

SIRUBA®

操作手冊

OPERATION MANUAL

■ BKF



一般安全事項說明

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緊記於心。

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、勿在溼氣重的地方或潮濕的場所使用機械器具。保持工作場所良好整齊。當有引發火災或爆炸危險時，勿使用電源工具。

3. 免於電擊危害

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

不要讓訪客接觸工具或是延伸管線。

5. 適當的穿著

不要穿著寬鬆衣物或是穿戴珠寶，這可能被活動零件拉扯而導致危險。穿戴護髮套可包住長髮。

6. 不要任意拉扯電線

絕不要用電源端拉扯機器，或是從插座猛拉電線來拔掉電線。使電線遠離熱源、油類或是尖銳邊緣。

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。

GENERAL SAFETY INSTRUCTIONS

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 invite injuries.

2. Consider work area environment

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 can 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 edges..

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. 中斷機器電源

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. 由合格人員來修理工具

所以修理工作應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

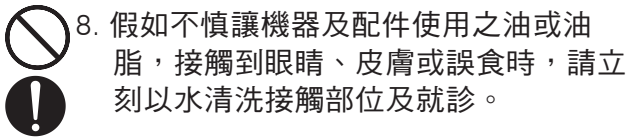
恭喜您購買本機器，為了使這台機器能獲得最佳功能以及安全的操作，務必請正確的使用這台機器，使用前請仔細閱讀使用說明書，希望您能長期使用它。請記得將此說明書放在容易取得的地方。

-  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，除了本使用說明書外，請詳細閱讀其他相關說明書。此外，請妥善保存此說明書，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. 當機器完成操作時，所有安全配備必須安裝就緒，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、導線片、天平等以及更換梭子時。
 - (2) 更換針、壓具、針板、送具、頂針片、車布導板，以及其他附屬配件時。
 - (3) 維修工作時。
 - (4) 離開工作場所或工作場所無人看顧時。

IMPORTANT SAFETY INSTRUCTION

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, cloth guides and other parts or accessories.
 - (3) When repairing.
 - (4) When the operator leaves the working place or leaves the machine unattended.



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，須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須予以消除，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，必須定期清理。



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 house 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以及減少噪音，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，且插頭必須插在接地線之插座上。

 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. 修改或變更機器必須依照安全規定及標準，同時採取有效的安全措施或變更機器所引起損壞之責。


 19. 警告提示以兩種符號標示：


(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) 必須特別注意事項
a. 絕對不可在移動外蓋，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；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 outer cover, finger guard or any safety device to avoid physical injury.

b. Please keep your hair, fingers and clothes away from the hand wheel 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。



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，必須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。



e. 當放置或抬起機器時，小心勿將手置於機器中，以免導致人員受傷。



f. 為了避免機器突然啟動而引起可能意外，當機頭傾斜時，請關掉機器電源，以免導致人員受傷。



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。



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。



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。



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



f. Please turn off the power before tilting the machine head to avoid possible accidents due to abrupt start of this machine.



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



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




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







WARNING


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。

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.

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產品介紹

1. 產品說明

本產品為工業縫紉機數位控制交流伺服電機驅動系統，藉由數位系統控制，實現縫紉機急升、急降、精準定位及電磁閥或電磁鐵搭配縫衣時所需動作條件等之功能，進而提升縫製效率。本產品亦包含使用者操作介面，使用者可透過操作面板設定參數、選擇模式、以及監控電機運轉狀態。

2. 產品外觀

控制器外觀尺寸圖 (圖 1)

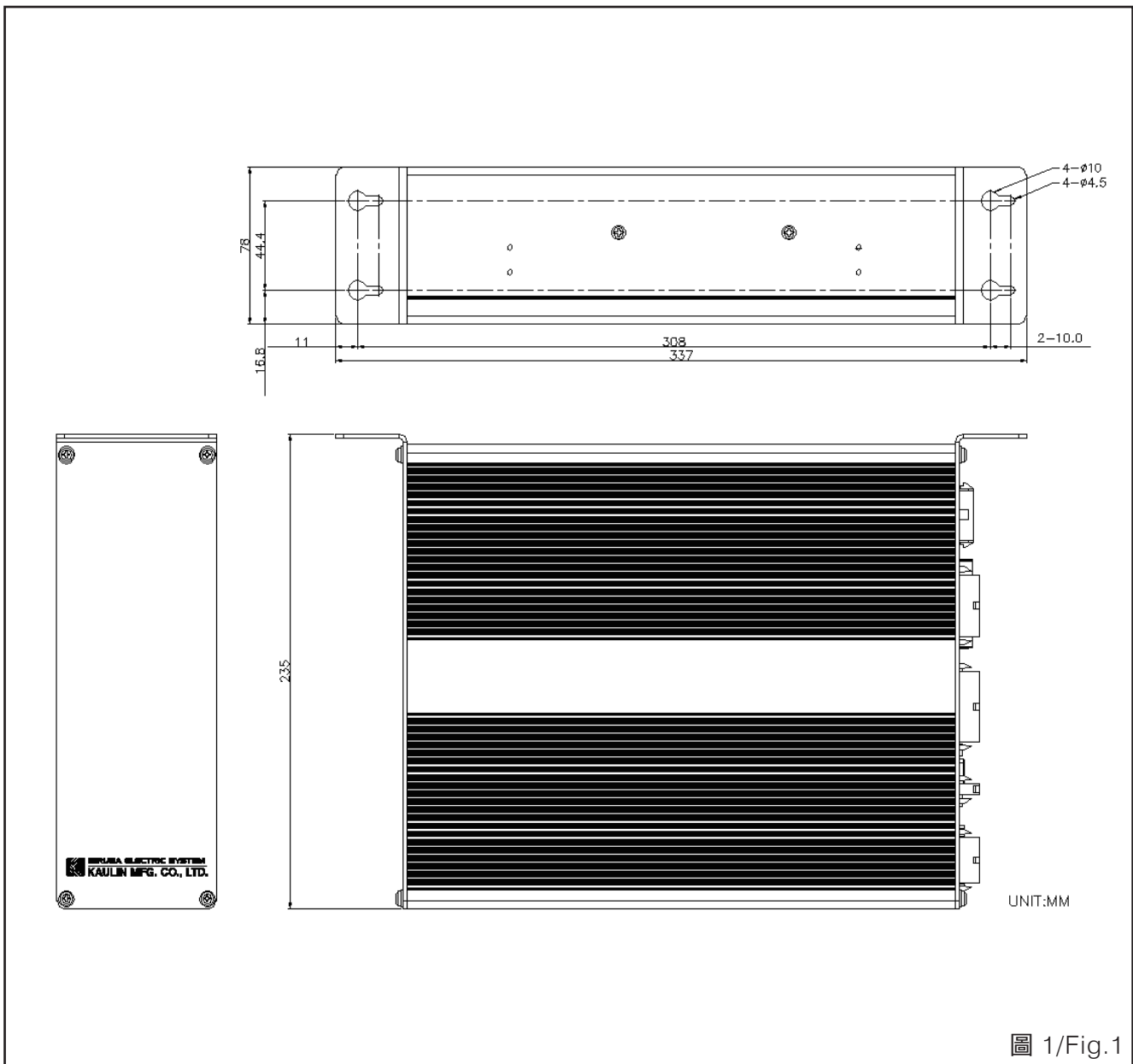
PRODUCT INTRODUCTION

1.Product Brief

The product is digital control AC Servo System and it can improve sewing efficiency through precise speed control and positioning. The user can use the operation panel for parameter setting, mode selection, and servo motor state monitoring.

2.Product Appearance

Control Box Outline Dimension(Fig.1)



馬達外觀尺寸圖

Motor Outline Dimension

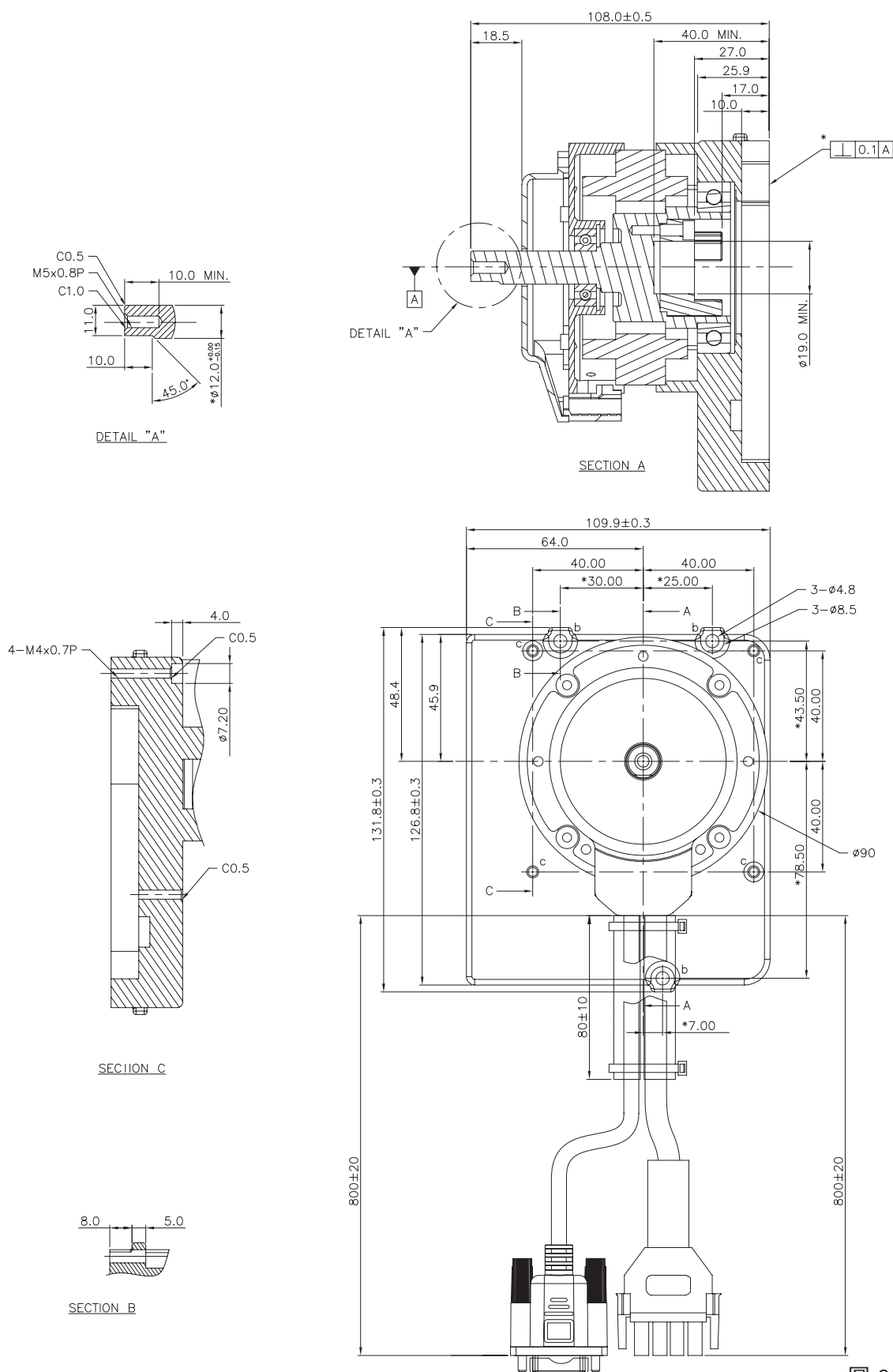
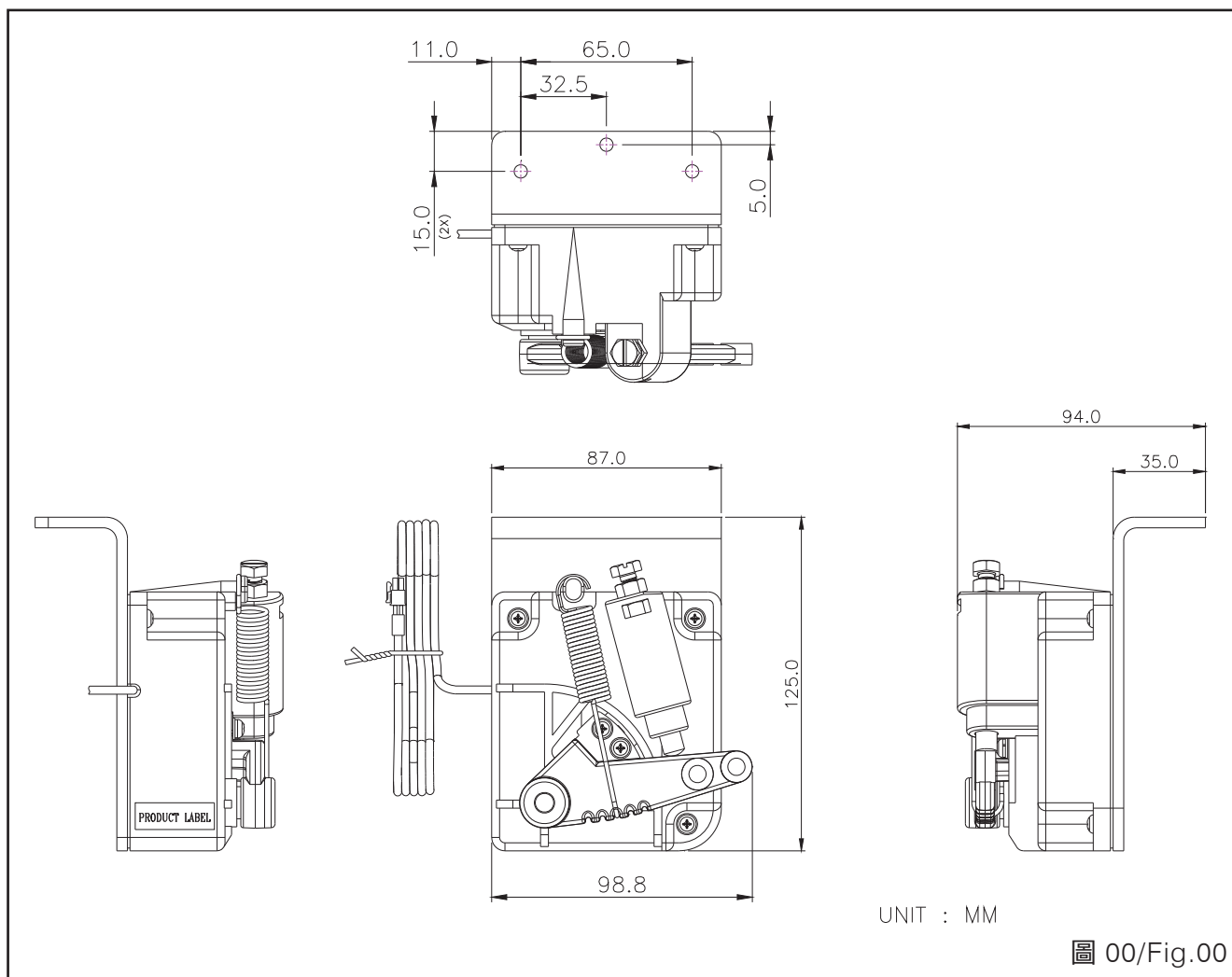


圖 00/Fig.00

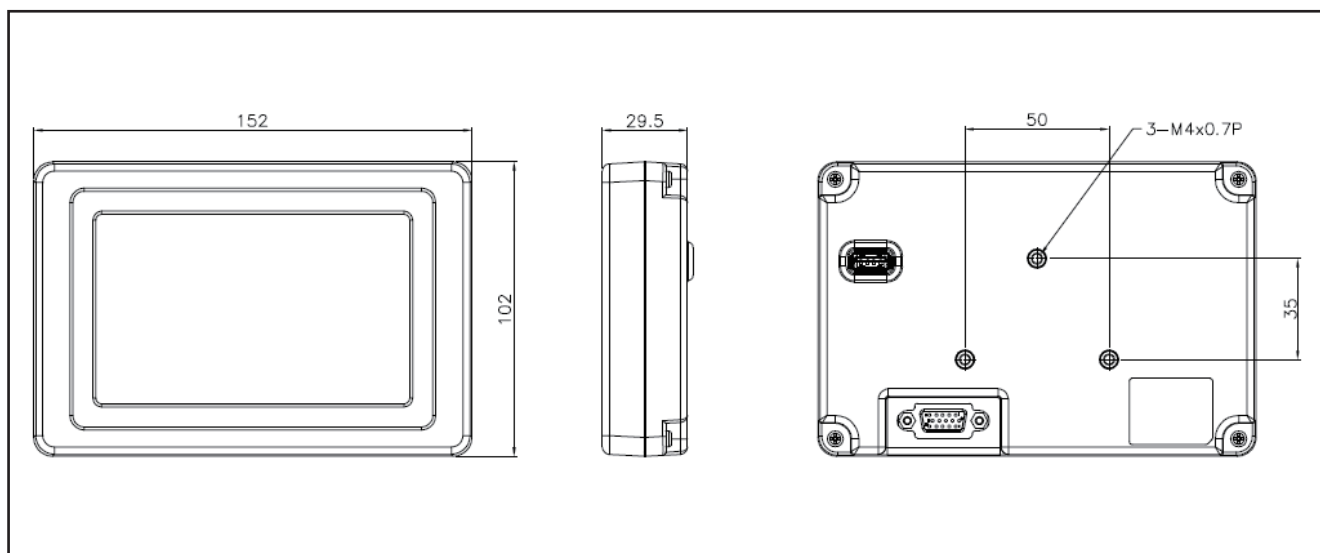
控速器尺寸

Speed Controller Outline Dimension



選針盒尺寸

Operation Box Outline Dimension

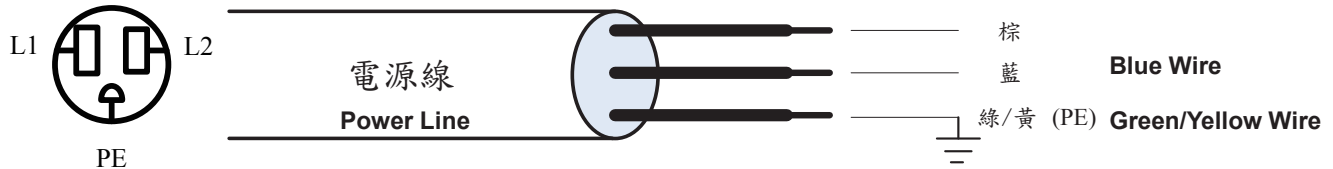


接地與接線

POWER CONNECTION AND GROUNDING

1. 單相電源接線方法

1.Single Phase Connection



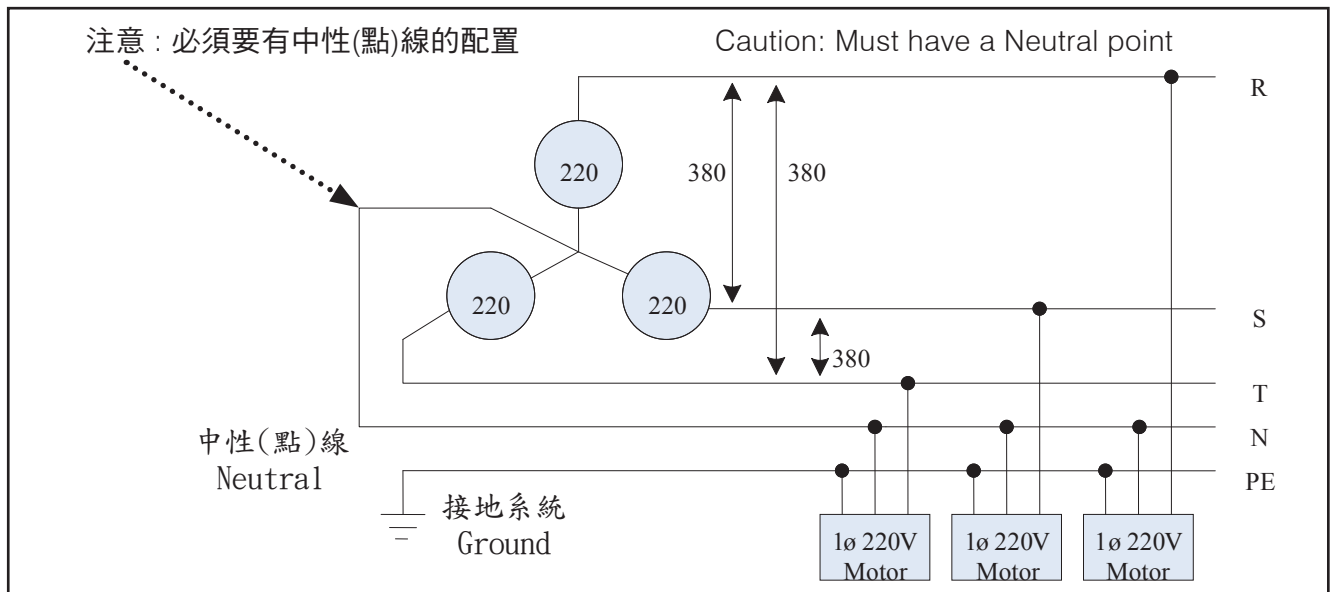
注意：
如果此配置系統沒有【中性(點)線】時，則單相 220V 的伺服馬達不適合在此場所使用。



Caution :
If the power source does not have the neutral point, then this 1 Φ / 220 V servo motor is not suitable for this connection.

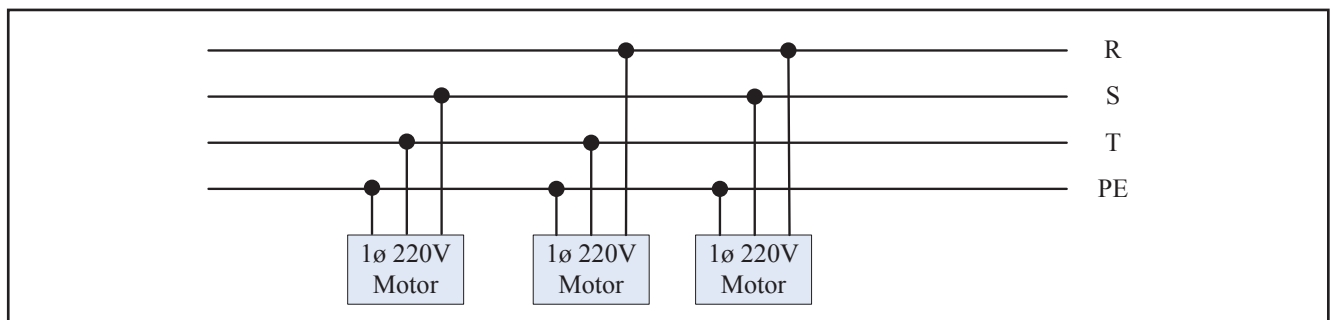
2. 當電源系統配置為三相四線式 380V 時，欲使用單相 220V 供應本控制器的接線放式

2.Connecting Single Phase / 220V Power from a 3 Phases / 380V Power Source



3. 當單相 220V 伺服電機欲使用在三相 220V 的電壓時，須注意配置使用上的平衡。

3.Load Balance for 1 Phase / 220V Motor with 3 Phases / 200V Power System



系統規格

SYSTEM SPECIFICATION

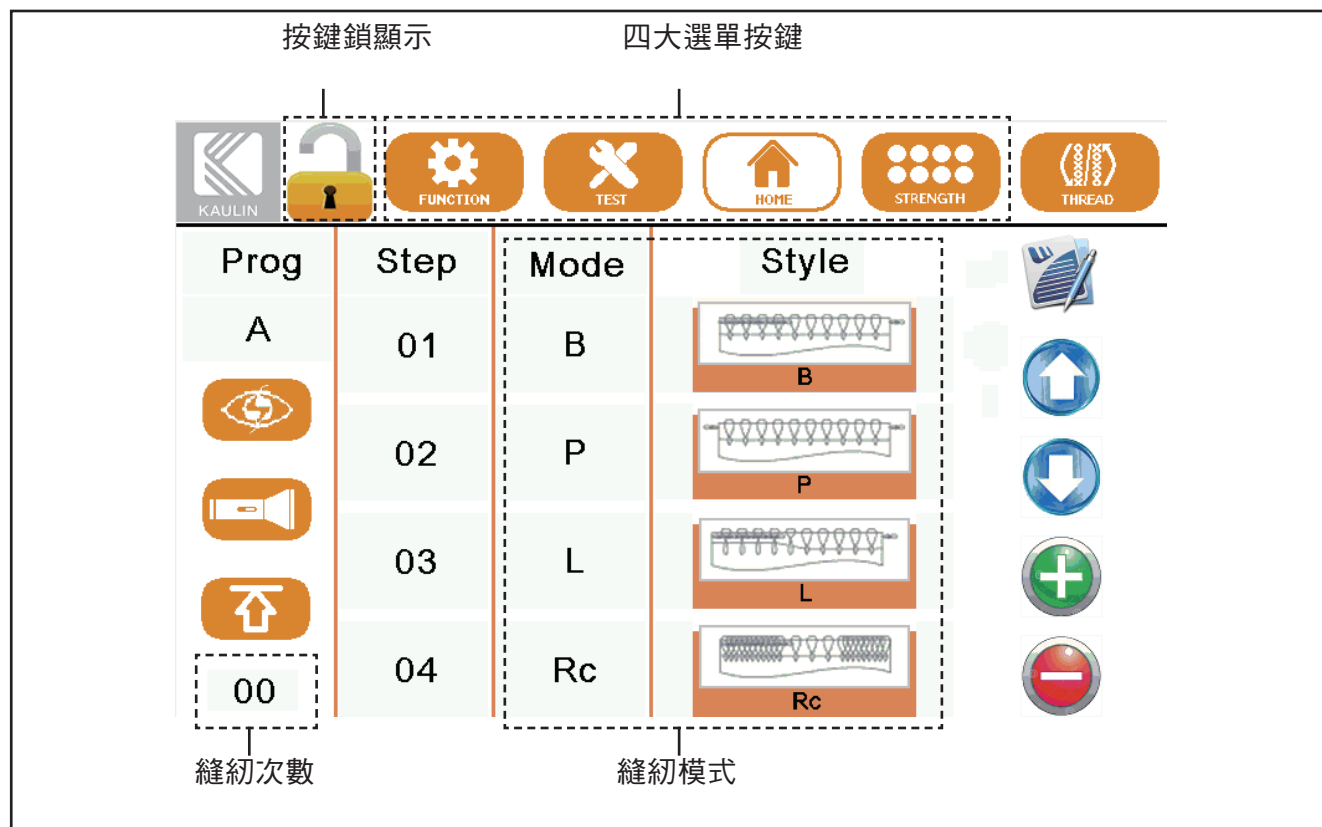
馬達類型 Motor Type	交流永磁伺服馬達 AC Servo Motor
電源電壓 Input Voltage Range	AC 176~286V 50/60 Hz
額定輸入功率 Rated Input Power	400W
輸出轉速 Max Sewing Speed	200 ~ 7500 RPM
額定輸出扭矩 Rated Torque	0.509 N-m
工作環境溫度 Operating Temp	0-55degC
絕緣耐壓 Insulation Voltage	AC 1500V / 1min
絕緣電阻 Insulation Resistance	DC 500V, 100M 歐姆以上 DC 500W, over 100M ohm
選針盒 Operation Box	有 Yes
淨重 Net Weight	控制器 3.3Kg / 馬達 2.1 Kg / 控速器 0.7 Kg / 選針盒 0.3 Kg Control Box 3.3 Kg / Motor 2.1 Kg / Speed Controller 0.7Kg / Operation Box 0.3Kg

產品功能設定

PRODUCT FUNCTION SETTING

操作面板說明

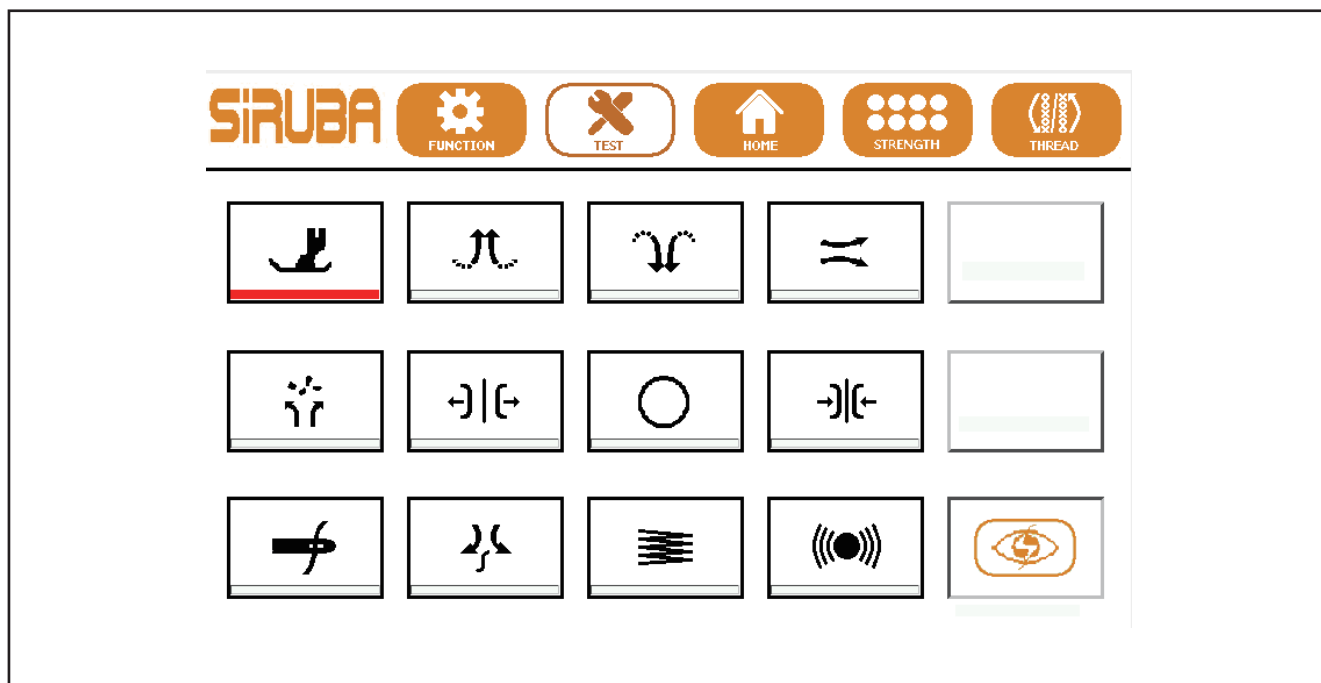
縫紉首頁：



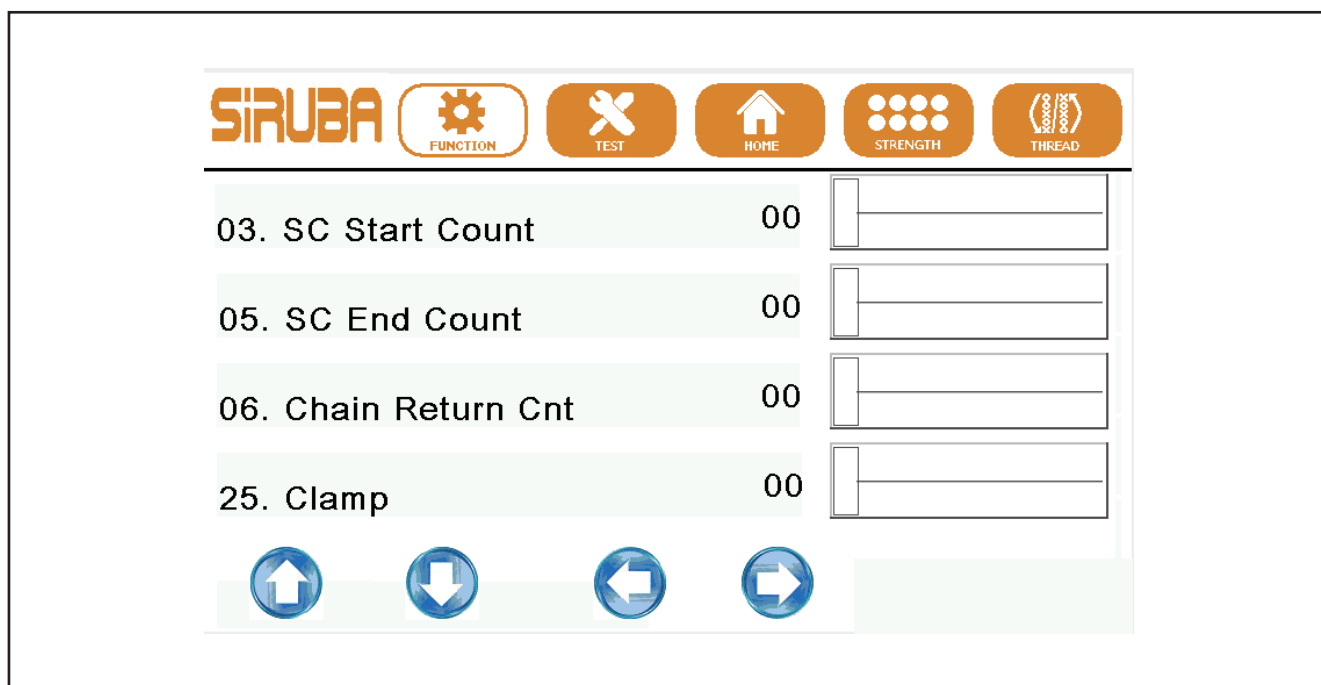
	進入參數調整頁面
	進入電磁閥測試頁面
	進入首頁
	進入鬆線強度調整頁面
	縫紉重置



	電眼指示燈
	LED 照明燈調整
	縫紉流程置頂
	進入縫紉流程編輯模式
	縫紉步驟選擇
	縫紉步驟刪除 / 增加

電磁閥測試頁面



參數調整頁面



A. 按上、下鍵   進行參數換頁，按左、

右鍵   進行參數調整

B. 亦可直接拖曳 Slider Bar 進行參數調整

A

參數說明

Parameter List

NO.	參數名稱 Description	設定值範圍 Range of values	值 Val.	參數的功能說明 Description of the parameters
1	PL MODE	0=Manual / 1=Auto	M	手 / 自動抬壓腳 PL(presser foot lift)
2	PL TIME	50~2000	160	自動抬壓腳的延遲時間 Presser foot timer(ms)
3	SC Start Count	0~99	2	設定 B、P、R、S 啟縫時從空線環變為基本縫的針數。 In each mode of B, P, R and S, set the stitch at which the thread chain mode is changed to the plain seaming mode at the start of sewing.
4	SC Start (Condensed)	0~99	2	設定 Bc、Pc、Rc、Sc 啟縫時從空線環變為基本縫的針數。 In each mode of Bc, Pc, Rc, and Sc, set the stitch at which the thread chain mode is changed to the plain seaming mode at the start of sewing.
5	SC End Count	0~98	0	設定從縫紉完的基本縫變為空線環時針數 To set the stitch at which the plain seaming mode is changed to the thread chain mode at the end of sewing
6	Chain Return Cnt	1~99	4	設定返回夾空線環的針數 To set the stitch when the thread chain clamp returns home.
7	End Count	1~99	32	設定在縫紉完後布料從感應器抽出時，縫紉機自動停止，針板中間爪（雙針）後退的針數 To set the stitch when the machine stops automatically and the needle plate chaining-off finger (on 2-needle machine) retracts after the fabric has gone through the sensor light.
8	Start Mode	M / A	M	選擇縫紉機啟動的自動 / 手動 Select the sewing machine to start automatic / manual
9	Machine Start Tr	50~2000	50	縫紉機自動啟動時踩下縫紉機踏板，在返回到中間位置後，設定幾秒後啟動縫紉機的時間 To set the time interval from the pressed treadle is released to when the machine starts running.
10	Item Change with	Mech / Oper	Mech	●” Mech”：用維修人員等級的參數設定畫面 Mechanic level parameter setting screen ●” Oper”：用操作人員等級的參數設定畫面 Operator level parameter setting screen
11	Reserve	0 / 1		保留 Reserve
12	Condensed Stitch	Off / On	Off	設定是否使用密縫功能 To select whether condensed stitching is used or not.
13	MS Start Counter	0~99	4	設定開始縫紉幾針後密縫功能開始啟動 set the stitch of condensed stitching is used at the start of sewing
14	MS Counter	0~99	10	設定密縫的針數 Set stitch of condensed stitch seaming

15	Reverse Seam	Off / On	On	選擇返回縫功能的 ON/OFF reverse stitching mode is set to ON/OFF
16	RS STOP Counter	0~99	2	設定當布料從布料感應器下抽出後，縫紉機縫幾針才停下來 To set the stitch at which the machine stops after the fabric comes off from the fabric detection sensor.
17	RS Counter	0~99	10	設定將布料翻轉後，再縫紉多少針數 / Enter the number of reverse stitches after turning over the fabric.
18	Mesh Counter Set	Off / On	Off	縫紉網眼布料時設定為 ON Select ON when sewing a mesh fabric
19	Mesh Counter	0~99	3	設定通過網眼孔部分的針數 Set this stitch when sewing mesh fabrics
20	Chain BlowRearTr	50~1500	400	設定空線鏈返回狀態氣壓應吹出多少時間 (ms) Adjust the time interval for blowing the thread chain at the end of sewing depending on how the thread chain returns smoothly
21	Special BLSC Cnt	0~99	10	縫製模式 S 或 Sc 時，啟縫幾針時解除鬆線功能 Set the stitch at which the thread releasing stops from the start of sewing on S or Sc mode.
22	Loose BL Counter	0~99	30	做緊身褲等的鎖縫工序時，將開始縫橡筋部的接縫設定到線鏈壓線處的計數器；縫製模式 L，啟縫時從空線環變為基本縫的針數。 In sewing mode of L, set the stitch at which the thread chain mode is changed to the plain seaming mode at the start of sewing
23	Set Up Selection	SW / Pedal / SW&Pedal	SW	對於設置動作，可選擇由”設置開關”、”腳踏板”或”設置開關 & 腳踏板”進行設置 SW: to perform a SET UP operation by “THREAD” key Pedal: to perform a SET UP operation by pedal SW&Pedal: to perform a SET UP operation by “THREAD” key or pedal
24	PL Selection	H&P / P / H	H&P	H&P: 啟用一般踏板和立作業踏板 support standard pedal and twinning pedal P: 啟用一般踏板 support standard pedal H: 啟用立作業踏板 support twinning pedal
25	Clamp	0 / 99	10	縫製模式為 B,R,S,L 時，布料啟縫處發生收縮或殘留空線鏈時需要進行設定 .In each mode of B, R, S and L, Set this counter when a fabric tends to shrink at the start of sewing or when the thread chain knots tend to be produced in backlatching operation.
26	Length	0 / 99	11	縫製模式為 B,R,S,L 時，倒回縫空線鏈長度的設定 In each mode of B, R, S and L, to set the backlatching thread chain length
27	C Clamp	0 / 99	15	縫製模式為 Bc,Rc,Sc, 時，布料啟縫處發生收縮或殘留空線鏈時需要進行設定 In each mode of Bc, Rc and Sc, Set this counter when a fabric tends to shrink at the start of sewing or when the thread chain knots tend to be produced in backlatching operation.

28	C Length	0 / 99	20	縫製模式為 Bc,Rc,Sc, 時, 倒回縫空線鏈長度的設定 In each mode of B, R, S and L, to set the backlatching thread chain length
29	Reserve	0 / 1		保留 Reserve
30	Reserve	0 / 1		保留 Reserve
31	Reserve	0 / 1		保留 Reserve
32	Reserve	0 / 1		保留 Reserve
33	P NS CNT	1~99	20	P 和 Pc 模式時, 設定在縫紉完後布料從感應器抽出時, 縫紉機自動停止的針數 In sewing mode P&Pc, to set the stitch when the machine stops automatically after the fabric has gone through the sensor light.
34	P NS TEN	1~99	10	P 和 Pc 模式時, 設定在縫紉完後布料從感應器抽出時, 縫紉多少針數後做夾線動作 In sewing mode P&Pc, to set the stitch when the clamp works automatically after the fabric has gone through the sensor light.
35	P SE CNT	1~99	1	P 和 Pc 模式時, 設定在縫紉完後布料從感應器抽出時, 縫紉機自動車縫多少針數, 再執行 “Param33.(P NS CNT)” 的針數 In sewing mode P&Pc, set the stitch after the fabric has gone through the sensor light, sewing machines, automatic sewing how many stitches, and then execute the “Param33.(P NS CNT)”
36	Buzzer On-Off	Off / On	On	按鍵聲的開啟或關閉 To set buzzer on or off
37	Safety switch	NO / NC / off	off	設定安全開關為” 常開式”, ” 常閉式” 或禁用 To set safety switch normal open. normal close or no use
38	Restore default	nop / run	nop	回復出廠設定值 Restore parameter default value
39	LCD auto pwr off	Off / On	Off	LCD 一分鐘自動斷電功能開啟或關閉 LCD minute automatically power-off function is turned on or off
40	LCD brightness	0~99	47	LCD 亮度設定 To set LCD brightness
41	Motor Speed	500 ~ 9999	5000	縫製最高速度設定 (spm) sewing maximum speed
42	Position	0 ~ 359	170	伺服馬達上定位角度調整 Servo motor up-position angle adjustment
43	Reserve	0 / 1		保留 Reserve
44	Reserve	0 / 1		保留 Reserve

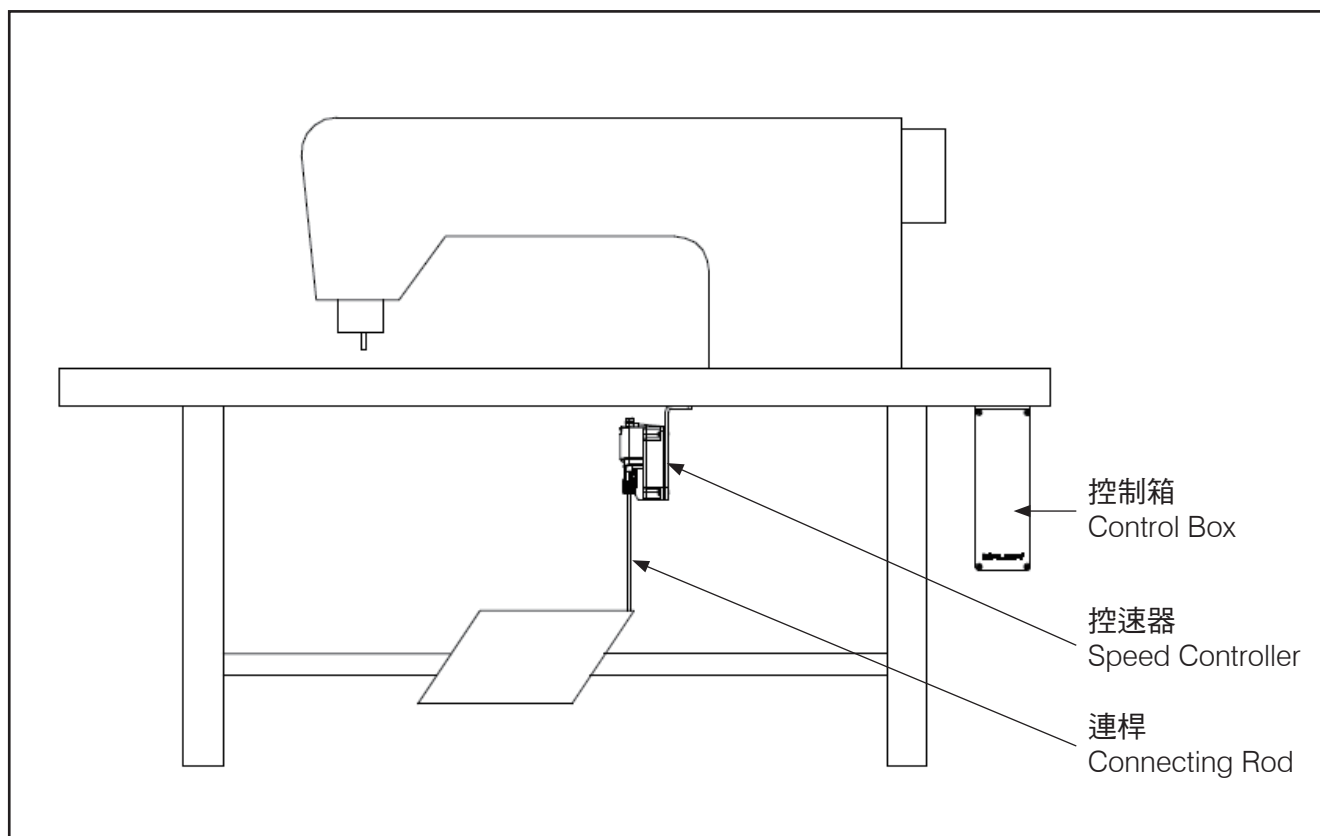
45	Reserve	0 / 1		保留 Reserve
46	Reserve	0 / 1		保留 Reserve
47	Reserve	0 / 1		保留 Reserve
48	Reserve	0 / 1		保留 Reserve
49	Reserve	0 / 1		保留 Reserve
50	End counter speed	1000~6000	3000	執行空線鏈重置的縫紉速度 sewing speed for perform SET-UP operation
51	Reserve	0 / 1		保留 Reserve
52	Reserve	0 / 1		保留 Reserve
53	Reserve	0 / 1		保留 Reserve
54	Reserve	0 / 1		保留 Reserve
55	Reserve	0 / 1		保留 Reserve
56	Reserve	0 / 1		保留 Reserve
57	Reserve	0 / 1		保留 Reserve
58	Reserve	0 / 1		保留 Reserve
59	PL Time For Reset	200~3000	200	執行空線鏈重置時，壓腳抬起的持續時間（由參數 20 控制） Presser lift time when perform SET UP operation
60	Air ON time	100~3000	800	每針氣壓閥的持續動作時間 (ms) solenoid valve the continuous operation time every stitch.(ms)
61	Reserve	0 / 1		保留 Reserve
62	Reserve	0 / 1		保留 Reserve
63	Reserve	0 / 1		保留 Reserve
64	Save to default	Nop / Run	Nop	將目前的參數值設定為出廠設定值 the current value of parameters is set to factory settings
65	Total Time	1 - 168 Hrs	1	自動執行所有時間設定，當 P.68 = ON 有效。
66	Turn On Time	1-250 ms	50	自動執行週期時間設定，當 P.68= ON 有效。
67	Turn Off Time	1-250 ms	50	自動不執行週期時間設定，當 P.68= ON 有效。
68	Burn-in Mode	Off / On	Off	ON：可用 OFF：不可用
69	Lock Time	0~99	0	螢幕鎖定時間設定。

操作介面及安裝說明

USER INTERFACE AND INSTALLATION

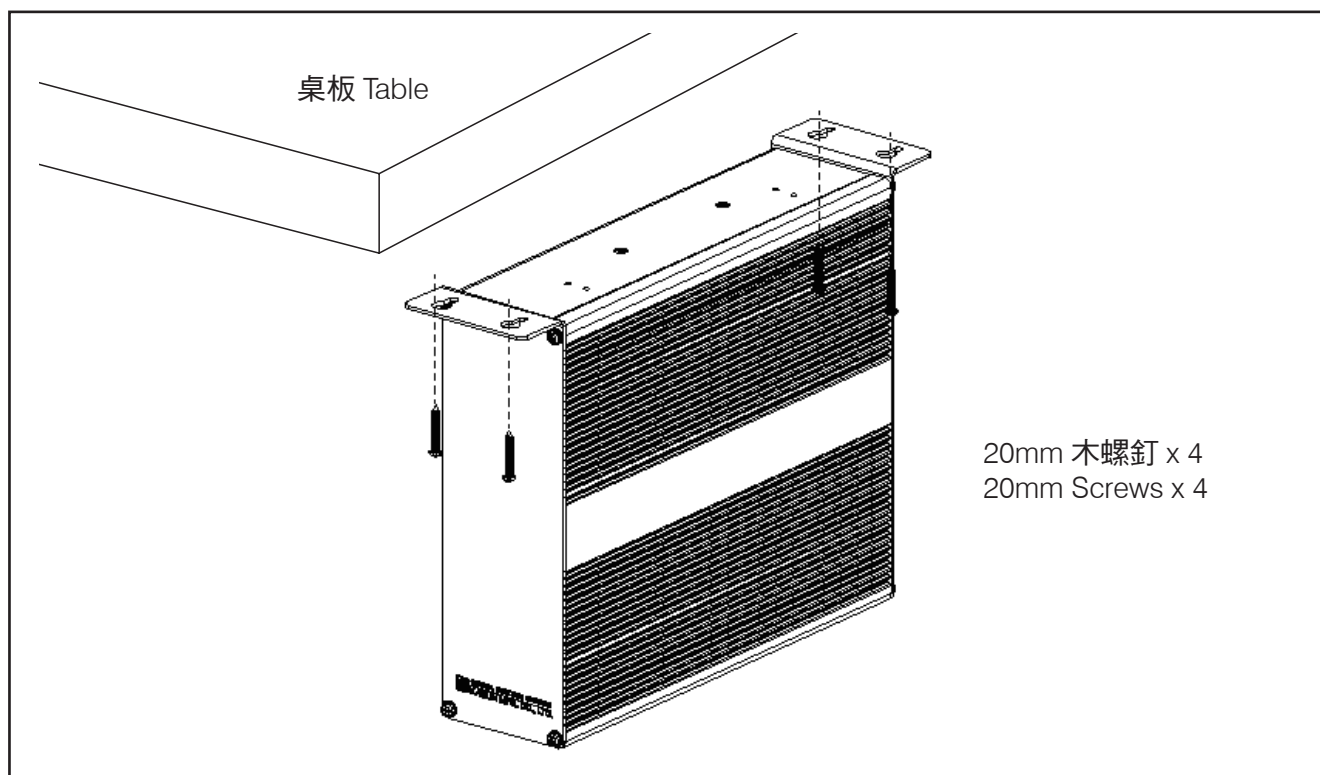
控制器安裝示意圖
安裝位置

Control Box Installation
Installation Location



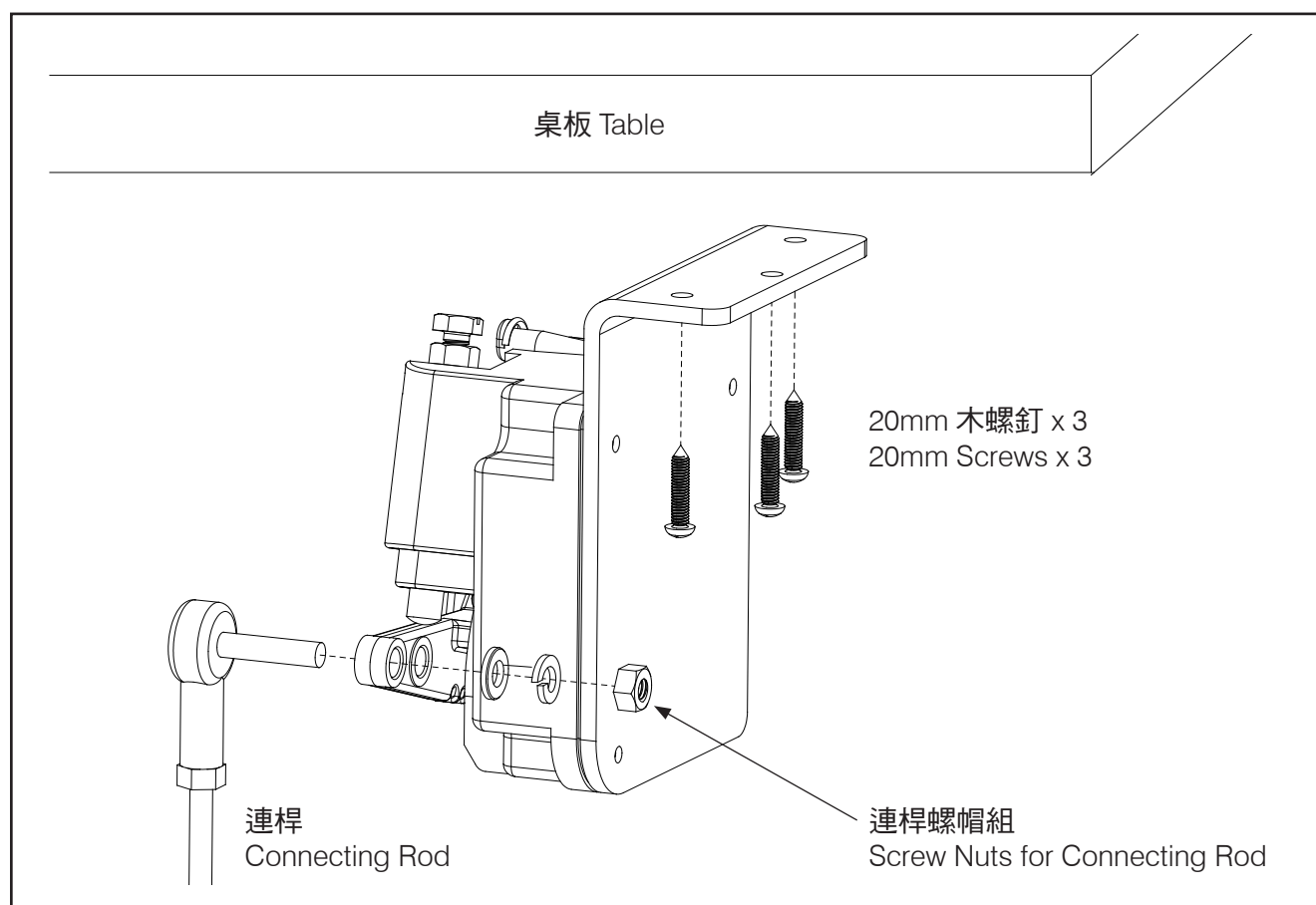
控制器安裝方式

Control Box Installation



控速器安裝方式

Speed Controller Installation



控速器調校方式

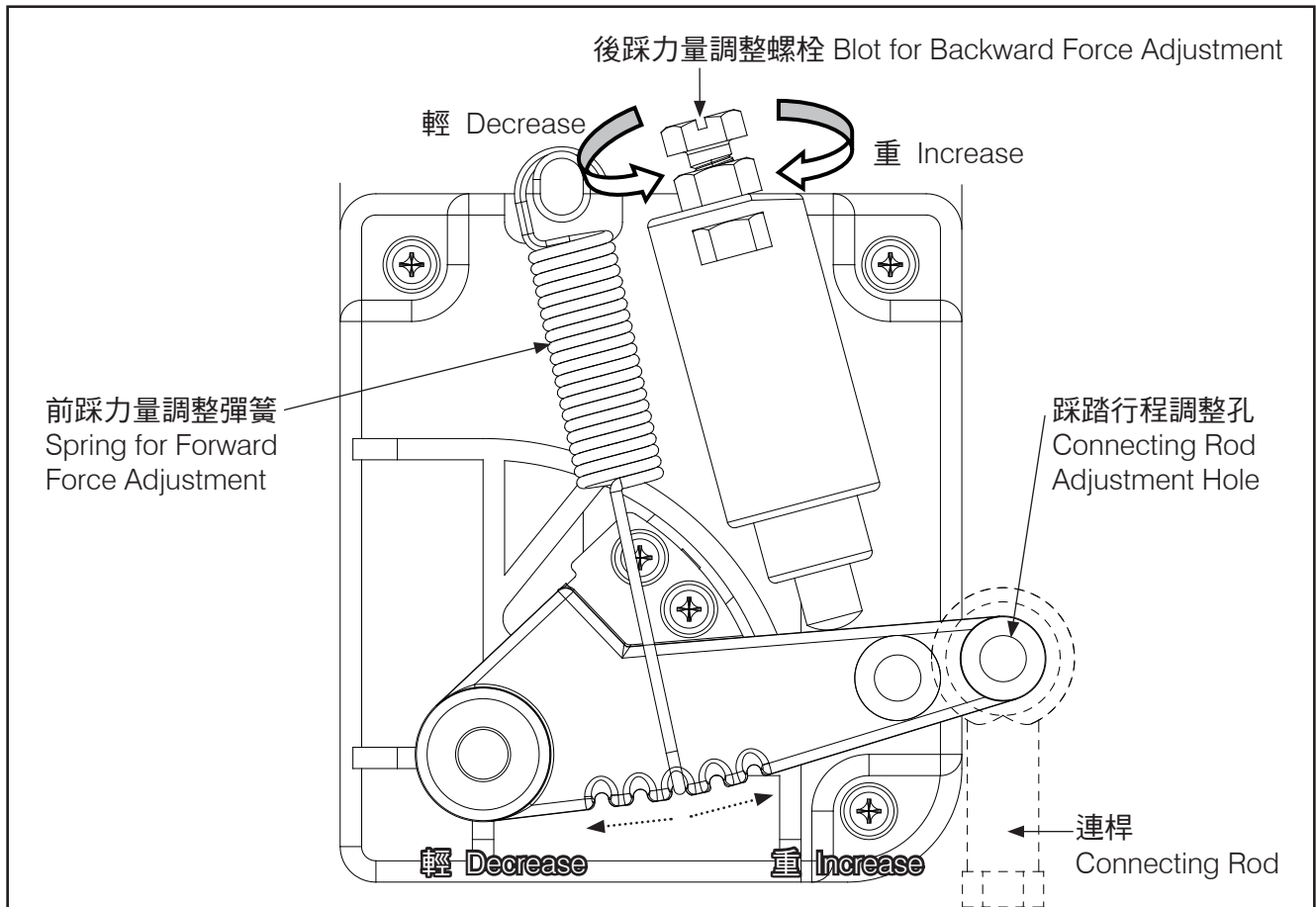
Speed Controller Adjustment



在進行控速器調校前，請務必關閉電源。



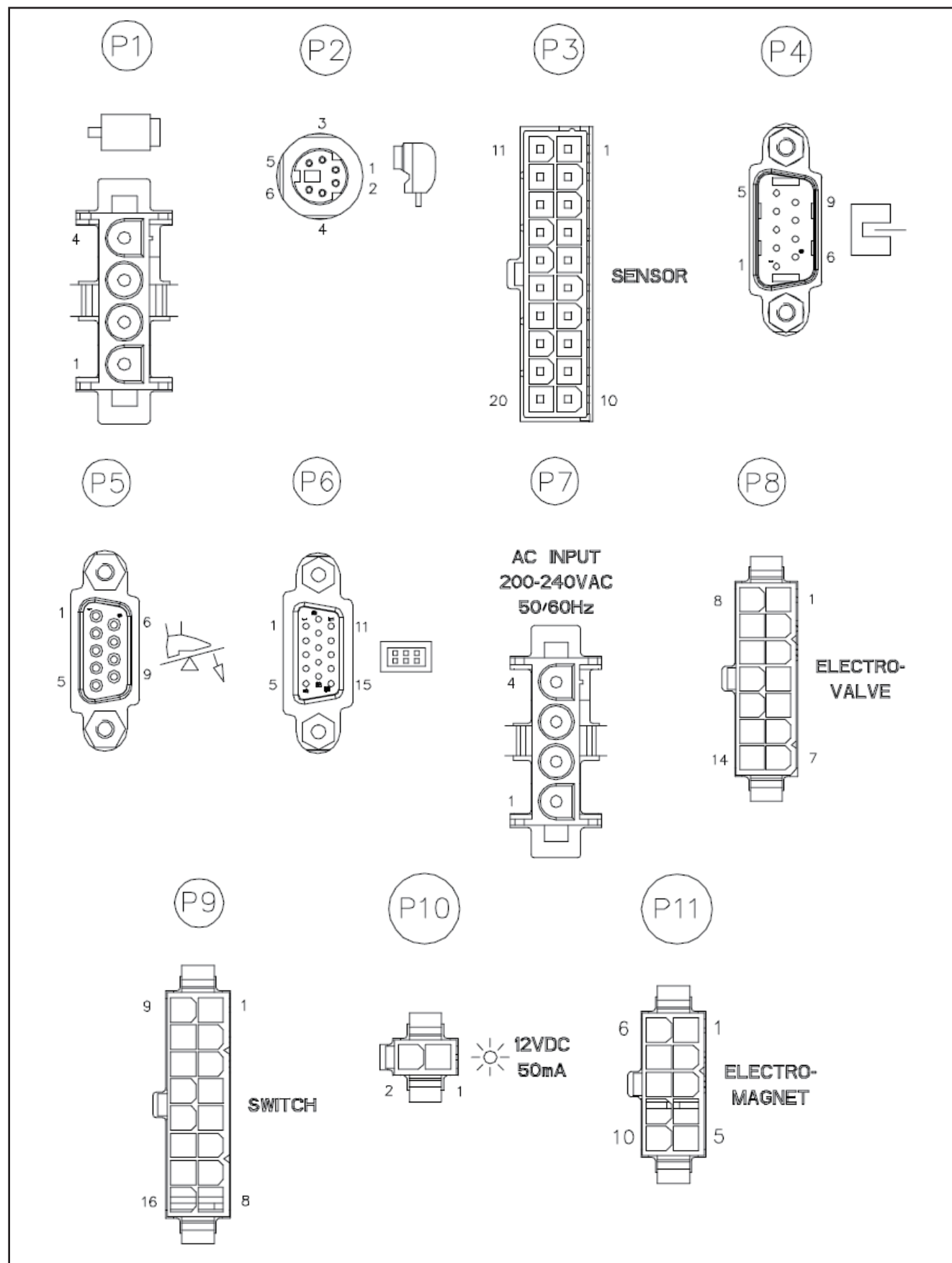
Turn off the power before the speed controller adjustment.



調整項目 Adjustment Items	調整方式 Adjustment Method
踏板前踩力量調整 Forward Force Adjustment	(1) 將調整彈簧往右移，前踩力量越 " 重 " When spring moving to the right, the forward force increases. (2) 將調整彈簧往左移，前踩力量越 " 輕 " When spring moving to the left, the forward force decreases.
踏板後踩力量調整 Backward Force Adjustment	(1) 將調整螺栓順時針轉動，後踩力量越 " 重 " When bolt turns clockwise, the backward force increases. (2) 將調整螺栓逆時針轉動，後踩力量越 " 輕 " When bolt turns counterclockwise, the backward force decreases.
踏板行程調整 Connecting Rod Adjustment	(1) 將連桿安裝於右側孔中，踏板行程較 " 長 " When the connecting rod secures at right hole, the stroke is longer. (2) 將連桿安裝於左側孔中，踏板行程較 " 短 " When the connecting rod secures at left hole, the stroke is shorter.

外部连接器连接说明

Outside Connector Diagram



P1: MOTOR POWER

PIN	SIGNAL
1	U
2	V
3	W
4	PE

P2: 定位器

PIN	SIGNAL	PIN	SIGNAL
1	FIXA	4	
2	FIXB	5	5V
3		6	GND

P4: MOTOR ENCODER

PIN	SIGNAL	PIN	SIGNAL
1	QEA	6	HA
2	QEB	7	HB
3	INDEX	8	HC
4	5V	9	
5	GND		

P3: SENSOR

PIN	SIGNAL	PIN	SIGNAL
1	5V	11	IR OUT 1
2	SNG1	12	E-EYE-SEN. 1
3	5V	13	IR OUT 2
4	SNG2	14	E-EYE-SEN. 2
5	5V	15	HALL SEN. 01
6	GND	16	5V
7	HALL SEN. 02	17	GND
8		18	
9	E-EYE-D1	19	E-EYE-D2
10	E-EYE-C1	20	E-EYE-C2

P8: 電磁閥

PIN	SIGNAL	PIN	SIGNAL
1	SOLENOID-01	8	24V2
2	SOLENOID-02	9	24V4
3	SOLENOID-03	10	24V2
4	SOLENOID-04	11	24V4
5	SOLENOID-05	12	24V3
6	SOLENOID-06	13	24V4
7	SOLENOID-07	14	24V3

P9: SWITCH

PIN	SIGNAL	PIN	SIGNAL
1	OP-SW1	9	SAFE-SW3
2	GND	10	GND
3	OP-SW2	11	SAFE-SW4
4	GND	12	GND
5	SAFE-SW1	13	SAFE-SW5
6	GND	14	GND
7	SAFE-SW2	15	
8	GND	16	

P5: 控速器及立式踏板

PIN	SIGNAL	PIN	SIGNAL
1	GND	6	SWDAT
2	START SW1	7	5V
3	GND	8	SWCLK
4	TRIMMER SW1	9	3.3V
5	SPD-CMD		

P6: LCD

PIN	SIGNAL	PIN	SIGNAL
1	USIF-5V	9	
2		10	
3		11	BKL-5V
4		12	USIF-RX
5	GND	13	USIF-TX
6		14	PE
7		15	
8			

P7: AC INPUT

PIN	SIGNAL
1	N
2	
3	L
4	PE

P10: LED

PIN	SIGNAL
1	GND
2	12V

P11: 電磁鐵

PIN	SIGNAL	PIN	SIGNAL
1	CS2	6	CS1
2	FOOT2	7	FOOT1
3	TESION	8	24V/30V
4	TRIMMER	9	24V/30V
5	WPER	10	24V/30V

註：24V 應用於電磁閥，30V 應用於電磁鐵。

故障排除

ERROR CODE & TROUBLE SHOOTING

選針盒顯示 錯誤碼 Operation Box Error Code	異常現象說明 Cause of the Problem	解決措施 Measurement and Solution
Err 0	控速器錯誤 Speed Controller Error	<ol style="list-style-type: none"> 1. 關閉電源。 Turn off the power. 2. 請檢查控速器是否脫落、鬆動、破損。 Check if any broken or loosen connection between speed controller connector. 3. 排除後重新送電，若仍無法正常運轉，請更換控速器並通知廠商。 Reboot the control box after troubleshooting. If the error code is still there, please exchange control box and contact with qualified technician.
Err 1	過電流保護 Over Current Protection	<ol style="list-style-type: none"> 1. 關閉電源。 Turn off the power. 2. 確認 IPM 模組 (IC201) 阻抗是否正常。 Check if the resistance for IPM module (IC201) is normal. 3. 一分鐘後重新送電。控制器若仍有錯誤碼顯示，請更換控制器並通知廠商。 Reboot the control box after 1 min. If the error code still happens, please exchange control box and contact with qualified technician.
Err 4	過電壓保護 Over Voltage Protection	<ol style="list-style-type: none"> 1. 關閉電源。 Turn off the power. 2. 請檢查是否插錯供應電源或電壓過高。 Check if the control box is applied to wrong power supply or the voltage is too high. 3. 如電壓過高，則待電壓回復正常後重新開機。如無，則一分鐘後重新送電。 If the voltage is too high, please wait for reboot after power becomes normal. If not, reboot the control box after 1 min. 4. 控制器若仍有錯誤碼顯示，請更換控制器並通知廠商。 If the error code still happens, please exchange control box and contact with qualified technician.

Err 5	低電壓保護 Under Voltage Protection	<p>1. 關閉電源。 Turn off the power.</p> <p>2. 請檢查是否插錯供應電源或電壓過低。 Check if the control box is applied to wrong input power source or the input voltage is too low.</p> <p>3. 如電壓過低，則待電壓回復正常後重新開機。如無，則一分鐘後重新送電。 If the voltage is too low, please wait for reboot after power becomes normal. If not, reboot the control box after 1 min.</p> <p>4. 控制器若仍有錯誤碼顯示，請更換控制器並通知廠商。 If the error code still happens, please exchange control box and contact with qualified technician.</p>
Err 7	堵轉檢知遮斷 Over Torque	<p>1. 關閉電源。 Turn off the power.</p> <p>2. 檢查馬達動力線插頭配線是否接觸不良。 Check if any broken or loosen connection for for motor power cable.</p> <p>3. 是否有異物纏繞機頭、其他機械結構干涉異常、或紡織物是否過厚。 Check if any abnormal on machine head, other mechanism abnormal, or if the textile is too thick.</p> <p>4. 排除後重新送電，若仍無法正常運轉，請通知廠商。 Reboot the control box after troubleshooting. If the error code is still there, please contact with qualified technician.</p>
Err 10	電磁閥短路保護 Electromagnetic Valve Short Protection	<p>1. 關閉電源。 Turn off the power.</p> <p>2. 檢查電磁閥開關接線是否有錯誤或電磁閥開關是否短路。 Check if the connector for electromagnetic valve is wrongly connected, or if the electromagnetic valve is short circuit.</p> <p>3. 排除後重新送電，若仍無法正常運轉，請通知廠商。 Turn on the power again. If the machine still cannot operate normally, please contact with qualified technician.</p>

Err 11	內部通訊異常 Internal Communication Error	<p>1. 關閉電源，2 分鐘後重新送電。 Turn off the power. Reboot the control box after 2mins.</p> <p>2. 控制器若仍有故障顯示，請通知廠商。 If the error code still happens, please exchange control box and contact with qualified technician.</p>
Err 20	馬達驅動晶體溫度過高 IPM Over Temperature Protection	<p>1. 關閉電源，10 分鐘後重新送電。 Turn off the power. Reboot the control box after 10mins.</p> <p>2. 控制器若仍有故障燈顯示，請通知廠商。 If the error code still happens, please exchange control box and contact with qualified technician.</p>
Err 21	馬達編碼板異常 Motor Encoder Abnormal	<p>1. 關閉電源。 Turn off the power.</p> <p>2. 檢查馬達編碼器連接線是否接觸不良或馬達編碼器是否故障。 Check the connector between motor encoder and control box is loosen connection or if any malfunction on motor encoder board.</p> <p>3. 排除後重新送電，若仍無法正常運轉，請通知廠商。 Turn on the power again. If the machine still cannot operate normally, please contact with qualified technician.</p>
Err 22	溫度感測器異常檢知 NTC Abnormal	<p>1. 關閉電源，10 分鐘後重新送電。 Turn off the power. Reboot the control box after 10mins.</p> <p>2. 控制器若仍有故障燈顯示，請通知廠商。 If the error code still happens, please exchange control box and contact with qualified technician.</p>

Err 23	小型化定位器異常 Positioner Abnormal	<ol style="list-style-type: none"> 1. 關閉電源。 Turn off the power. 2. 檢查小型化定位器連接線是否接觸不良或小型化定位器是否故障。 Check the connector between positioner and control box is loosen connection or if any malfunction on positioner. 3. 排除後重新送電，若仍無法正常運轉，請通知廠商。 Turn on the power again. If the machine still cannot operate normally, please contact with qualified technician.
Err 24	電磁閥電壓異常保護 Electromagnetic Valve Abnormal Protection	<ol style="list-style-type: none"> 1. 關閉電源，10 分鐘後重新送電。 Turn off the power. Reboot the control box after 10mins. 2. 控制器若仍有故障燈顯示，請通知廠商。 If the error code still happens, please exchange control box and contact with qualified technician.
Err 26	控制器輔助電源溫度過高 Auxiliary Power Over Temperature Protection	<ol style="list-style-type: none"> 1. 關閉電源，10 分鐘後重新送電。 Turn off the power. Reboot the control box after 10mins. 2. 控制器若仍有故障燈顯示，請通知廠商。 If the error code still happens, please exchange control box and contact with qualified technician.
Err 27	控制器輔助電源溫度過高 Auxiliary Power Over Temperature Protection	<ol style="list-style-type: none"> 1. 關閉電源，10 分鐘後重新送電。 Turn off the power. Reboot the control box after 10mins. 2. 控制器若仍有故障燈顯示，請通知廠商。 If the error code still happens, please exchange control box and contact with qualified technician.



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The specification and/or appearances of the equipment described in this instruction book & parts list are subject to change because of modification which will without previous notice.
BKF.JUN.2018