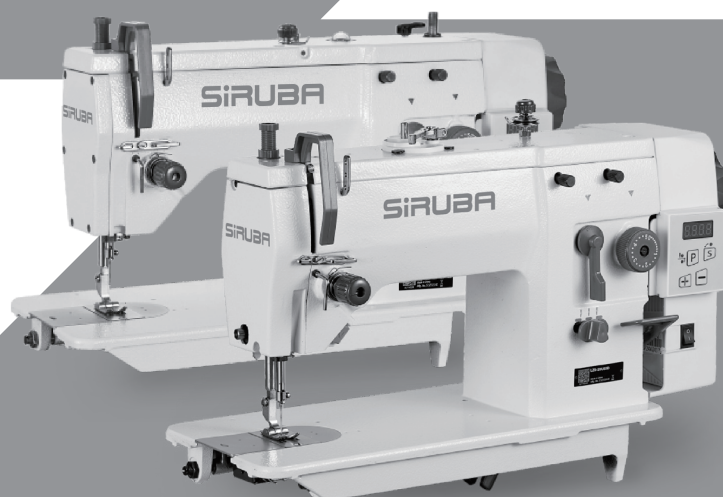


SIRUBA

電控參數說明書

ELECTRONIC CONTROL PARAMETER MANUAL

■ LZS Series



Q1 一體機節能直驅使用說明書

Q1 All-in-one Direct Drive Instruction Book

歡迎使用本公司產品，製衣行的正確投資選擇！

Welcome to use our products, it is the right investment choices in garment industry!

本說明書為本公司新研發的“Q1”一體機節能直驅使用說明書
”產品參考手冊，請認真閱讀此手冊以更好運用本公司產品。

This manual is a reference manual for our newly developed "Q1 all-in-one energy-saving direct drive motor and control box" product. Please read this manual carefully in order to make better use of our products.



安全說明：General Safety Instructions

1：電機電控接通電源時（開機狀態）請不要把腳放在腳踏板上

Do not put your feet on the pedals when the control box and motor is switched on (boot status)

2：本產品請專業人士安裝調試

Let professionals to install and debug this product

3：嚴禁在通電時打開控制箱與電機端蓋

Do not open the control box and the motor cover when energized

4：換針，穿線或更換底線時請關閉電源

Please turn off the power when changing the needle, threading or replacing the bottom line

5：安裝，拆卸維修時請拔掉電源插頭

During installation and removal service, please turn off the power and pull the plug

6：翻抬縫紉機時請關閉電源

Please turn off the power when turn lift sewing machine

7：使用本產品請遠離高頻電磁波和電波發射器等，以免所產生的電磁波干擾伺服驅動器而發生錯誤動作。

When use this product, please stay away from high-frequency electromagnetic waves and radio wave transmitters, etc., in case the electromagnetic waves generated interfere with the servo drive to occur wrong action .

鄭重申明：

Solemnly Declare:

1：不遵守安全使用說明操作規章，發生意外後果自負。

Do not comply with the manual book operating regulations and the safety requirements, all accidental occurrence should be taken by yourself.

2：未經本公司授權，請勿擅自改動產品，由此而引起的後果本公司不負任何責任。

Without our authorization, please do not alter our products, our company is not liable for any consequences arising therefrom.

目 錄

Content

一、產品介紹

Product instructions

二、控制台使用說明

Control panel Instruction

三、安裝調試：

Installation and trial-run

四、電機常用參數設置

Commonly used parameter setting

五、一般故障處理

Common faults and treatment

六、作業環境要求

Environmental Requirements

七、保修服務

Warranty service

一、產品介紹:Product Instruction

本產品由本公司自主研發, 產品個性鮮明, 真正體現出了機電一體化的概念, 更是節能, 高效, 環保, 優美集結於一身。可廣泛適用於多種縫設備。

We design and manufacture the servomotor for the purpose of Mechanotronics. This motor features in energy-saving, high production efficiency, environmental and compact Could be used for different industrial sewing machines

1. 組成部分:Construction

控制系統由控制器和電機兩部分:

The servomotor is composed of control system and motor

A. 控制器:控制箱和腳踏調速器。

A. Control system includes control box and pedal speeder

本控制系統體現出了超前的設計理念,系統操作簡單易上手,整個控制系統性能優越。

具有起步快,停車快、准等優點。而且電路模組保護功能完善:有欠壓、過流、過壓、掉電等一系列保護功能。踏調速器可實現無級調速。

This control system features is easy to use and features in excellent performance, including quick start, quick stop (sewing machine), accurate needle Position. Furthermore, the modular circuit has Self-Protection System when against lower voltage, over current, over heat etc. Speed stepless is realized by the pedal speeder.

2. 220V、110V 電機性能參數指標:Specifications

220V 電機性能參數指標 220V Specifications

電源供電電壓 Voltage	220V 單相 1phase
頻率 Frequency	50~60HZ
電機轉速 Speed	200-6000RPM
電機扭矩 Motor torque	≤2.2NM

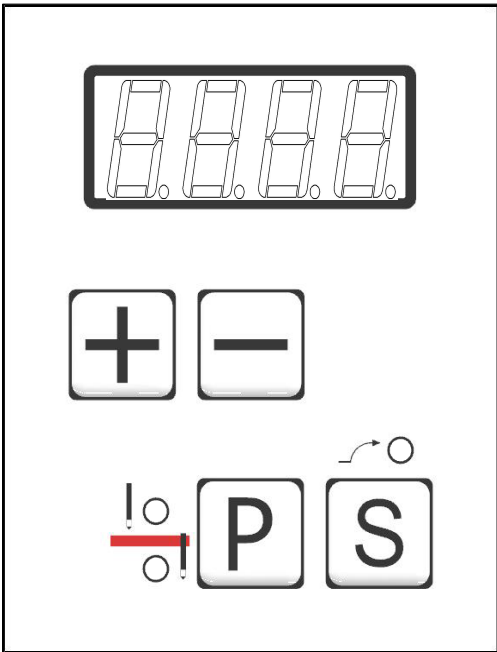
110V 電機性能參數指標 110V Specifications

電源供電電壓 Voltage	110V 單相 1 phase
頻率 Frequency	50~60HZ
電機轉速 Speed	200-6000RPM
電機扭矩 Motor torque	≤2.2NM

二、控制台使用說明

Control panel Instruction

1、主介面介紹：the main interface introduction



2、功能鍵介紹：Function Key introduction:



序 號 The serial number	按鍵圖示 Parameters of the code	功 能 說 明 function instruction
1	P (菜單鍵) (Menu button)	按住 P 鍵和 + 鍵進入使用者參數，不需要密碼;按 住 P 鍵和 - 鍵入系統參數，需要密碼進入(2013) Press P and + to enter into the user parameters, no need the code; Press P and - to enter into the system parameter, need to input code “2013”。
		單按 P 鍵時，該上方燈亮 ! 為上停針,該下方燈亮 ! 為下停針,兩個燈都不亮為無停針; Only press P , when the upper light on means upper needle position stop, when the down light on means down needle position stop, if two light all off, means no needle

		position
2	 (確認鍵) (Confirm button)	參數確定鍵 Parameter confirm button
		上方燈亮起時為慢啟動打開,燈滅為慢啟動關閉 upper this key is on means slow start open, the light off means slow start off.
3	 (數值調整鍵) (Numerical adjustment key)	向上鍵 (修改資料時加) Up key (when increasing value)
4	 (數值調整鍵) (Numerical adjustment key)	向下鍵 (修改資料時減) Up key (when increasing value)

3、進入參數的操作方法: Method of operation of entry parameter:

例:怎樣把電機的順時針轉調到逆時針轉

For example: how to adjust the motor from clockwise to counterclockwise

A. 先打開電源,

B. 先按 “” 鍵不放,再用另一隻手按 “” 號鍵,此時畫面會顯示 P-00,

C. 此時按 “” 號鍵,畫面會顯示 P-02,(P-02)就是電機正反轉參數(常用參數表上有)。

D. 此時按 “” 鍵畫面會顯示 “1”

E. 此時按 “” 號鍵把 “1” 調到 “0”(“1” 為順時針轉,“0” 為逆時針轉,常用參數表上有)。

F. 按 “” 鍵確定參數調整完畢並退出參數。

A. first open the motor,

B. Press  do not release, use another hand to press , at this time the screen shows P-00,

C. then press  button, the screen occur P-02, (P-02) is the motor direction parameter.

D. this time press , the screen shows “1”

E. This time press  to change “1”to “0”(“1” is clockwise, “0”is counterclockwise)

F. Press  to confirm the parameter adjustment is finish and exit the parameter.

4、恢復出廠設置:Restore factory settings

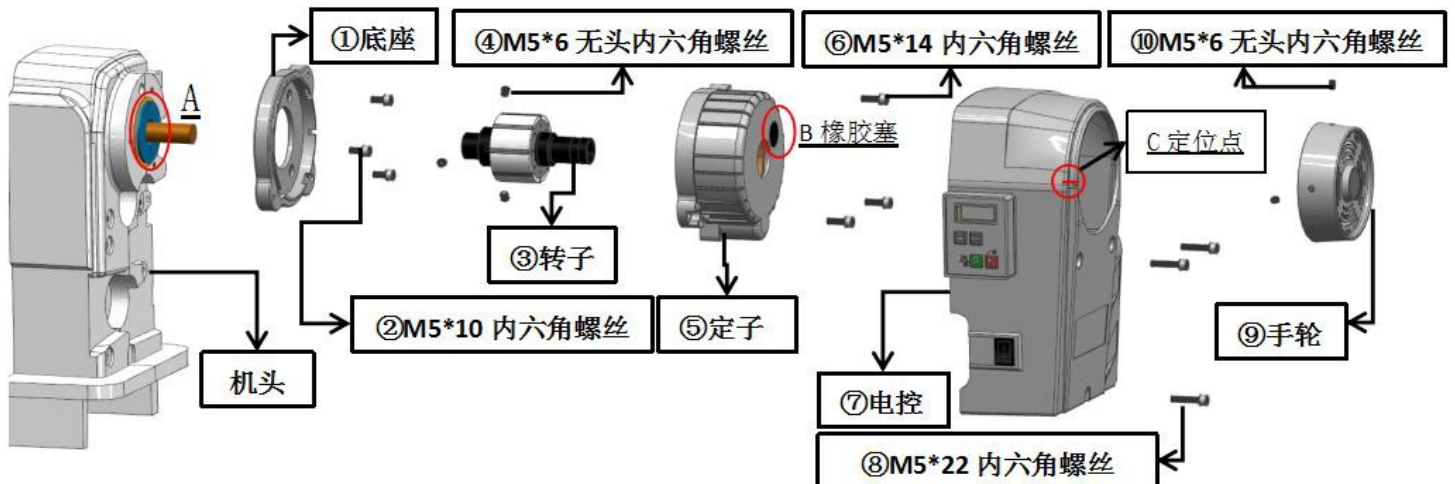
先按 “**P**” 鍵不放,再用另一隻手按 “**+**” 號鍵、此時畫面會顯示 P-00,再長按 “**S**” 鍵約 3 秒即可, (恢復出廠設置值在常用參數表裡)。

Restore factory settings: Press the **P** key, no leave, and use the other hand press the “**+**” key, the screen will display the p-00, then press “**S**” key seconds, it will Restore factory settings.

三、安裝調試：

Installation and trial-run

1.安裝說明：



A. 將①底座裝入機頭上（注：圓角方向朝左上角），用②M5*10 內六角螺絲鎖緊。

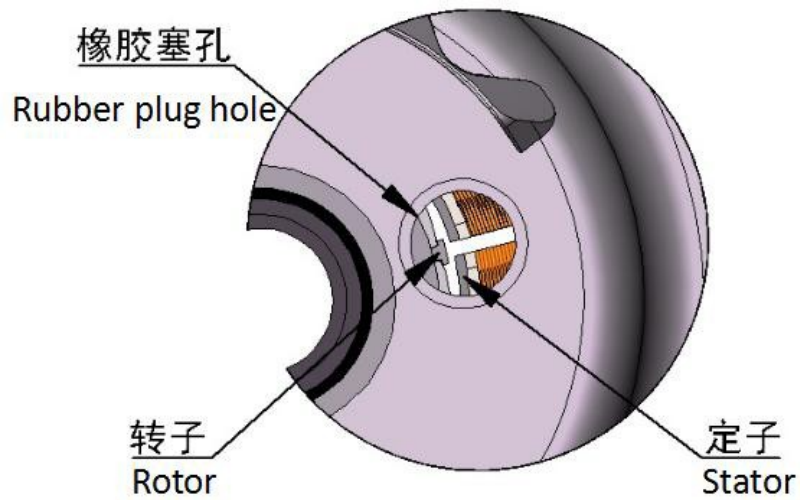
A. install ①plate into the machine(note: the round corner is up to the left), then use ②M5*10 hexagon screw locking.

B. 將用③轉子裝入主軸上並用④M5*6 無頭內六角螺絲鎖緊（注：轉子要與機頭圖 A 內部軸承裝到位）。

B. Install③ rotor on the spindle and lock with ④M5*6 headless hexagon screws. (Note: rotors should be in place with the internal bearing of picture A).

C. 將⑤定子裝入①底板上並用⑥M5*14 內六角螺絲鎖緊；拿出如圖 B 橡膠塞，目測轉子平面與定子平面是否相平，兩面相平度不得超過 1.5mm（看如下剖視圖），（注：定子裝入轉子要注意磁鐵吸力，小心夾到手，定子電機線信號線朝下）。

C. Install ⑤ stator on ① base plate and lock with ⑥M5*14 hexagon;take out the rubber as shown in picture B, and visually check whether the rotor plane is parallel to the stator plane. The flatness of the two surfaces should not exceed 1.5mm. (NOTE: Pay attention of the magnet suction when install the stator to the rotor,watch your hand, the motor wire and the signal wire should be down.)



D. 將⑦電控裝入與機頭孔位對準並用⑧M5*22 內六角螺絲鎖緊（注：鎖 M5*22 內六角螺絲扭力不易過大，過大電控外殼變形，建議扭力 8kg-10kg）。

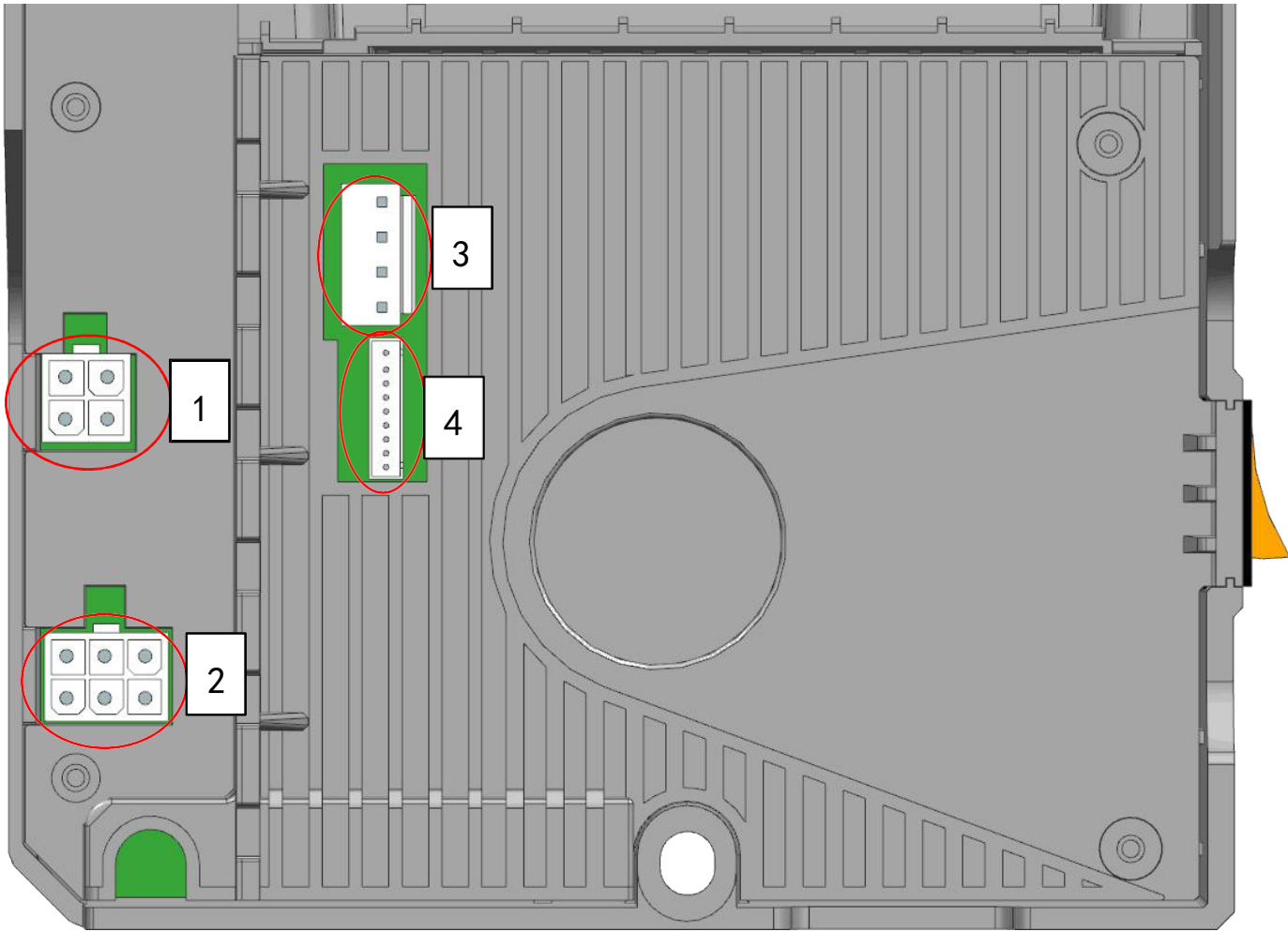
D. The ⑦ control box is put into the machine head hole position and locked with ⑧M5*22 Inner Hexagon Screw (Note: Locking M5*22 Inner Hexagon Screw, the torque can not be overshoot, if too large, the control box cover will be deformation, recommended Torque 8 kg-10 kg) .

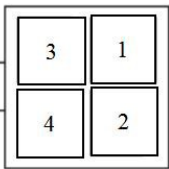
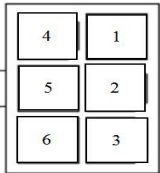
E. 將機器機針旋轉到最高位，然後用⑨手輪裝入轉子軸尾端，手輪 P 點對準電控 C 定位點並用⑩M5*10 無頭內六角螺絲鎖緊（注：電機與手輪位置間隙 1-2mm 如下圖）。

E. Adjust the machine needle to the highest position, and then install ⑨ handwheel at the end of the rotor shaft. The handwheel p point is aligned to the control box C position and locked with ⑩M5*10 Headless Hexagon Screw . (Note: The position clearance between the motor and the handwheel is 1-2 mm as shown below) .



2. 埠說明：port introduction



序號	名稱	圖片	解析	
1	調速器埠 Foot controller port		1	GND
			2	GND
			3	OUT
			4	5V
2	6P 多功能埠 6P full function port		機頭 LED	
			1:4	1:5V 4:GND
			無	
			2:5	無
			點針信號	
			3:6	3:信號 6:GND
3	電機電源線埠 motor power wire port			
4	電機信號線埠 motor signal wire port			

四、電機常用參數設置: Commonly used parameter setting

序號 The serial number	參數編號 Parameters of the code	參數名稱 The parameter name	參數範圍 Adjusting range		出廠設置 The factory Settings	備註 Other
1	P-01	最大速 Maximum speed lock	200-4000RPM		4000 轉	
2	P-02	電機方向 Direction of rotation	0 是逆針轉 0 is counter clockwise	1 是順針轉 "1" is clockwise turn	0	
3	P-03	下停角 The needle Angle	6-18 度		12 度	
4	P-04	起縫速度 Start sewing speed	200-800 轉		250 轉	
5	P-05	加速快慢 Speed up and slow	2000-4000 轉		3000 轉	
6	P-06	定針縫 Set the seam	0-999 針		0	
7	P-07	空				
8	P-08	空				
9	P-09	空				
10	P-10	自動間隙運行(跑合) Automatic clearance run(run)	把 0 把改成 1 再按 S 鍵 Then press the S key change to 1		0	關掉電源停止跑合 Turn off the electricity stopped running
11	P-11	抬壓腳起動時間 Presser foot ascend starting time	0-2000ms		0	
12	P-12	抬壓腳保護時間 Ascension presser foot protection time	1-120s		4s	
13	P-13	老款平車電機選擇 Old section flat sewing machine selection	1 是老款平縫機電機 Motor option 1 is old section flat sewing machine		0	0 是普通機 0 is ordinary sewing machine
14	P-14	最大電流限制 Maximum current limiting	50- 1000		300	

15	P-15	是否檢測上針位 Whether detect the upper needle stop position	1：檢測針位，0：不檢測 1：detecting needle 0：no detection	1	
16	P-16	使用者速度鎖定	200-4000	4000	出廠介面調整速度鎖定
17	P-17	重定出廠密碼 factory reset code	1-3	1	P-09 參數開啟後才能出現 P-17 參數、設為 3 長按 OK 鍵恢復出廠密碼 when open the parameter “P09”, then it can occur “P17”, set “3”, then long press “OK” button to recover the factory code
18	P-18	出廠密碼 factory code	0000-9999	2013	
19	P-19	慢啟動針數 slow start stitches NO.	0-15	0	
20	P-20	慢啟動速度 slow start speed	200-3500	800	
21	P-38	回顯速度 display screen shown speed			
22	P-39	回顯調速器電壓 Display screen shown the speed controller volt			
23	P-40	回顯電壓（直流） display screen shown volt(DC)			
24	P-41	開啟電壓檢測 open volt test	0:為關閉， 1:為開啟 0:close, 1:open	0	
25	P-42	掉電檢測、開機調 試器復位檢測 Power drop test, boot debugger reset test	0：關閉，1:調速器 2：掉電，3:調速器 +掉電 0:close, 1:speed controller, 2:power drop, 3:speed controller and power drop	2	

26	P-43	安全開關 safety switch	0 為關閉, 1: 為開啟 0:close, 1:open	1	
27	P45	速度切換 speed switch	1 厚料 2 薄料 1 thick material, 2 thin material		

五、一般故障處理: Common faults and treatments

序號 The serial number	錯誤碼 Error code	錯誤內容 Error content	錯誤問題的多種可能 Several possible error problem
1	Er01	找不到停針位 Not find the needle position	1. 定位器信號插頭未插好 2. 定位器感應位置靠近一點與磁鋼(1mm-15mm)距離 1. locator signal plugs not inserted 2. the locator induction position close to the point keep 1mm-1.5mm distance and magnetic steel
2	Er02:	開機沒有檢到調速器 Not find the speed controller	1. 開機時調速器電壓接近 0V 2. 調速器插頭沒有插 3. 調速器線斷了 1. The speed controller volt is close to 0V when starting 2. The speed controller plug is not plugged 3. The speed controller line is broken
3	Er03:	電機霍兒或相位線錯誤 Motor Hall or phase error	1. 九針插頭接觸不良: 2. 電機沒有安裝好 3. 霍兒壞 1. Nine hole plug contact undesirable 2. The motor doesn't install good 3. Hall bad
4	Er04:	堵轉保護 Block protection	1. 電機超載 2. 電機與電控根連接的四心線接觸不好 3. 電機信號線接觸不良 1. The motor overload 2. The motor and the controller connected four hole line contact is not good 3. the motor signal wire not connect well
5	Er05:	硬體過流保護 Hardware over-current Protection	1. 電機超載 2. 信號線接觸不良 3. 電機三相線或繞組短路 4. 電控故障 1. Motor overload 2. Poor signal line contact 3. Motor three-phase line or winding short circuit 4. Control box failure

6	Er07:	串口通信時錯誤 Serial per communication	顯示幕至主機板信號線不良或主機板壞 Display to the system board signal bad or bad
7	Er16:	過壓保護 overload protection	1. 電機驅動電源電壓過高，220V 電源電壓超過限定值（AC310V），或負載慣性過大導至再生電壓超過限定值（DC440V），或電壓檢測回路故障。 注：（110V 控制系統電源電壓超過限定值（AC155V），或負載慣性過大導至再生電壓超過限定值（DC220V）。 1. The motor drive power supply voltage is too high, the 220V power supply voltage exceeds the limit value(AC310V), or the load inertia is too large to the regenerative voltage exceeds the limit value(DC440V), or the voltage detection circuit fails. Note:(110V control system power supply voltage exceeds limit value(AC155V), or load inertia is too large to regeneration voltage exceeds limit value(DC220V).
8	Er20 :	欠壓保護 Deficiency protection	1. 電機驅動電源電壓過低，220V 電源電壓低於限定值（AC91V），或電機驅動電源電壓低於限定值（DC130V），或電壓檢測回路故障。 注：（110V 電源電壓低於限定值（AC45.5V），或電機驅動電源電壓低於限定值（DC65V）） 1. The motor drive power supply voltage is too low, the 220V power supply voltage is lower than the limit value(AC91V), or the motor drive power supply voltage is lower than the limit value(DC130V), or the voltage detection circuit fails. Note:(110 V power supply voltage is below the limit(AC45.5 V), or motor drive power supply voltage is below the limit(DC 65V))
9	Er22 :	調速器未復位 speed controller is not reset	開機檢測到調速器輸出電壓高於啟動電壓 調速器故障或調速器未重定 1. The boot detected that the speed controller output voltage is higher than the boot voltage 2,Fault of speed controller or non-reset of speed controller
10	Er23 :	安全開關 safety switch	1. 開機後檢測到交流供電回路斷開，或掉電檢測回路故障 1.Disconnected or disabled AC power supply circuit detected after boot

六、作業環境要求：Environmental Requirements

1. 請不要在過潮濕環境中作作業

Please do not work at damp place

2. 用戶供電應保持穩定 210V-240V

The voltage requires being stable (210v-240v)

3. 用戶使用前必須接地, 確保人身安全

Must be adequately grounded for safety

4. 不要在過熱地方作業

Do not work at high temperature

5. 控制系統與電機不要在強磁高輻射環境中作業, 以免干擾而使系統錯誤

Do not run motor and control system near to ferromagnetic or high-radiance area

七、保修服務:warranty Service

1. 本產品自購買起免費保修 1 年, 終身維護。保修期內除人為損壞以外出現任何品質問題可免費維修。

Our products come with year of quality guarantee, from the ship day. Within guarantee period, service is free of charge, unless man-made damage or misuse

2. 在保修期內, 以下情況出現損壞本公司不給於保修服務。

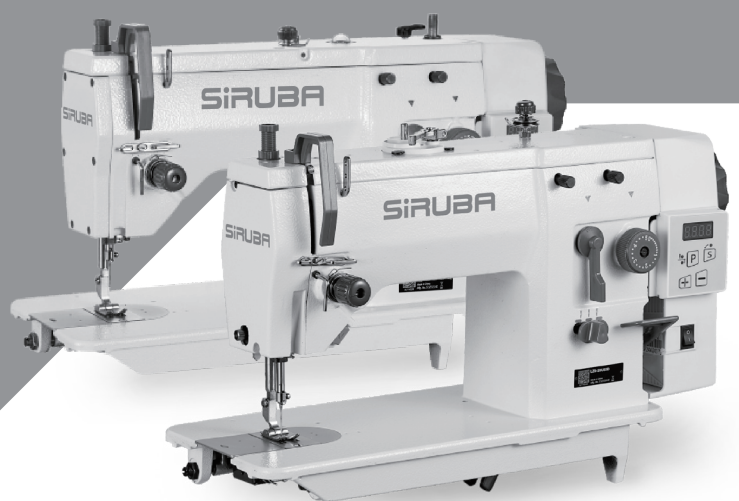
During the guarantee period, our free service does not cover below:

(1). 未經本公司同意自行拆卸, 修理, 改裝造成的故障或損壞。

Dismantle the motor unit without permission, and cause damage.

3. 但凡出現無法解決的問題可以聯繫本公司。

please contact us whenever have problem.



高林股份有限公司
KAULIN MFG. CO., LTD.

由於對產品的改良及更新，本產品使用說明書中與零件圖之產品及外觀的修改恕不事先通知！
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.
LZS Series.OCT.2025