縫迹不整齊	①第2線張力器過弱。	○增強第2線張力器。	17
	②挑線彈簧過強，活動範圍小。	○重新調整挑線彈簧。	18
	③底線張力過強。	○減弱底線張力。(鋸齒邊縫 15-20 g)	17
4. 始縫縫迹不整齊	①第1線張力器過弱。	○增強第1線張力器。(15-30 g)	17
	②上線切線位置過高	○降低高度，不要碰到壓腳。	27
	③挑線彈簧活動範圍過大。	○縮小挑線彈簧的活動範圍，增大彈簧壓力。	18
5. 第1加固縫部 上線從布的下面堆線	①第1線張力器過弱。	○增強第1線張力器。	17
	②底線張力過強。	○減弱底線張力。(15-20 g)	17
6. 縫迹鼓起	①底線張力過弱。	○加強底線張力。	17
	②底線從梭殼脫出。	○正確地穿線。	14
7. 跳線	①壓腳大，鈕釦孔小。	○換成小壓腳。	19
	②布料薄。	○推遲機針和旋梭的同步時間。 (把針杆約下降0.5mm左右)	23

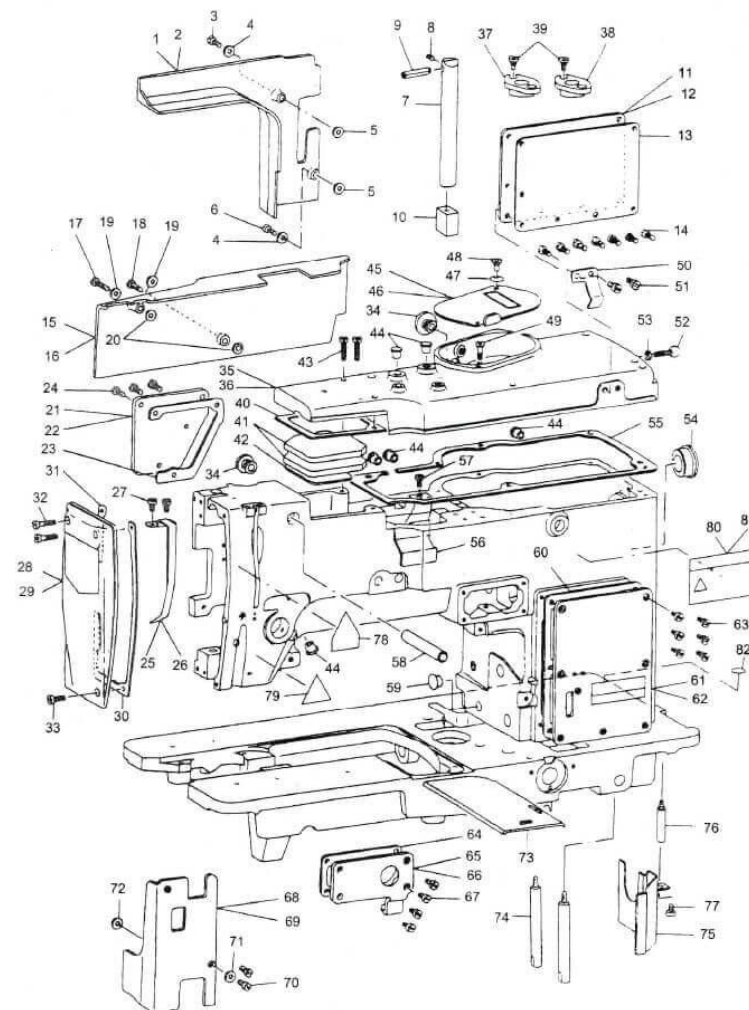
3.3. 縫制以外的故障、原因及處理方法

現象	原因	處理方法	頁
1. 起動踏板不動。 (壓腳提升杆沒有 返回到上邊。)	①針板、針板座、底線切線剪部 沾有線頭。 ②上線切刀與壓腳或上線切刀動 作板相碰。	○放倒機頭進行清掃。 ○重新安裝切刀，或重新調整上線切刀動作 板的位置。	27
2. 起動踏板踩到底 也不高速運轉。 (通用馬達)	①手動停止手柄的方向朝下。 ②減速器的皮帶提升器不能移動 到高速皮帶輪側。	○把手動停止手柄轉到前方。 ○往提升驅動銷上加油。	15
3. 分離音過大。 或縫紉結束後 不減速。 (通用馬達)	①在針數少時的低速凸輪位置。 ②平皮帶過鬆。 ③低速V形皮帶過鬆。	○調整低速凸輪位置，使低速區間變長。 ○用張力皮帶輪加強張力。 ○移動馬達皮帶輪的位置，張緊V形皮帶。	22 40 4
4. 分離不良	①分離架部沒有油了。 ②減速器的皮帶提升器不能移動 到高速皮帶輪側。	○往分離架部加油。 ○再調整皮帶提升器的位置。	12 26
5. 供油	①機頭油槽中的油不足。 ②油不循環流動。	○把油加至 HIGH 標記。 ○往循環流動氈墊上加油。	12 12
6. 高速時切刀不 落下。	①切刀動作凸輪位置不對。 ②針數少時的低速凸輪位置不正 確。	○調整切刀落到時間。(變晚) ○調整低速凸輪位置。(變早)	29 22
7. 上線斷線切刀 落下。	①在上線的穿線方法不對。	○重新正確地穿線。	15
8. 斷針	①機針彎了。 ②機針和梭尖相碰。 ③上線切線剪張開時，與機針相 碰。	○更換機針。 ○調整機針和梭梭的位置。 ○調整切刀位置。 ○讓限制板與阻擋曲軸的起動時相碰。	13 23 27 27



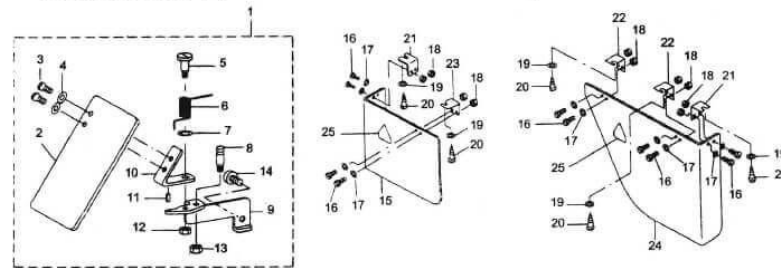
# 1. FRAME & MISCELLANEOUS COVER COMPONENTS(1)

机头及外罩部件(1)



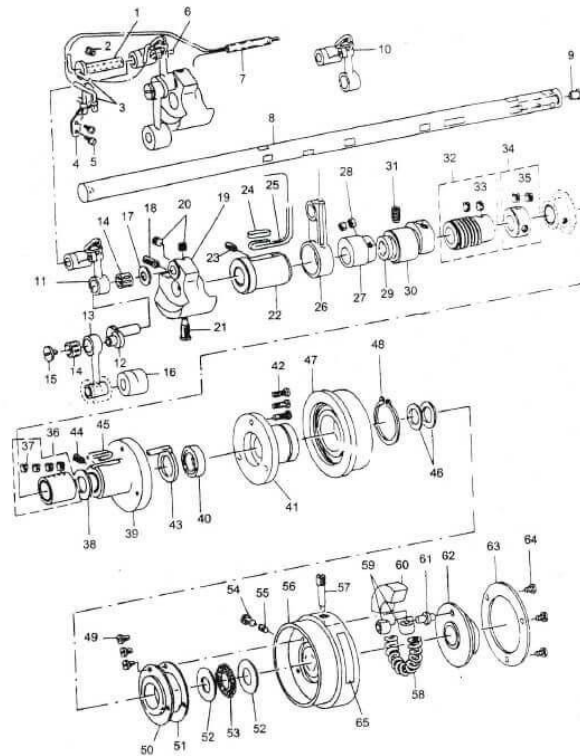
## 2. FRAME & MISCELLANEOUS COVER COMPONENTS(2)

机头及外罩部件 (2)

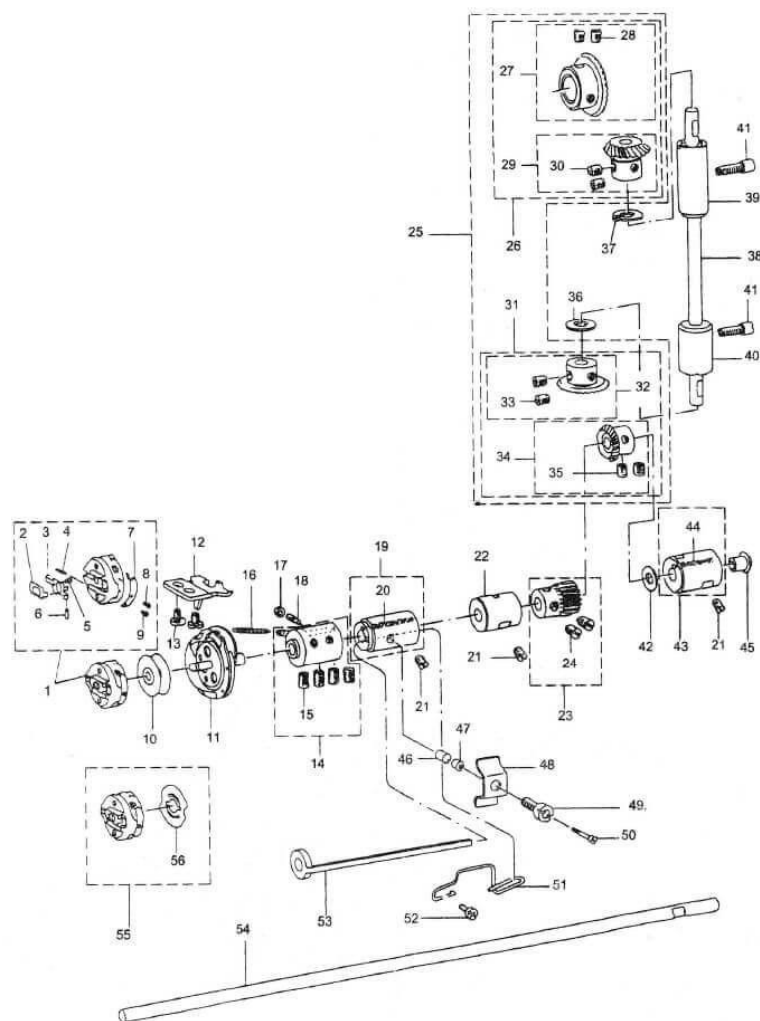


## 3. MAIN SHAFT COMPONENTS

上轴部件

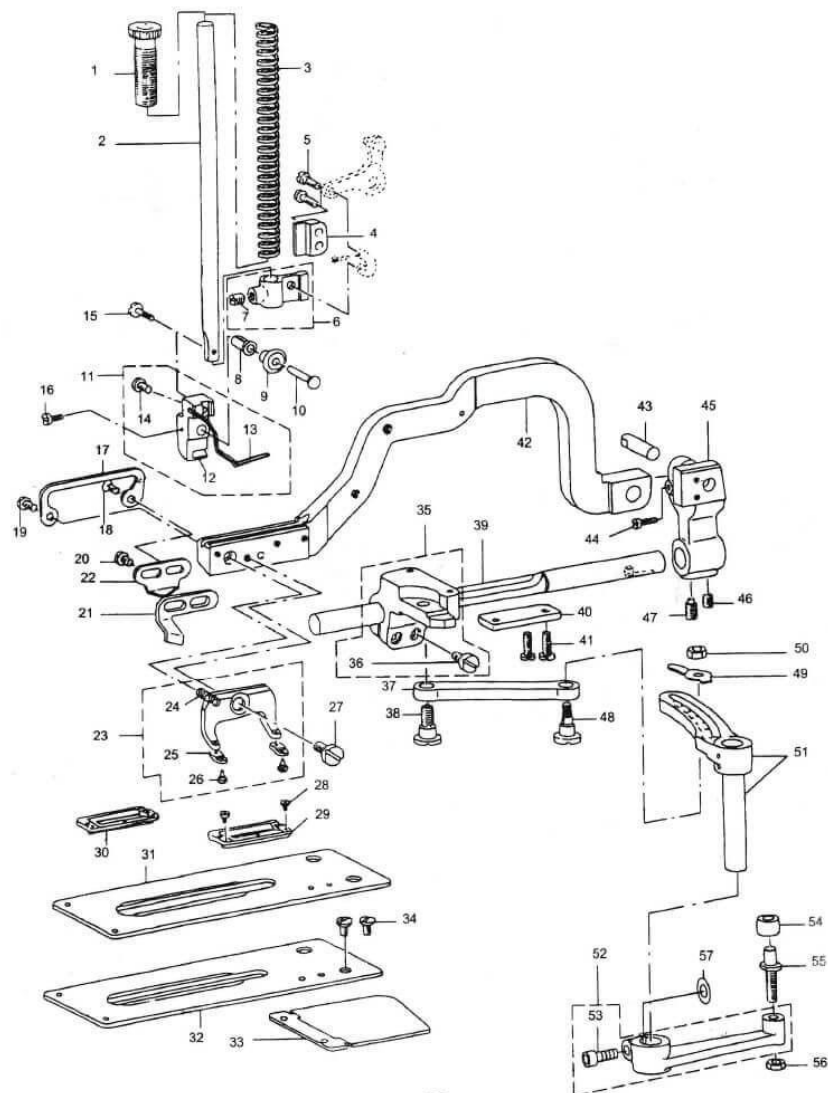


#### 4. HOOK DRIVING SHAFT COMPONENTS 下轴部件



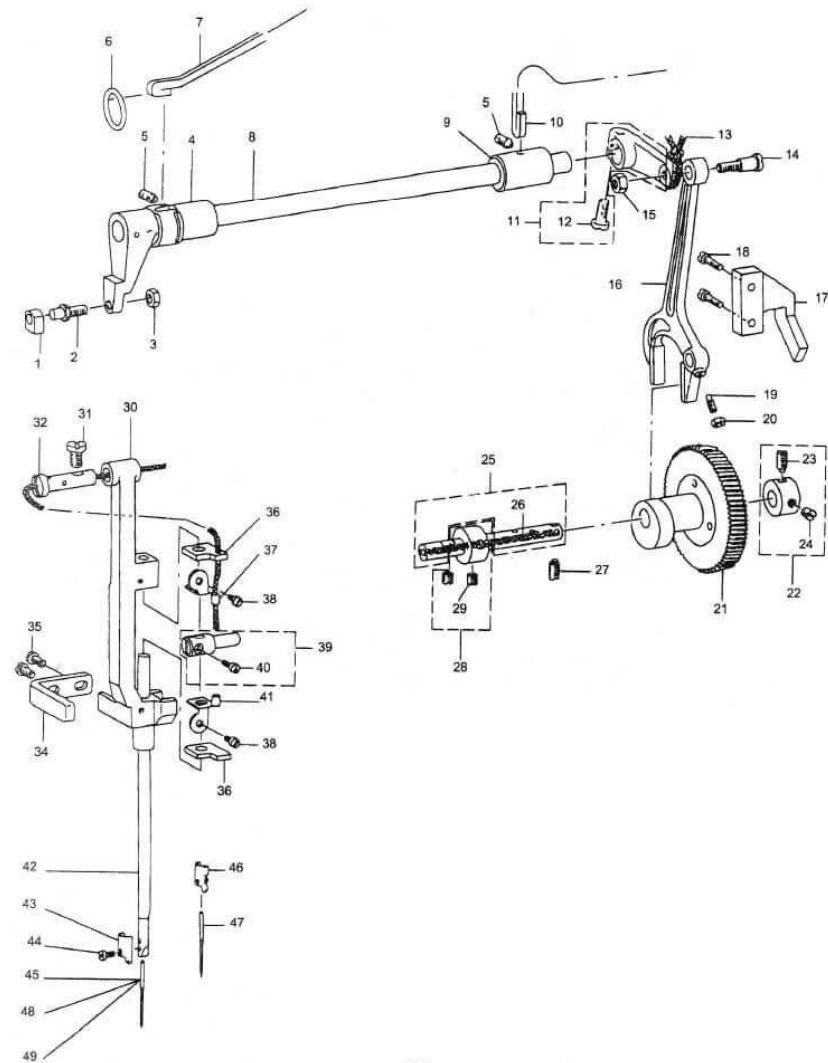
## 5. PRESSER BAR, WORK CLAMP CARRIER COMPONENTS

压料、送料部件



## 6. NEEDLE BAR FRAME COMPONENTS

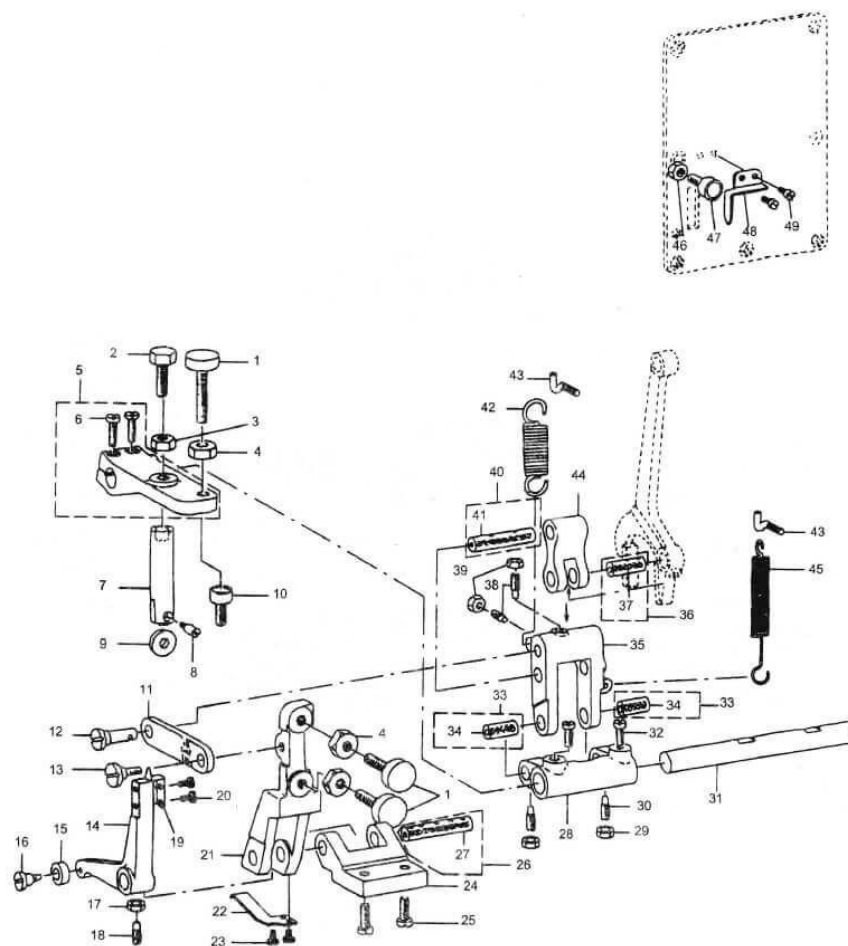
针杆架部件



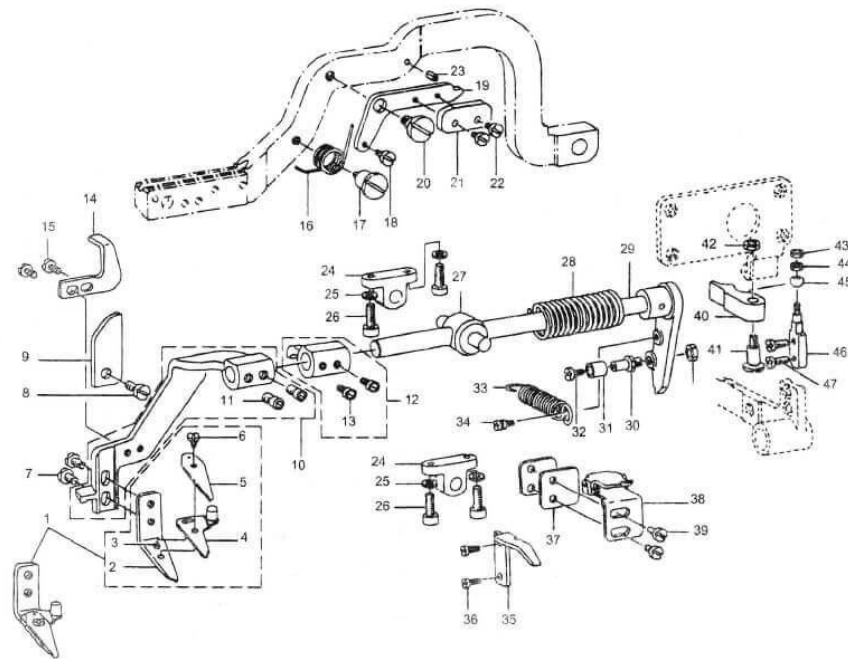


## 7. OVEREDGING WIDTH ADJUSTING COMPONENTS

包边宽度调节部件

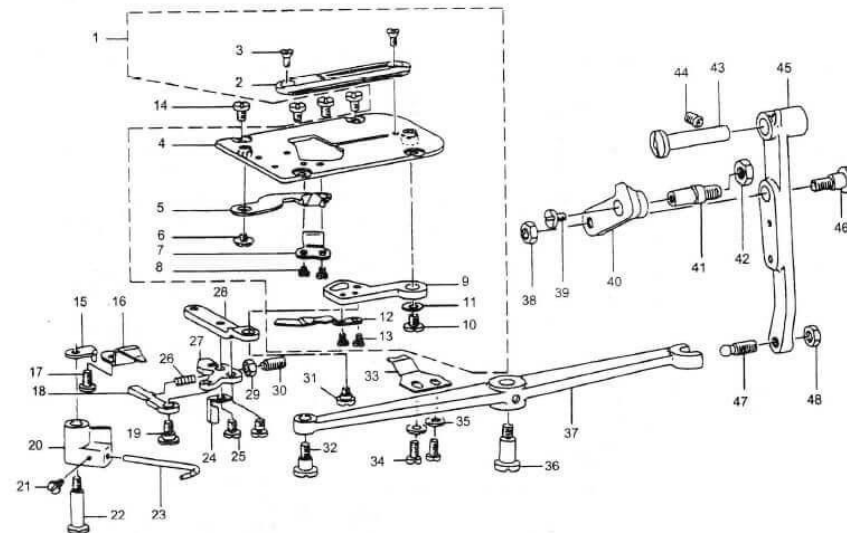


### 8. NEEDLE THREAD TRIMMER COMPONENTS 针线整修器部件

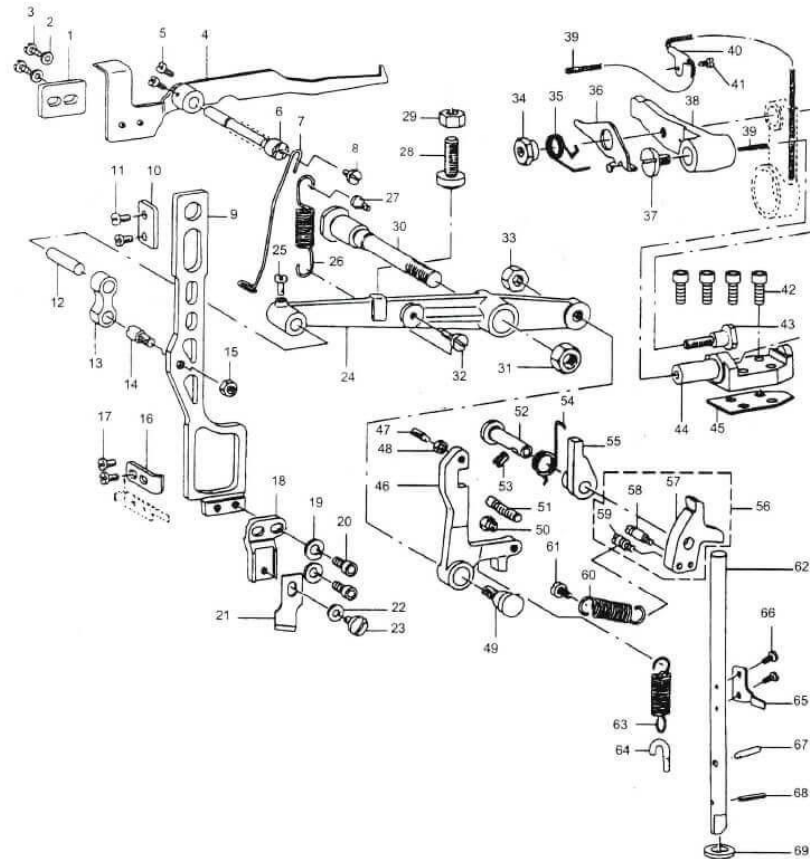


## 9. BOBBIN THREAD TRIMMER COMPONENTS

剪底线刀部件

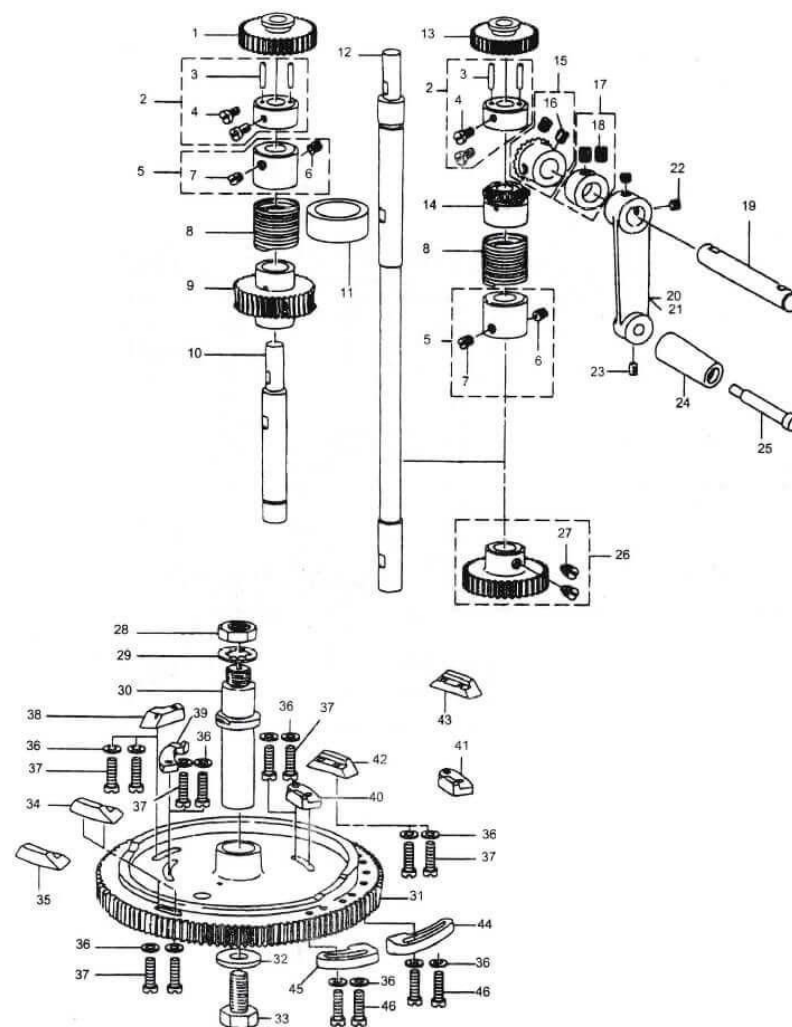


# 10. KNIFE BAR COMPONENTS 刀杆部件



## 11. FEED CAM & TRIPPING SEGMENT COMPONENTS

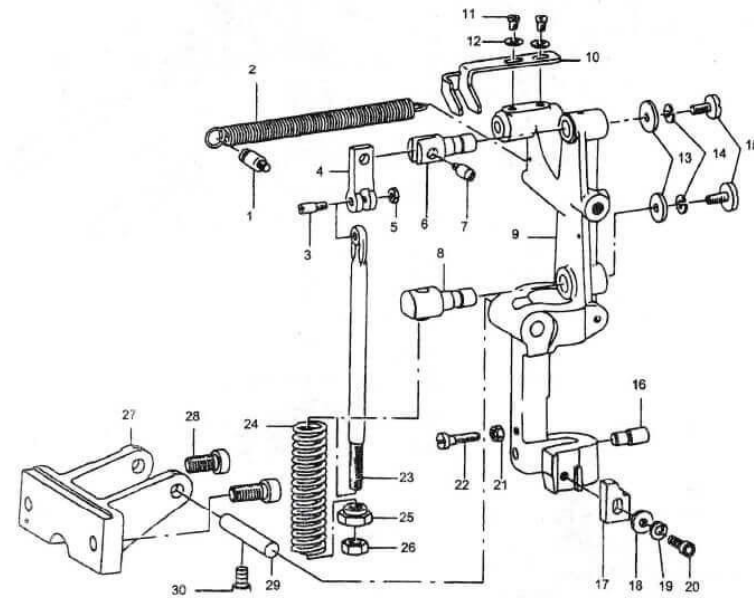
送料凸轮、离合块部件



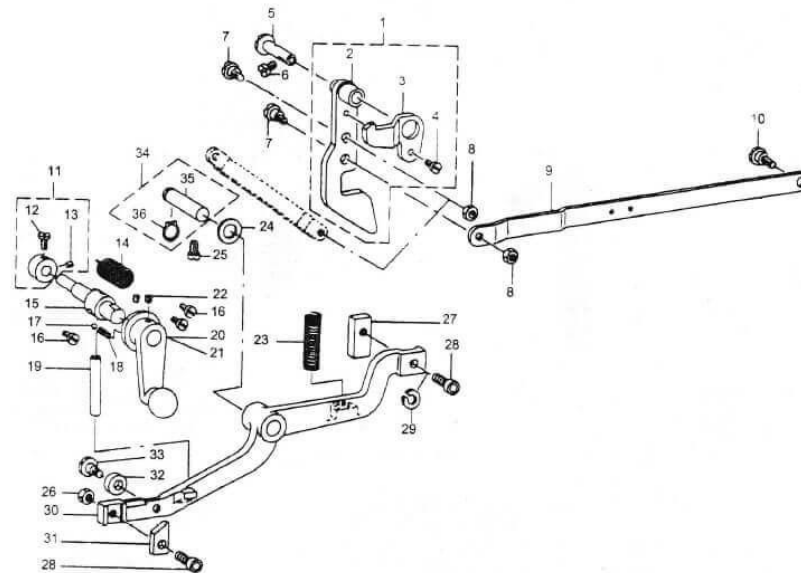


## 12. STOP-MOTION COMPONENTS

停车部件

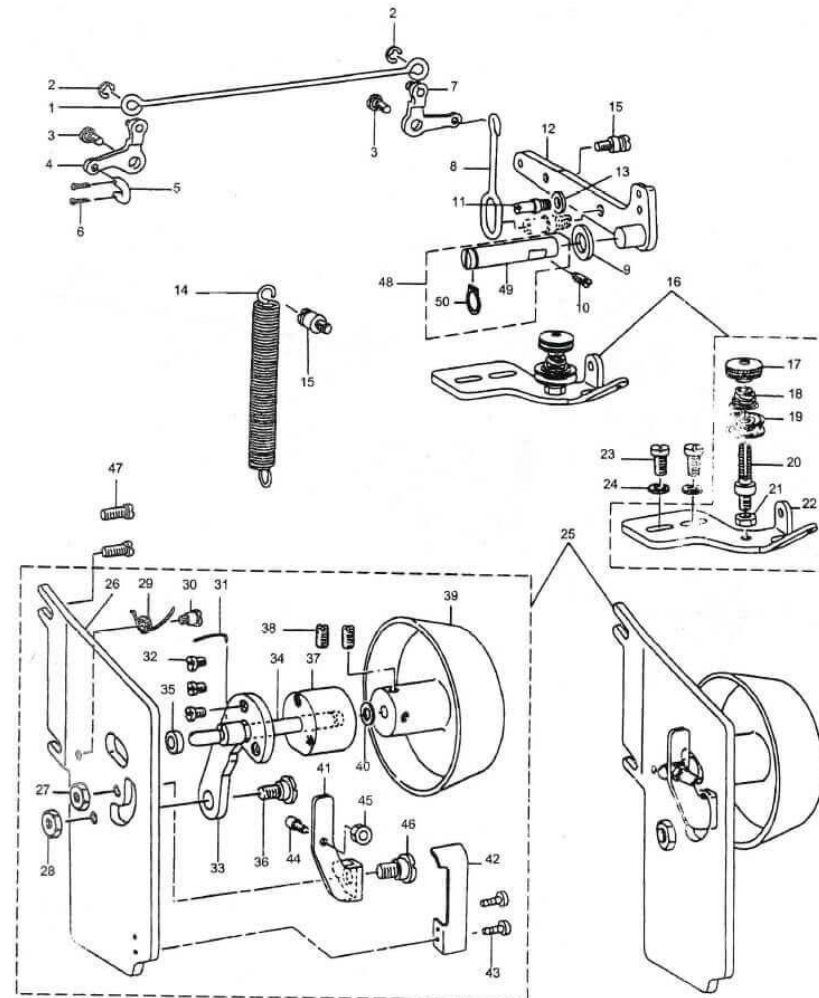


**13. TRIPPING LEVER COMPONENTS**  
离合杆部件



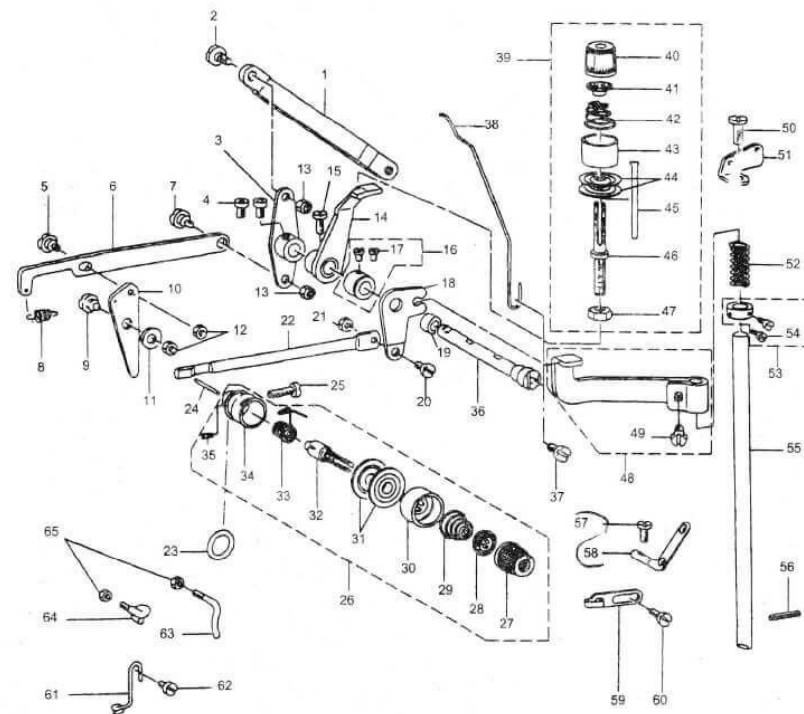
#### 14. LIFTING LEVER & BOBBIN WINDER COMPONENTS

压脚扳手、绕线刀部件



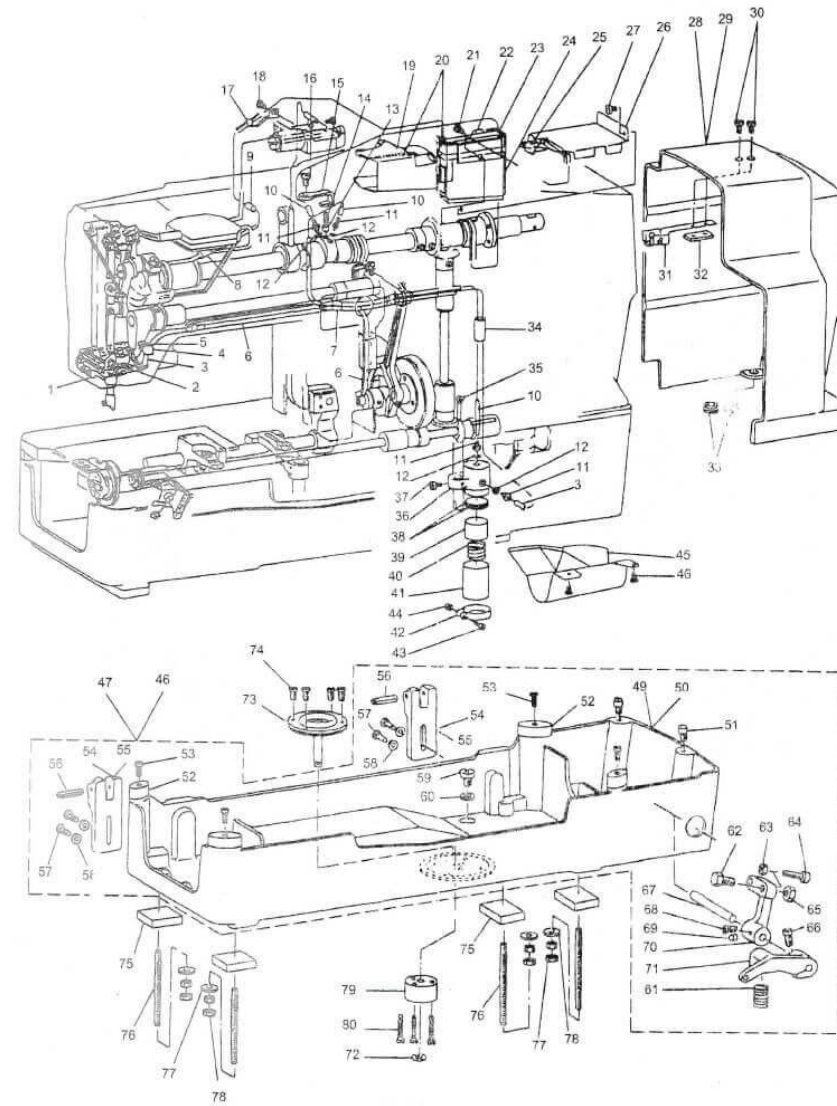
## 15. THREAD TENSION COMPONENTS

夹线板部件



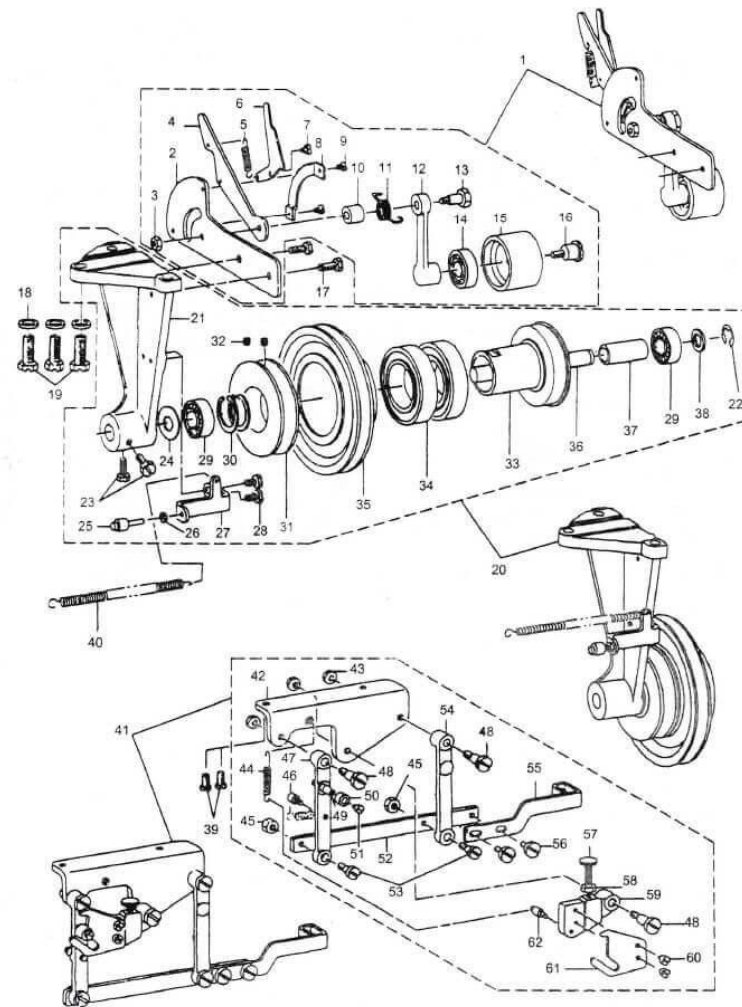
## 16. LUBRICATION MECHANISM COMPONENTS

润滑机构部件

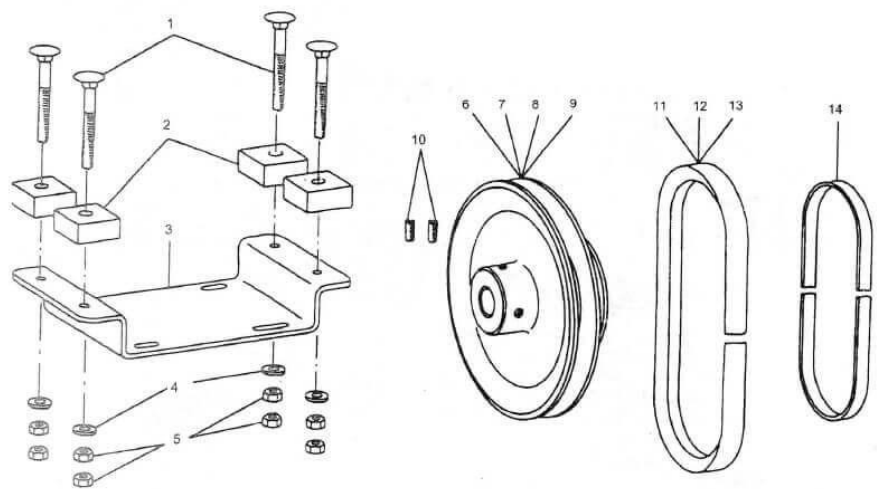




# 17. SPEED TRANSMITTER COMPONENTS 减速机构部件

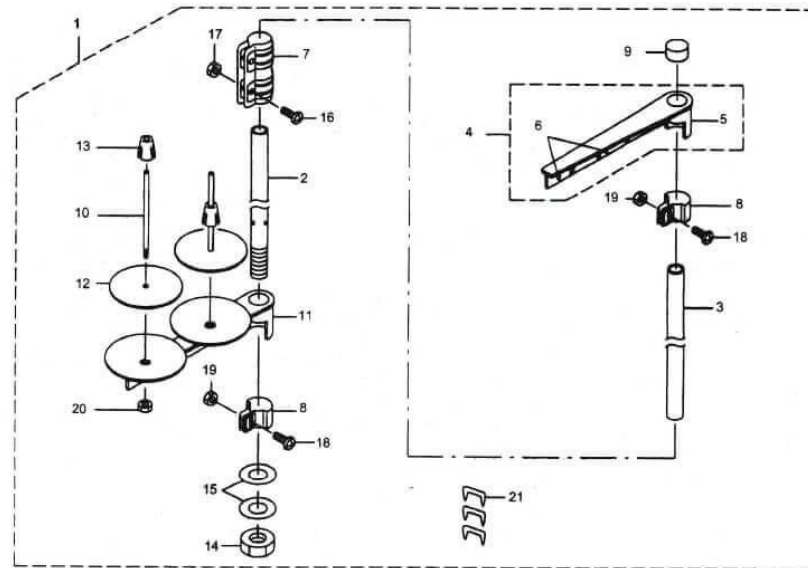


18. MOTOR PULLEY COMPONENTS  
电动机带轮部件




## 19. THREAD STAND COMPONENTS (SPECIAL ORDER PARTS)

线架部件



### 安全指示

- 1) 在安装或使用本产品前，使用者必须详细阅读本操作手册。
- 2) 本产品须由受过正确训练的人员来安装或操作。安装作业时必须关闭所有电源，切记不可带电操作。
- 3) 所有标有  符号的指示，必须特别注意并按照说明书上的执行，以免造成不必要的损害。
- 4) 为安全起见，禁止以延长线作电源座供应二项以上的电器产品使用。
- 5) 在连接电源线时，必须确定工作电压低于 AC 250V，且符合本产品标识中规定的额定电压值。  
※注意：电控箱电源规格如为 AC220V 时，请勿插接至 AC380V 的电源插座上，否则将出现异常且电机无法动作。此时请立即关闭电源开关，重新检查电源。持续供应 380V 超过五分钟以上，将可能烧损电控箱内器件，而危及人身安全。
- 6) 请不要在日光直接照射的场所、室外及室温 45℃ 以上或 0℃ 以下的场所操作。
- 7) 请不要在暖气（电热器）旁、有露水的场所及在相对湿度 10% 以下或 90% 以上的场所操作。
- 8) 请不要在灰尘多的场所、具有腐蚀性物质的场所及有挥发性气体的场所操作。
- 9) 请注意所有电源线、信号线、接地线等接线时不要受压或过度扭曲，以确保使用安全。
- 10) 电源线的接地端须以适当大小的导线和接头连接到生产工厂的系统地线，此连接必须被永久固定。
- 11) 所有可转动的部分，必须以所提供的零件加以防范露出。
- 12) 在安装完成第一次开机后，先关闭切线功能以低速操作缝绉机并检查转动方向是否正确、运转是否稳定。
- 13) 在进行以下操作前，请先关闭所有电源：
  1. 在控制箱与马达上插拔任何连接插头时。
  2. 穿针线时。
  3. 翻抬缝绉机机头时。
  4. 修理或做任何机械上的调整时。
  5. 机器闲置不用时。
- 14) 修理或高层次的保养工作，仅能由受过训练的机电技师来执行。  
所有维修用的零件，须由本公司提供认可，方可使用。
- 15) 使用本产品请远离高频电磁波和电波发射器等，以免所产生的电磁波干扰伺服驱动装置而发生误动作。
- 16) 请不要以不当物体来敲击或撞击本产品及各装置。

#### 保修期限

本产品保修期限为购买日期起一年内或出厂月份起两年内。

#### 保修内容

本产品在正常情况使用且无人为操作失误的前提下，于保修期间无偿为客户维修使能正常操作。







但以下情况于保修期间将收取维修费用：

1. 不当使用包括误接高压电源、将产品移做其它用途、自行拆卸、维修、更改、或不依规格范围使用、进水进油及插入异物于本产品。
2. 火灾、地震、闪电、风灾、水灾、盐蚀、潮湿、异常电压及其它天灾或不当场所所造成的损害。
3. 客户购买后摔落本产品，或客户自行运输（或托付运输公司）造成的损害。

\* 本产品在生产及测试上皆尽最大努力和严格控制使其达到高品质及高稳定的标准，但外部的电磁或静电干扰或不稳定的供应电源，仍可能对本产品造成影响或损害，因此操作场所的接地系统一定要确实做好，并建议用户安装故障安全防护装置（如漏电保护器）

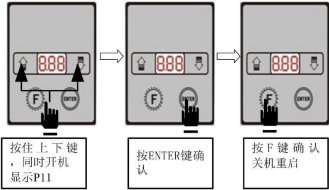
1：操作说明

1.1：按键说明

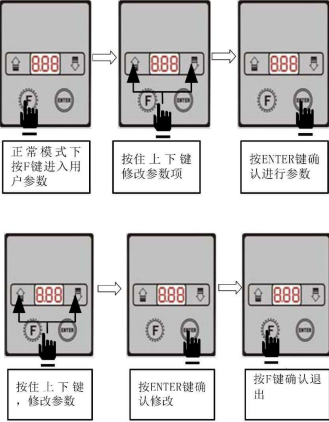
参数查看保存键		对所选参数号内容进行查看和保存：选择好参数号后按此键可以进行查看和修改操作，修改参数值后按此键则退出并保存参数
进入参数区功能键		1. 一般开机模式下按  键进入用户参数模式 2. 在关机状态，按住  键开机进入技术员参数模式
上调节键		1、参数选择区内当参数递增键。 2、参数内容区内当设定数值递增键。
下调节键		1、参数选择区内当参数递减键。 2、参数内容区内当设定数值递减键。

1.2 操作说明

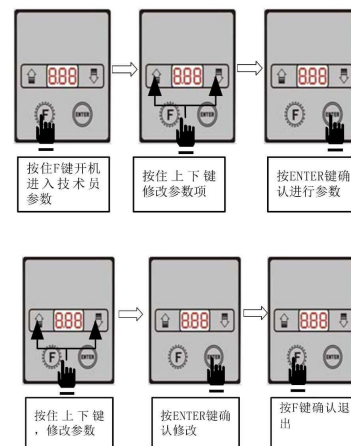
1.2.1：恢复出厂设置



1.2.2：进入用户模式及修改保存



1.2.3：进入技术员模式及修改保存



#### 1.2.4 显示字体与实际字体对照表

数字字体部分：

实际数值	0	1	2	3	4	5	6	7	8	9
液晶显示	0	1	2	3	4	5	6	7	8	9

英文字体部分

英文字母	A	B	C	D	E	F	G	H	I	J
液晶显示	A	b	C	d	e	F	G	H	I	J
英文字母	K	L	M	N	O	P	Q	R	S	T
液晶显示	k	L	M	N	O	P	Q	R	S	T
英文字母	U	V	W	X	Y	Z				
液晶显示	U	V	W	X	Y	Z				

## 2：用户参数&技术员参数

### 2.1 用户参数

参数项目内 容	中文说明	范围	初始值	内容值名称说明与备注
P01	最高转速（spm）	10~360	300	车缝时的最高转速设定（实际速度=显示数*10）
P02	起缝速度（spm）	10~360	130	前缝（起缝）时的速度设定（实际速度=显示数*10）



参数项目内容	中文说明	范围	初始值	内容值名称说明与备注
P03	切刀动作速度	10- 100	55	切刀时机头的转速（实际速度=显示数*10）
P04	第一针限速	10~360	80	（实际速度=显示数*10）
P05	第二针限速	10~360	80	（实际速度=显示数*10）
P06	第三针限速	10~360	200	（实际速度=显示数*10）
P07	第四针限速	10~360	250	（实际速度=显示数*10）
P08	第五针限速	10~360	200	（实际速度=显示数*10）
P10	切刀动作针数	0 - 010	3	切刀时所需的针数，配合切刀的速度

### 2.2 技术员参数

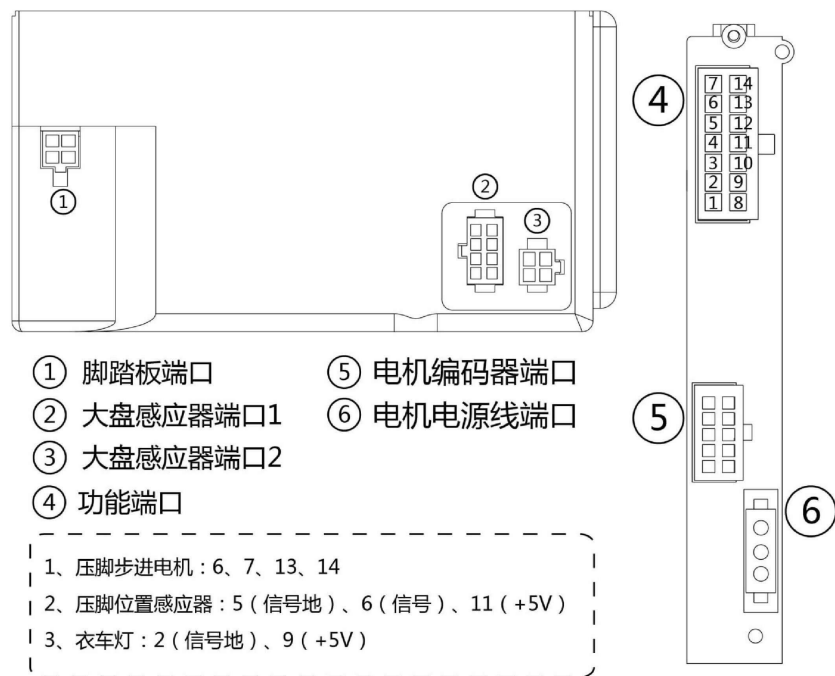
参数项目内容	中文说明	范围	初始值	内容值名称说明与备注
P13	压脚下放时间(ms)	10 - 990	560	踩下时延迟启动时间，以配合压脚下放之确认
P16	保护针数	1 - 990	400	在大盘未感应到情况下，机针要动作多少针进行保护
P17	开机自动找上定位	0 - 1	1	1：开启电源后，自动找到上定位信号后停止 0：无作用
P18	上定位调整	40 - 180	65	上定位调整，数值减少时会提前停针，数值增加时会延迟停针
P19	测试工作时间	1 - 250	20	C 项测试中，设置导通时间
P20	测试停止时间	1 - 250	20	C 项测试中，设置停车时间
P21	A 项测试	0 - 1	0	A 项测试选项，设定后将按 P01 速度进行连续运转测试
P22	B 项测试	0 - 1	0	B 项测试选项，设定后将按 P01 测试速度进行全功能性测试
P23	C 项测试	0 - 1	0	C 项测试选项，设定后将按 P01 的速度进行无定位运行
P24	机头保护开关	0 - 1	1	0：关闭机头保护功能 1：打开机头保护功能
P30	压脚反抬高度	0-400	50	
P31	中途反踏停车选择	0-1	0	0：中途反踏会停车 1：中途反踏不会停车

### 3：错误代码表


错误码	内容	对策
E01	1) 电源 ON 时, 主电压检测过高 2) 供应电源电压过高时	关闭系统电源, 检测供应电源电压是否正确。(或是否超过使用规定的额定电压)。 若正确, 请更换控制箱并通知厂方。
E03	主控板 CPU 与步进驱动板 CPU 传输通信异常	关闭系统电源, 检查控制箱内部连接线是否松动或脱落, 将其恢复正常后重启系统。若仍不能正常工作, 请更换控制箱并通知厂方。
E06	压脚步进电机没到正确位置	检查压脚步进电机位置是否正常, 感应器是否有损坏
E07	a)马达插头配线接触不良导致不转 b)车头机构死锁或马达皮带异物卷入卡死。 c)加工物过厚, 马达扭力不足无法贯穿。 d 模块驱动出力异常	转动机头电机手轮观察是否卡住。如卡住则先排除机头机械故障。 如转动正常, 检查电机编码器接头和电机电源线接头是否松动。如有松动请修正。 如接触良好, 检查供应电源电压是否异常或转速设置过高。如有请调整。 如正常, 请更换控制箱并通知厂方。
E09 E11	定位信号异常	关闭系统电源, 检查电机编码器接口是否松动或脱落, 将其恢复正常后重启系统。若仍不能正常工作, 请更换电机并通知厂方。
E14	编码器信号异常	关闭系统电源, 检查电机编码器接口是否松动或脱落, 将其恢复正常后重启系统。若仍不能正常工作, 请更换电机并通知厂方。
E15	电力模块不正常过流保护	关闭系统电源, 再重新开启。若仍不能正常工作, 请更换控制箱并通知厂方。
E17	机头保护开关没到正确位置	关闭系统电源, 检查机头是否掀开, 控制箱内滚珠开关是否移位或损坏。
E18	机械锁感应器没到正确位置	检查机械锁位置是否正常, 感应器是否有损坏
E19	大盘感应器没到正确位置	检查大盘位置是否正常, 感应器是否有损坏

4：端口示意图

4.1：各个端口名称：







### Safety instructions

- 1H Before installing or using this product, the user must read this operation manual in detail.
- 2H This product must be installed or operated by properly trained personnel. During installation, all power must be turned off, and it is not allowed to operate with electricity.
- 3H All indications marked with the  symbol, Special attention must be paid and carried out in accordance with the instructions so as not to cause unnecessary damage.
- 4H For the sake of safety, it is forbidden to use extension cord as power base to supply more than two electrical products.
- 5H When connecting the power line, make sure that the working voltage is lower than AC 250V and meets the rated voltage value specified in the product identification.  
Warning: If the power specification of the electric control box is AC220V, do not plug it into the AC380V power socket, otherwise it will be abnormal and the motor will not operate. Please turn off the power switch immediately and check the power supply again. Continuous supply of 380V for more than five minutes may burn components in the electric control box and endanger personal safety.
- 6H Please do not operate in the place directly exposed to sunlight, outdoor and the place with room temperature above 45 °C or below 0 °C.
- 7H Please do not operate near the heating (electric heater), in the place with dew or in the place with relative humidity less than 10% or more than 90%.
- 8H Please do not operate in dusty places, places with corrosive substances and places with volatile gases.
- 9H Please note that when wiring all power lines, signal lines, ground wires and other wiring should not be under pressure or over twisted to ensure safe use.
- 10H The ground terminal of the power cord must be connected to the system ground wire of the production plant with proper size of conductor and connector, and this connection must be permanently fixed.
- 11H All rotatable parts must be protected from exposure by the parts provided.
- 12H After the first power on after installation, first turn off the tangent function to operate the sewing machine at a low speed and check whether the rotation direction is correct and whether the operation is stable.
- 13H Turn off all power before doing the following:
  1. When plugging and unplugging any connecting plug between the control box and the motor.
  2. When threading.
  3. When lifting the sewing machine head.
  4. When repairing or making any mechanical adjustment.
  5. When the machine is idle.
- 14 H Repair or high level maintenance work, It can only be performed by trained Mechatronics technicians.  
All parts for maintenance shall be approved by our company before use.
- 15 H Please keep away from high-frequency electromagnetic wave and radio wave transmitter when using this product, so as to avoid the electromagnetic wave generated from interfering with servo drive device and causing wrong action.
- 16H Please do not knock or impact the product and devices with improper objects.  
Warranty Period  
The warranty period of this product is one year from the date of purchase or two years from the month of Ex-factory.  
Warranty Content  
The product under the premise of normal use and no operation error, During the warranty period, repair for customers free until normal operation.  
However, the following conditions will be charged for maintenance during the warranty period:
  1. When plugging and unplugging any connecting plug between the control box and the motor.
  2. When threading.
  3. When lifting the sewing machine head.
  4. When repairing or making any mechanical adjustment.
  5. When the machine is idle.

1. Improper use includes misconnect high-voltage power, use of the product for other purposes, self disassembly, maintenance, change, or use not in accordance with the specifications, intake water and intake oil, and insertion of foreign matters into the product.
  2. Damage caused by fire, earthquake, lightning, wind, flood, salt erosion, humidity, abnormal voltage and other natural disasters or improper places.
  3. Drop this product after customer purchase or the customer's self transportation (or entrusted transportation company).
- \* This product has tried its best and strictly controlled in production and test to reach the standard of high quality and high stability, but external electromagnetic or static interference or unstable power supply may still affect or damage the product, so the grounding system of the operation site must be done well, and the user is recommended to install fault safety protection device (such as leakage protector)

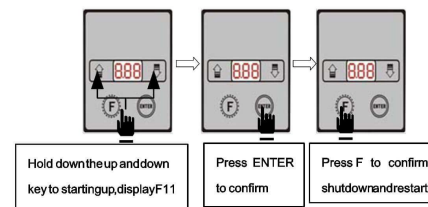
## 1.2 Operating discription

### 1.1.2 Key description

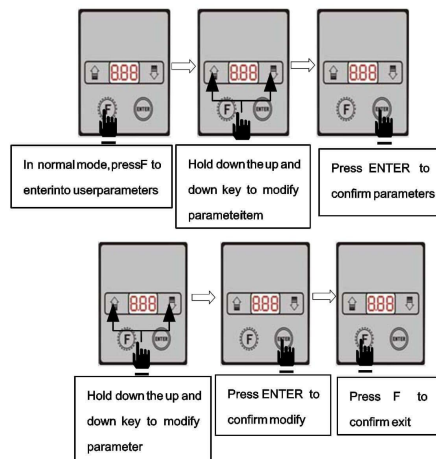
The key of view to save the parameters		View and save the content of the selected parameter number. After selecting the parameter number, press this key to view and modify the operation. After modifying the parameter value, press this key to exit and save the parameter.
Enter into parameter area function key		1. Press <b>F</b> key to enter user parameter model in general power on mode. 2. In the shutdown state, press and hold the <b>F</b> key to start the machine and enter the technician parameter mode.
Up regulation key		1. <b>↑</b> Parameter increment key in parameter selection area. 2. <b>↑</b> Set value increment key in parameter content area.
Down regulation key		1. <b>↓</b> Parameter decrement key in parameter selection area. 2. <b>↓</b> Set value decrement key in parameter content area.

### 1.2.1 Operating discription

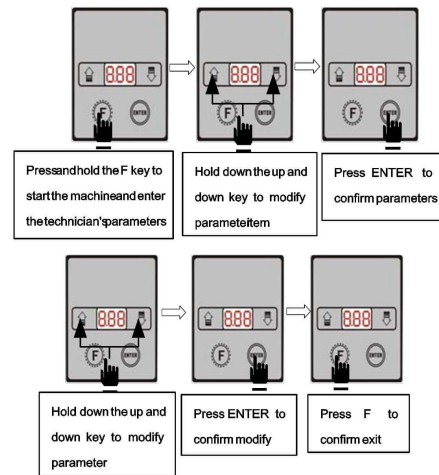
#### 1.2.1.1 Restore factory settings



#### 1.2.2 Enter the User Mode, Modify and Save



### 1.2.3 Enter the Technician Mode Modify and Save



### 1.2.4 Display font and actual font comparison table

Number Font

Actual value	0	1	2	3	4	5	6	7	8	9
LCD	0	1	2	3	4	5	6	7	8	9

## English Font

English letters	A	B	C	D	E	F	G	H	I	J
LCD	A	b	C	d	E	F	G	H	I	J
English letters	K	L	M	N	O	P	Q	R	S	T
LCD	k	L	M	N	O	P	Q	R	S	T
English letters	U	V	W	X	Y	Z				
LCD	U	V	W	X	Y	Z				

## 2.0 User Parameters & Technician Parameters

### 2.1 User Parameters

Parameter Item Content	Description	Range	Initial Value	Content Value Name Description And Remark
P01	Maximum speed during sewing (actual speed = displayed number * 10)	10-360	300	Setting the Maximum speed during sewing (actual speed = displayed number * 10)
P02	Starting speed during sewing (actual speed = displayed number * 10)	10-360	130	Setting the speed during sewing (starting sewing) (actual speed = displayed number * 10)
P03	Cutting Speed	10-100	55	The headstock speed during cutting (actual speed = displayed number * 10)
P04	Speed limit for needle 1	10-360	80	(actual speed = displayed number * 10)
P05	Speed limit for needle 2	10-360	80	(actual speed = displayed number * 10)
P06	Speed limit for needle 3	10-360	200	(actual speed = displayed number * 10)
P07	Speed limit for needle 4	10-360	250	(actual speed = displayed number * 10)
P08	Speed limit for needle 5	10-360	200	(actual speed = displayed number * 10)
P10	Number of threads for cutting	0-010	3	The number of stitches needed for cutting, matching the speed of the cutter

### 2.2 Technician Parameters

Parameter Item Content	Description	Range	Initial Value	Content Value Name Description And Remark
P13	Release time of Presser foot (ms)	10-990	560	When you step on the presser foot, the starting time is delayed for the confirmation of presser foot release
P16	Protective number of threads	1-990	400	The number of threads by needle required for protection when the base has no induction
P17	Automatically finding upper positioning after startup	0-1	1	1. After power-on, the machine automatically finds the upper positioning single, and then stops. 0. No effect



Parameter Item	Content	Description	Range	Initial Value	Content Value Name	Description And Remark
P18		Adjustment of upper positioning	40 - 180	65		For adjustment of upper positioning when the value decreases, the needle stops in advance when the value increases, the needle delays stopping.
P19		Testing the working time	1 - 250	20		Set the turn-on time in test C
P20		Testing the stop time	1 - 250	20		Set the stop time in test C
P21		Test A	0 - 1	0		After the test A position is set, the machine is tested for continuous operation at the speed of P01.
P22		Test B	0 - 1	0		After the test B position is set, the machine is tested for non-position operation at the speed of P01.
P23		Test C	0 - 1	0		After the test C position is set, the machine is tested for full functions at the speed of P01.
P24		Headstock protection switch	0 - 1	1		0Q Turn off the head protection function 1Q Turn on the head protection function
P30		Reverse lift height of press foot	0-400	50		
P31		Midway reverse ramp selection	0-1	0		0Q Midway reverse ramp will stop 1Q Midway reverse ramp will not stop

### 3Q Table of Error Code

Error code	Contents	Countermeasure
E01	1H When the power supply is ON, the main voltage detection is too high 2H When the supply voltage is too high	Turn off the system power and check whether the supply voltage is correct (or whether the specified rated voltage is exceeded). If it is correct, please replace the control box and inform the manufacturer.
E03	Abnormal transmission and communication between CPU of main control board and CPU of step drive board is abnormal	Turn off system power. Check whether the internal connecting line of the control box is loose or falling off, and restart the system after it returns to normal. If it still fails to work normally, please replace the control box and inform the manufacturer.
E06	The presser foot stepping motor is not in the correct position	Check whether the position of stepping motor is normal and whether the sensor is damaged

E07	<p>a)The motor does not rotate due to bad contact of plug wiring</p> <p>b)The headstock mechanism is deadlocked or the motor belt is stuck due to foreign matter entering.</p> <p>c) The motor torsion cannot penetrate the too thick processed object.</p> <p>d)The module drive output is abnormal.</p>	<p>Turn the motor hand wheel of the machine head to see if it is stuck. If it is stuck, first remove the mechanical failure of the machine head.</p> <p>If the rotation is normal, check whether the motor encoder connector and the motor power cable connector are loose. Please correct any looseness.</p> <p>If the contact is good, check whether the supply voltage is abnormal or the speed is set too high. Please adjust if necessary.</p> <p>If it is normal, please replace the control box and inform the manufacturer.</p>
E09 E11	The positioning signal is abnormal	<p>Turn off system power. Check whether the motor encoder interface is loose or falling off, and restart the system after it returns to normal. If it still fails to work normally, please replace the motor and inform the manufacturer.</p>
E14	The encoder signal is abnormal	<p>Turn off system power. Check whether the motor encoder interface is loose or falling off, and restart the system after it returns to normal. If it still fails to work normally, please replace the motor and inform the manufacturer.</p>
E15	The power module overcurrent protection is abnormal	<p>Turn off the system and turn it back on. If it still fails to work normally, please replace the motor and inform the manufacturer.</p>
E17	The headstock protection switch is not in the correct position	<p>Turn off system power. Check whether the headstock is opened and whether the ball switch in the control box is displaced or damaged.</p>
E18	Mechanical lock sensor not in correct position	<p>Check whether the mechanical lock position is normal and whether the sensor is damaged.</p>
E19	The base sensor is not in the correct position	<p>Check whether the position of the base is normal and whether the sensor is damaged.</p>

## 4.2 Schematic Diagram of Port

### 4.2.1 Name of Each Port

