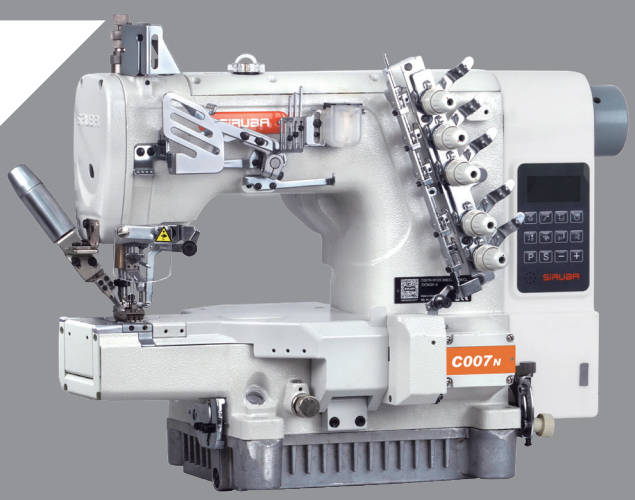
SIRUBA

電控參數說明書

ELECTRONIC CONTROL PARAMETER MANUAL

C007N/UTM



CE

說明書 V

No. 10404118

⚠安全指示

1）在安裝或使用本產品前，使用者必須詳細閱讀本操作手冊。
2）本產品須由受過正確訓練的人員來安裝或操作。安裝作業時必須關閉所有電源，切記不可帶電操作。
3)所有標有⚠符號的指示，必須特別注意並按照說明書上的執行，以免造成不必要的損害。
4）為安全起見，禁止以延長線作電源座供應二項以上的電器產品使用。
5）在連接電源線時，必須確定工作電壓符合本產品標識中規定的額定電壓值。
6）請不要在日光直接照射的場所、室外及室溫 45℃以上或 0℃以下的場所操作。
7)請不要在暖氣(電熱器)旁、有露水的場所及在相對濕度 10%以下或 90%以上的場所操作。
8）請不要在灰塵多的場所、具有腐蝕性物質的場所及有揮發性氣體的場所操作。
9）請注意所有電源線、信號線、接地線等接線時不要受壓或過度扭曲，以確保使用安全。
10)電源線的接地端須以適當大小的導線和接頭連接到生產工廠的系統地線，此連接必須被永久固定。
11）所有可轉動的部分，必須以所提供的零件加以防範露出。
12)在安裝完成第一次開電後，先關閉切線功能以低速操作縫紉機並檢查轉動方向是否正確、運轉是否穩定。
13）在進行以下操作前，請先關閉所有電源：
1. 在控制箱與馬達上插拔任何連接插頭時。
2. 穿針線時。
3. 翻抬縫紉機機頭時。
4. 修理或做任何機械上的調整時。
5. 機器閒置不用時。
14）修理或高層次的保養工作，僅能由受過訓練的機電技師來執行。
所有維修用的零件，須由本公司提供認可，方可使用。
15)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裝置而發生誤動作。
16）請不要以不適當物體來敲擊或撞擊本產品及各裝置。

保修期限

本產品保修期限為購買日期起一年內或出廠月份起兩年內。

保修內容

本產品在正常情況使用且無人為操作失誤的前提下，於保修期間無償為客戶維修使能正常操作。

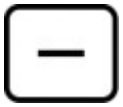
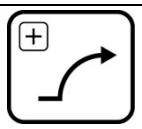
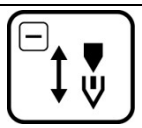
但以下情況於保修期間將收取維修費用：

1. 不當使用包括誤接高壓電源、將產品移做其它用途、自行拆卸、維修、更改、或不依規格範圍使用、進水進油及插入異物於本產品。
2. 火災、地震、閃電、風災、水災、鹽蝕、潮濕、異常電壓及其它天災或不當場所造成的損害。
3. 客戶購買後摔落本產品，或客戶自行運輸（或託付運輸公司）造成的損害。

＊ 本產品在生產及測試上皆盡最大努力和嚴格控制使其達到高品質及高穩定的標準，但外部的電磁或靜電干擾或不穩定的供應電源，仍可能對本產品造成影響或損害，因此操作場所的接地系統一定要確實做好，並建議使用者安裝故障安全防護裝置（如漏電保護器）。

1 按鍵顯示及操作說明

1.1 按鍵說明

功能	按鍵	車縫動作說明
功能鍵		若點擊，進入或退出使用者參數設定介面。 若長按，轉換到密碼輸入介面。輸入正確密碼，短按 S 鍵確認，可進入高級參數設定介面。
確認鍵		對所選參數號內容進行查看和保存：選擇好參數號後按此鍵可以進行查看和修改操作，修改參數值後按此鍵則退出並保存參數。
快速鍵		若點擊，增加速度。 若長按，連續增加速度。
減速鍵		若點擊，減少速度。 若長按，連續減少速度。
機頭燈亮度鍵		主介面，若點擊，調節機頭燈的亮度。 參數介面，若點擊，增大千位的數值。
慢速起縫鍵		主介面，若點擊，使用或取消慢速起縫功能。 參數介面，若點擊，增大百位的數值。
自動抬壓腳鍵		主介面，若點擊，切換自動抬壓腳關閉、中途停車抬壓腳、切線後抬壓腳、中途停車與切線後抬壓腳。 參數介面，若點擊，增大十位的數值。
吸風鍵		主介面，若點擊，設置使用或取消吸風功能。 參數介面，若點擊，增大個位的數值。
停針位鍵		主介面，若點擊，切換上、下停針位。 參數介面，若點擊，減小千位的數值。
掃線鍵		主介面，若點擊，設置使用或取消掃線功能。 參數介面，若點擊，減小百位的數值。
上刀切線鍵		主介面，若點擊，設置使用或取消上刀切線功能。 參數介面，若點擊，減小個位的數值。
下刀切線鍵		主介面，若點擊，設置使用或取消下刀切線和上刀切線功能。 參數介面，若點擊，減小個位的數值。

1.2 協助工具

1.2.1 調試模式

在主介面長按“  ”鍵，切換到調試參數項介面。P92 項電機電角度校正、P72 項上定位快捷調整、P100 項下切刀測試模式。

1.2.2 恢復出廠設置

在主介面同時長按“  ”和“  ”，可恢復出廠設置。

2 參數表

參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P01	最高轉速（rpm）	100-9000	3500	車縫時的最高轉速設置。
P02	加速曲線調整（%）	10-100	80	控速器爬升斜率設置。 斜率值愈大，速度愈陡；斜率值愈小，速度愈慢。
P03	針停定位選擇	UP/DN	UP	UP：上停針 DN：下停針
P04	上掃線電磁鐵輸出占空比	0-100	75	
P05	上掃線動作時間（ms）	10-990	20	
P06	上掃線回程時間（ms）	10-990	15	
P07	慢速起縫速度（rpm）	200-1500	1000	
P08	慢速起縫針數（針）	1-99	2	
P14	慢速啟動	ON/OFF	OFF	
P21	踏板前踩位置	30-1000	500	
P22	踏板回中位置	30-1000	420	
P23	踏板抬壓腳位置	30-1000	280	
P24	踏板切線位置	30-1000	130	
P27-N06	自動計件選擇	0-50	1	0：P41 項切線計數器不自動計數 1-50：計數器切線次數
P29	切線停車力度	1-45	20	
P37	上刀切線出力功能設定	0-11	1	
P38	中途停車自動抬壓腳設定	ON/OFF	ON	
P39	中途停車自動抬壓腳	UP/DN	DN	UP：開啟 DN：關閉
P40	切線後自動抬壓腳	UP/DN	DN	UP：開啟 DN：關閉
P41	計數器顯示	0-9999		車縫完成件數顯示。長按減號鍵可計數清零。
P42-N01	電控版本號			
P42-N02	選針盒版本號			
P42-N03	轉速			
P42-N04	腳踏板 AD 值			
P42-N05	機械角度（上定位）			
P42-N06	機械角度（下定位）			
P42-N07	母線電壓 AD 值			
P42-N11	狀態資訊			
P43	馬達轉動方向設置	CCW/CW	CCW	CW：順時針方向 CCW：逆時針方向
P44	正常停車力度	1-45	15	

P45	吸風出力的週期信號（%）	1-80	80	
P48	低速（定位速度）（rpm）	200-1000	500	最低速度限制調整。
P52	延遲馬達啟動，保護壓腳下放時間（ms）	10-990	100	踩下時延遲啟動時間，以配合自動抬壓腳放下的確認。
P53	抬壓腳功能選擇	0-2	1	0：關閉。 1：反踏和半反踏都有抬壓腳。 2：半反踏無抬壓腳，反踏有抬壓腳。
P55	上刀切線動作時間（ms）	10-990	20	
P56	開機自動找定位	0-2	0	0：始終不找上定位 1：始終找上定位 2：若電機已經處於上定位時不再找上定位
P57	抬壓腳保護時間（s）	1-120	10	抬壓腳保持時間後強制關閉。
P58	上定位調整	0-1439	40	上定位調整，數值減少時會提前停針，數值增加時會延遲停針。
P59	下定位調整	0-1439	750	下定位調整，數值減少時會提前停針，數值增加時會延遲停針。
P60	測試速度（rpm）	100-6000	4000	設置測試速度。
P61	A 項測試	ON/OFF	OFF	持續運行測試模式。
P62	B 項測試	ON/OFF	OFF	全功能啟停測試模式。
P63	C 項測試	ON/OFF	OFF	無定位、無功能啟停測試模式。
P64	測試執行時間	1-250	50	
P65	測試停止時間	1-250	50	
P69	電機類型選擇	0-50	0	
P70	機型選擇	1-45	31	
P72	上定位快捷調整	0-2399		調整上停針位元，顯示的數值會隨手輪位置變化而變化，按“S”鍵可保存當前位置（數值）為上停針位。
P73	下定位快捷調整	0-2399		調整下停針位元，顯示的數值會隨手輪位置變化而變化，按“S”鍵可保存當前位置（數值）為下停針位。
P76	下剪線出刀行程	0-800	580	
P77	抬壓腳行程高度	0-1000	580	
P78	下剪線出刀加速度	1-30	10	
P79	下剪線收刀加速度	1-40	12	
P80	抬壓腳加速度	1-60	20	
P81	放壓腳加速度	1-60	12	
P86	上下定位距離	0-2399	1200	
P87	上切線回程延時（ms）	10-990	15	
P88	上刀切線電磁鐵輸出占空比	0-100	75	
P89	交流過壓值設置	500-1023	880	
P92	主軸電機電角度校正		160	按停針定位選擇鍵讀取編碼器起始角度，出廠已設置，請勿隨意更改（參數值不可手動更改，隨意更改會導致控制箱、電機出現異常或損壞）
P93	半反踏延遲時間（ms）	10-900	150	
P100	下切刀測試模式	0-800	0	0 的時候默認收刀，大於 0 的時候走相對應數值的行程（如調成 200，再按保存，剪刀走 200 的行程），退出 P100 後默認收刀。

P105	上刀切線埠輸出選擇	0-3	1	0：上刀切線；1：上掃線；2：上刀切線、上掃線同時存在；3：吹氣；
P107	吸風動作時間（s）	0-60	0	
P108	直流電機驅動輸出使能	0-1	1	0：關閉 1：開啟
P110	切線/壓腳步進電機零點校正	-500~500	0	
P111	抬壓腳保持電流（0.1A）	7-25	10	
P112	抬壓腳電流補償（0.1A）	0-9	5	
P119	電磁鐵過流保護	0-1	1	0：不報警，關閉輸出。 1：報警，並停機。

注：參數初始值僅供參考，實際參數值以實物為准。

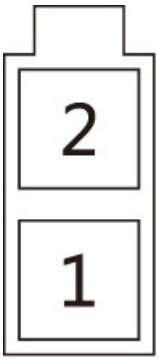
3 錯誤代碼表

錯誤碼	問題描述	解決措施
E01	電壓高	1、電網電壓是否高於 AC260V。 2、如果是自行發電供電，請降低發電機功率。 3、若仍不能正常工作，請更換控制箱並通知售後服務。
E02	電壓低	1、是否插入低電壓。 2、恢復出廠設置。 3、若仍不能正常工作，請更換控制箱並通知售後服務。
E03	主 CPU 與面板 CPU 通信異常	1、關閉系統電源，檢測顯示幕的連線是否鬆動或脫落，將其恢復正常後重啟系統。 2、關閉系統電源，拆下電控箱只插電源線通電，是否報警 E05，如還是報警 E03，更換控制箱並通知售後服務。
E05	控速器信號異常	1、檢查控速器接頭是否鬆動或脫落，將其恢復正常後重啟系統。 2、若仍不能正常工作，請更換控制箱或控速器並通知售後服務。
E07	主軸電機堵轉	1、關閉電源，檢查手輪是否可以順暢轉動（手轉手輪），如果無法轉動請排查機械。 2、關閉電源，檢查電機電源介面是否鬆動，插好後重啟。 3、檢查上停針位是否正確，如果不正確請調整上定位位置。 4、若仍不能正常工作，請更換控制箱或主軸電機並通知售後服務。
E10	電磁鐵過流保護	關閉系統電源，檢查電磁鐵（電磁閥）是否損壞或短路。
E09 E11	主軸電機編碼器定位信號異常	1、關閉系統電源，檢查主軸電機編碼器介面是否鬆動或脫落，將其恢復正常後重啟系統。 2、檢查電機零點校正設置是否正確；重新設置電機零點校正，編碼器碼盤是否有油，如果有請清理乾淨。 3、若仍不能正常工作，請更換控制箱或主軸電機並通知售後服務。
E14	主軸電機編碼器信號異常	1、關閉系統電源，檢查主軸電機編碼器介面是否鬆動或脫落，將其恢復正常後重啟系統。 2、檢查光柵安裝是否正確（光柵螺絲有沒有固緊，光柵是不是在編碼器頭居中位置）。 3、檢查光柵碼盤是不是有油，如果有，請清理乾淨，復原後重啟系統。

		4、若仍不能正常工作，請更換控制箱或主軸電機並通知售後服務。
E15	主軸電機驅動過流	1、請檢查電機電源線有沒有接觸不良。 2、請檢查電機電源線有沒有被壓破。 3、請更換控制箱或主軸電機並通知售後服務。
E16	切線開關沒到正確位置	關閉系統電源，檢查切線機構是否回到正確位置。
E20	主軸電機啟動失敗	1、關閉系統電源，檢查主軸電機電源線介面、編碼器介面是否鬆動或脫落，將其恢復正常後重啟系統。 2、檢查電機零點校正設置是否正確；重新設置電機零點校正。 3、若仍不能正常工作，請更換控制箱或主軸電機並通知售後服務。
E92	步進電機剪線時過流	1、關閉系統電源，觀察剪線(壓腳)步進電機是否卡住。如卡住則先排除機頭機械故障。如正常，檢查剪線(壓腳)步進電機介面是否鬆動或脫落，將其恢復正常後重啟系統。 2、若仍不能正常工作，請更換控制箱或剪線(壓腳)步進電機並通知售後服務。
E94	剪線(壓腳)步進電機編碼器定位信號異常	1、關閉系統電源，觀察剪線(壓腳)步進電機是否卡住。如卡住則先排除機頭機械故障。如正常，檢查剪線(壓腳)步進電機編碼器介面是否鬆動或脫落，編碼器碼盤是否有油，如果有請清理乾淨，將其恢復正常後重啟系統。 2、若仍不能正常工作，請更換控制箱或剪線(壓腳)步進電機並通知售後服務。
E95	剪線(壓腳)步進電機編碼器信號異常	1、關閉系統電源，檢查剪線(壓腳)步進電機編碼器介面是否鬆動或脫落，將其恢復正常後重啟系統。 2、若仍不能正常工作，請更換控制箱或剪線(壓腳)步進電機並通知售後服務。
E96	剪線(壓腳)步進電機啟動失敗	1、關閉系統電源，檢查剪線(壓腳)步進電機電源線介面、編碼器介面是否鬆動或脫落，將其恢復正常後重啟系統。 2、若仍不能正常工作，請更換控制箱或剪線(壓腳)步進電機並通知售後服務。
E97	步進電機剪線時堵轉	1、關閉系統電源，觀察剪線(壓腳)步進電機是否卡住。如卡住則先排除機頭機械故障。如正常，檢查剪線(壓腳)步進電機電源線介面、編碼器介面是否鬆動或脫落，將其恢復正常後重啟系統。 2、若仍不能正常工作，請更換控制箱或剪線(壓腳)步進電機並通知售後服務。
E98	步進電機抬壓腳時堵轉	1、關閉系統電源，觀察剪線(壓腳)步進電機是否卡住。如卡住則先排除機頭機械故障。如正常，檢查剪線(壓腳)步進電機電源線介面、編碼器介面是否鬆動或脫落，將其恢復正常後重啟系統。 2、若仍不能正常工作，請更換控制箱或剪線(壓腳)步進電機並通知售後服務。
E99	步進電機抬壓腳時過流	1、關閉系統電源，觀察剪線(壓腳)步進電機是否卡住。如卡住則先排除機頭機械故障。如正常，檢查剪線(壓腳)步進電機電源線介面、編碼器介面是否鬆動或脫落，將其恢復正常後重啟系統。 2、若仍不能正常工作，請更換控制箱或剪線(壓腳)步進電機並通知售後服務。

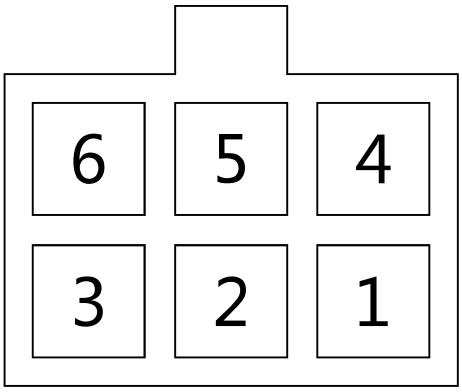
4 埠示意圖

2P 埠示意圖



1.LED 衣車燈：1（DGND）、2（+5V）

6P 埠示意圖



1.上刀切線：1(DGND）、4（32V）
2.吸風：2(DGND)、5（32V）
3.掃線：6(DGND)、3（32V）

C007N_UTM Single-Step Control Box Manual for Stretch Seam

Safety ⚠instructions

1) Before installing or using this product, the user must carefully read this operating manual.
2) This product must be installed or operated by properly trained personnel. All power sources must be disconnected during installation, and under no circumstances should live circuits be handled.
3) All symbols ⚠marked with signs must be carefully observed and implemented in accordance with the instructions to avoid unnecessary harm.
4) For safety reasons, it is prohibited to use extension cords as power sockets to supply electricity to more than two electrical appliances.
5) When connecting the power cord, ensure the operating voltage matches the rated voltage specified in the product labeling.
6) Do not operate in direct sunlight, outdoors, or in environments with room temperatures above 45°C or below 0°C.
7) Do not operate near heating devices (electric heaters), in areas with condensation, or in environments with relative humidity below 10% or above 90%.
8) Do not operate in environments with high dust concentration, corrosive substances, or volatile gases.
9) Please ensure that all power cords, signal cables, and grounding wires are not subjected to pressure or excessive twisting during installation to guarantee safe operation.
10) The grounding terminal of the power cord must be connected to the system ground wire of the production facility using a conductor and connector of appropriate size, and this connection must be permanently secured.
11) All rotating parts must be secured with provided components to prevent exposure.
12) After completing the installation and powering on the machine for the first time, first disable the tangent function to operate the sewing machine at low speed, then verify the rotation direction and ensure stable operation.
13) Before performing the following operations, please turn off all power sources:
    1. When inserting or removing any connection plugs between the control box and the motor.
    2. During needle threading.
    3. When lifting the head of a sewing machine.
    4. During repairs or any mechanical adjustments.
    5. When the machine is idle and not in use.
14) Repair or high-level maintenance tasks can only be performed by trained electromechanical technicians.
    All maintenance parts must be provided and approved by our company before use.
15) When using this product, keep it away from high-frequency electromagnetic waves and radio wave emitters to prevent electromagnetic interference from servo drive devices, which may cause malfunctions.
16) Do not strike or impact this product and its components with inappropriate objects.

term of service

The warranty period for this product is one year from the purchase date or two years from the month of manufacture.

Warranty content

Under normal usage conditions and without any human operational errors, this product provides complimentary repairs during the warranty period to restore normal operation for customers.

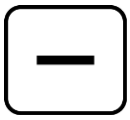
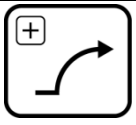
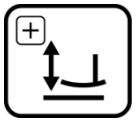
However, repair costs will be charged during the warranty period for the following situations:

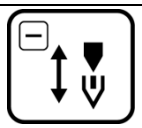
1. Improper use includes incorrect connection to high-voltage power sources, repurposing the product for other applications, unauthorized disassembly, repair, modification, or operation outside specified parameters, as well as water/oil ingress and insertion of foreign objects into the product.
2. Damage caused by fire, earthquake, lightning, wind disaster, flood, salt erosion, humidity, abnormal voltage, and other natural disasters or improper site conditions.
3. Damage caused by the customer dropping the product after purchase or self-transportation (or entrusting transportation companies).

* This product undergoes rigorous production and testing processes with maximum effort and strict control to ensure high quality and stability. However, external electromagnetic interference, static electricity, or unstable power supply may still affect or damage the product. Therefore, it is essential to implement a reliable grounding system in the operating environment. Users are advised to install fault safety protection devices (such as residual current devices).

1 Key display and operation instructions

1.1 Key Description

function	key	Description of seam stitching movements
Function parameter edit key		Click to enter or exit the user parameter settings interface. Long press to switch to the password input screen. Enter the correct password and press the S key to confirm to access the advanced parameter settings interface.
Save key for parameter checks		View and save the selected parameter values: After selecting the parameter number, press this key to view and modify it. Press this key again after modifying the parameter value to exit and save the changes. Long press the main interface to access P100, P92, and P72.
Accelerator Key		Click to increase speed. Long press to increase speed continuously.
Shift key		Click to slow down. Long press to continuously reduce speed.
Headlight brightness key		On the main interface, click to adjust the headlight brightness. In the parameter interface, clicking will increase the value by the thousand place.
slow stitch key		On the main interface, click to enable or disable the slow stitch function. In the parameter interface, clicking will increase the value in the hundreds place.
Automatic pressure adjustment foot pedal		On the main interface, clicking will switch between automatic lifting and pressing foot shutdown, mid-process stopping with lifting and pressing foot, post-tangent lifting and pressing foot, mid-process stopping with post-tangent lifting and pressing foot. In the parameter interface, clicking will increase the value by ten digits.
Vacuum key		On the main interface, click to enable, set, or disable the suction function. Parameter interface. Click to increase the digit value.

function	key	Description of seam stitching movements
Stop needle position key		On the main interface, clicking will switch between upper and lower needle stopping positions. In the parameter interface, clicking reduces the value by the thousand place.
Scan key		On the main interface, click to enable, set, or disable the scan function. In the parameter interface, clicking reduces the value in the hundreds place.
Cutting Line Key		On the main interface, click to enable or disable the upper knife cutting function. In the parameter interface, clicking reduces the value of the unit digit.
Left slash tangent key		On the main interface, click to enable or disable the lower and upper knife cutting functions. In the parameter interface, clicking reduces the value of the unit digit.

1.2 Auxiliary Functions

1.2.1 Debugging Mode

Long press the "" key  on the main interface to switch to the debugging parameter interface. P92 item: Motor electrical angle correction, P72 item: Quick positioning adjustment, P100 item: Cutting tool test mode.

1.2.2 Restore factory settings

Long press both "" and "  " on the  home screen to restore factory settings.

1.2.3 User parameter latching

Select a parameter item, press  and hold the "" key to enter the  parameter value interface, then long press the "" key to display SAVE. This indicates the parameter value of the current item is locked. When restoring factory settings, the parameter value will not be restored.

2 Parameter Table

Parameter item	Chinese description	scope	initial value	Content value name description and remarks
P01	Maximum speed (rpm)	100-9000	3500	Maximum rotational speed setting during sewing.
P02	Acceleration curve adjustment (%)	10-100	80	Control the climb rate setting of the speed controller. The steeper the slope value, the faster the velocity. The smaller the slope value, the slower the velocity.
P03	Pinning and positioning selection	UP/DN	UP	UP: Upper stop injection DN: Lower stop dose
P04	Output duty cycle of top-pulling line electromagnet	0-100	75	
P05	Up sweep line action time (ms)	10-990	20	
P06	Return time for upward sweep line (ms)	10-990	15	
P07	Slow stitch speed (rpm)	200-1500	1000	

P08	Slow stitch count (stitches)	0-99	2	
P14	Slow startup	ON/OFF	OFF	
P15	Headlight brightness setting	0-4	2	
P21	Front pedal position	30-1000	500	
P22	Pedal return position	30-1000	420	
P23	Pedal lift and pressure foot position	30-1000	280	
P24	Pedal tangent position	30-1000	130	
P27-N06	Auto Select by Piece	0-50	1	0: The tangent counter in item P41 does not count automatically 1-50: Number of tangent lines counted
P27-N13	Tangent counter mode selection	0-1	0	0: Additive sewing counter; 1: Subtractive sewing counter
P29	tangent parking force	1-45	20	
P37	Set the output function for the upper blade cutting line	0-11	1	
P38	Automatic pressure foot elevation setting during mid-route parking	ON/OFF	ON	
P39	Automatic pressure foot lifting during mid-route parking	UP/DN	DN	UP： open DN： close
P40	Automatic lifting of pressure foot after tangential application	UP/DN	DN	UP： open DN： close
P41	counter indicate	0-9999	0	Number of completed seam stitches displayed. Long press the minus sign key to reset the count.
P42	character display			N01 Electronic Control Version Number N02 Panel Version Number N03 Vehicle Sewing Speed N04 Pedal AD N05 Upper positioning angle N06 Lower positioning angle N07 Bus voltage AD
P43	Motor rotation direction setting	CCW/CW	CW	CW： clockwise sense CCW: Counterclockwise
P44	Normal parking force	1-45	15	
P45	Periodic signal of suction air output (%)	1-80	80	
P48	Low speed (positioning speed) (rpm)	200-1000	500	Minimum speed limit adjustment.
P52	Delay motor startup, protection voltage release time (ms)	10-990	100	Delay the activation time upon foot depression to synchronize with the confirmation of automatic pressure foot elevation and release.
P53	Pressure Foot Function Selection	0-2	1	0: Close. 1: Both reverse step and half reverse step involve lifting and pressing the foot. 2: Half reverse step without lifting and pressing the foot, reverse step with lifting and pressing the foot.
P55	Time of the cutting action (ms)	10-990	20	
P56	Auto locate upon startup	0-2	0	0: Never locate 1: Always find your positioning 2: If the motor is already in the upper positioning position, do not attempt to reposition it.
P57	Pressure foot protection time (s)	1-60	10	Forcefully close after maintaining elevated foot pressure for the specified duration.

P58	Top positioning adjustment	0-2399	40	During upper positioning adjustment, needle withdrawal is prematurely stopped when the numerical value decreases, and delayed when the numerical value increases.
P59	Lower positioning adjustment	0-2399	750	During lower positioning adjustment, needle withdrawal is prematurely stopped when the numerical value decreases, and delayed when the numerical value increases.
P60	Test speed (rpm)	100-5500	4000	Set test speed.
P61	Test A	ON/OFF	OFF	Continue running the test mode.
P62	Test B	ON/OFF	OFF	Full-function start-stop test mode.
P63	Option C test	ON/OFF	OFF	No positioning or functional start-stop test mode.
P64	Test runtime	1-250	50	
P65	Test stop time	1-250	50	
P68	Maximum speed limit (rpm)	100-5500	4500	
P69	Motor Type Selection	0-50	0	
P70	Device selection	1-45	36	
P72	Quick adjustment for top positioning	0-2399		Adjust the upper needle stop position. The displayed value will change accordingly with the needle position. Press the "S" key to save the current position (value) as the upper needle stop.
P73	Quick adjustment for bottom positioning	0-2399		Adjust the stop needle position, and the displayed value will change accordingly with the needle position. Press the "S" key to save the current position (value) as the stop needle position.
P76	Lower cutting line stroke	0-800	755	
P77	Pressure foot stroke height	0-2000	670	
P78	Downcutting line exit acceleration	1-30	10	
P79	Downward cutting line blade acceleration	1-40	12	
P80	Pressure foot acceleration	1-60	20	
P81	Pressure relief leg acceleration	1-60	12	
P86	Vertical alignment distance	0-2399	1200	
P87	Upper tangent return delay (ms)	10-990	15	
P88	Output Duty Cycle of Cutting-Line Electromagnet with Cutting Blade	0-100	75	
P89	AC overvoltage value setting	500-1023	880	
P92	Correct motor angle		160	Read the motor angle using the needle positioning selection key. The settings are factory defaults and should not be altered arbitrarily (random modification may damage the motor).
P93	Half-step delay time (ms)	10-900	150	
P100	Enable undercutting knife test	0-2000	0	When the value is 0, the scissors retract by default. When greater than 0, they move the corresponding distance (e.g., set to 200 and press Save to move the scissors 200 units). After exiting P100, the scissors retract by default.
P105	Select output for the upper blade cutting line port (by	0-3	0	0: Upper blade cutting line; 1: Upper sweeping line; 2: Both upper blade cutting line and upper sweeping line present; 3: Blowing operation;

	chronological order)			
P107	Vacuum suction duration (s)	0-60	0	
P108	Select suction function	0-1	0	0: Close 1: Turn on
P110	Zero Point Calibration for Tangential/Pressure Step Motor	-500 ~ 500	0	
P119	Overcurrent Protection for Electromagnets	0-1	1	0: Do not report to the police and turn off the output. 1: Alarm and shutdown the system.

Note: The default parameter values are for reference only. Actual parameter values are subject to the physical product.

3 Error Code Table

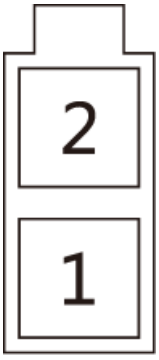
Error code	problem description	countermeasure
E01	High voltage	1. Is the grid voltage higher than AC260V? 2. If you are generating and supplying power independently, reduce the generator power output. 3. If normal operation still cannot be achieved, replace the control box and notify after-sales service.
E02	Low voltage	1. Whether low voltage is inserted. 2. Restore factory settings. 3. If normal operation still cannot be achieved, replace the control box and notify after-sales service.
E03	Communication failure between the main CPU and panel CPU	1. Turn off the system power supply, check whether the display screen connections are loose or disconnected, restore them to normal, and then restart the system. 2. Turn off the system power supply, remove the electrical control box, and plug in only the power cord to test for E03 alarm. If the E03 alarm persists, replace the control box and contact after-sales service.
E05	Abnormal controller signal	1. Check whether the throttle controller connector is loose or detached, restore it to normal position, and restart the system. 2. If normal operation still cannot be achieved, replace the control box or speed controller and notify after-sales service.
E07	Stalled spindle motor	1. Turn off the power supply and check whether the handwheel can rotate smoothly (by manually turning the handwheel). If rotation is not possible, investigate the mechanical components. 2. Turn off the power supply, check if the motor's power interface is loose, and restart after reinsertion. 3. Check whether the upper needle positioning is correct. If incorrect, adjust the upper positioning position. 4. If the equipment still fails to operate normally, replace the control box or spindle motor and contact after-sales service.
E10	Overcurrent Protection for Electromagnets	Turn off the system power supply and check if the solenoid (electromagnetic valve) is damaged or short-circuited.
E09 E11	Abnormal positioning signal from spindle motor encoder	1. Turn off the system power supply, check whether the spindle motor encoder interface is loose or detached, restore it to normal, and then restart the system.

		2. Check whether the motor zero-point calibration settings are correct; reset the motor zero-point calibration and inspect the encoder disk for oil. If present, clean it thoroughly. 3. If the equipment still fails to operate normally, replace the control box or spindle motor and contact after-sales service.
E14	Abnormal encoder signal from spindle motor	1. Turn off the system power supply, check whether the spindle motor encoder interface is loose or detached, restore it to normal, and then restart the system. 2. Check if the grating is installed correctly (ensure grating screws are tightened and the grating is centered on the encoder head). 3. Check if the optical grating code disk is oiled. If so, clean it thoroughly and restart the system after restoration. 4. If the equipment still fails to operate normally, replace the control box or spindle motor and contact after-sales service.
E15	Overcurrent in spindle motor drive	1. Check whether the motor power cord has poor contact. 2. Check whether the motor power cord is damaged by compression. 3. Replace the control box or spindle motor and notify after-sales service.
E20	The spindle motor failed to start	1. Turn off the system power supply, inspect the spindle motor power cable connector and encoder interface for looseness or disconnection, restore them to normal condition, and then restart the system. 2. Check whether the motor zero-point calibration settings are correct; reset the motor zero-point calibration. 3. If the equipment still fails to operate normally, replace the control box or spindle motor and contact after-sales service.
E92	Overcurrent during wire cutting with stepper motor	1. Turn off the system power supply and observe whether the wire-cutting (clamp) stepper motor is jammed. If jammed, first troubleshoot any mechanical faults in the machine head. If normal, check whether the interface of the wire-cutting (clamp) stepper motor is loose or detached, restore it to normal, and then restart the system. 2. If the system still fails to operate normally, replace the control box or the stepper motor's wiring (pressing feet) and contact after-sales service.
E94	Abnormal positioning signal of the stepping motor encoder for the wire-cutting (presser foot) mechanism	1. Turn off the system power supply and observe whether the wire-cutting (clamp) stepper motor is jammed. If jammed, first troubleshoot mechanical faults in the machine head. If normal, inspect whether the encoder interface of the wire-cutting (clamp) stepper motor is loose or detached, and check if the encoder code disk is oiled. If so, clean it thoroughly and restore normal operation before restarting the system. 2. If the device still fails to operate normally, replace the control box or the stepper motor's wiring (pressing feet) and contact after-sales service.
E95	Abnormal signal from the stepping motor encoder of the wire-cutting (presser foot) mechanism	1. Turn off the system power supply, check whether the jumper (clamp) interface of the stepper motor encoder is loose or detached, restore it to normal, and then restart the system. 2. If the device still fails to operate normally, replace the control box or the stepper motor's wiring (pressing feet) and contact after-sales service.
E96	Step motor startup failure with wire cutting (presser foot)	1. Turn off the system power supply, inspect the power line connector and encoder interface of the stepper motor (including the wiring harness and clamping feet) for looseness or detachment, restore them to normal condition, and then restart the system.

		2. If the device still fails to operate normally, replace the control box or the stepper motor's wiring (pressing feet) and contact after-sales service.
E97	Stall during wire cutting with stepper motor	1. Turn off the system power supply and observe whether the wire-cutting (clamp) stepper motor is jammed. If jammed, first troubleshoot mechanical faults in the machine head. If normal, inspect the power cable interface and encoder interface of the wire-cutting (clamp) stepper motor for looseness or detachment. Restore them to normal condition and restart the system. 2. If the device still fails to operate normally, replace the control box or the stepper motor's wiring (pressing feet) and contact after-sales service.
E98	Stall occurs when the stepping motor lifts the pressure foot	1. Turn off the system power supply and observe whether the wire-cutting (clamp) stepper motor is jammed. If jammed, first troubleshoot mechanical faults in the machine head. If normal, inspect the power cable interface and encoder interface of the wire-cutting (clamp) stepper motor for looseness or detachment. Restore them to normal condition and restart the system. 2. If the device still fails to operate normally, replace the control box or the stepper motor's wiring (pressing feet) and contact after-sales service.
E99	Overcurrent occurs during pressure foot lifting by stepper motor	1. Turn off the system power supply and observe whether the wire-cutting (clamp) stepper motor is jammed. If jammed, first troubleshoot mechanical faults in the machine head. If normal, inspect the power cable interface and encoder interface of the wire-cutting (clamp) stepper motor for looseness or detachment. Restore them to normal condition and restart the system. 2. If the device still fails to operate normally, replace the control box or the stepper motor's wiring (pressing feet) and contact after-sales service.

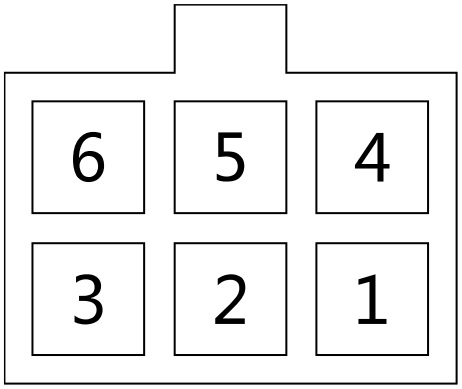
4 Port schematic diagram

Schematic diagram of 2P port

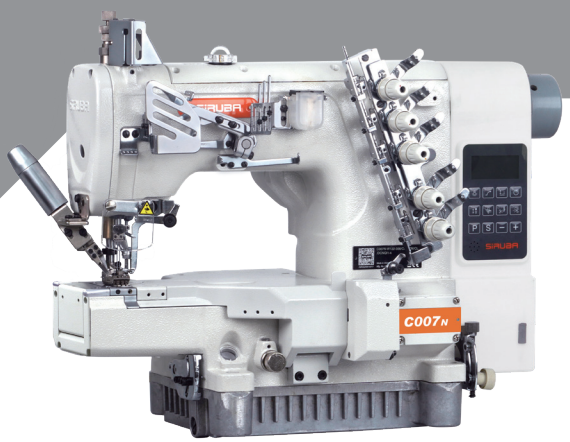


1. LED clothing vehicle light: 1 (DGND), 2 (+5V)

Schematic diagram of Port 6P



1. Top blade cutting line: 1 (DGND), 4 (32V)
2. Vacuum suction: 2 (DGND), 5 (32V)
3. Sweep line: 6 (DGND), 3 (32V)



高林股份有限公司
KAULIN MFG. CO., LTD.

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