SiRUBA

電控參數說明書

ELECTRONIC CONTROL PARAMETER MANUAL

DL7200C



⚠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錯誤動作。
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

名稱	按鍵	注明
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。
加號鍵		若點擊，增加參數值。 若長按，連續增加參數值。
減號鍵		若點擊，減少參數值。 若長按，連續減少參數值。
恢復出廠設置		若長按，恢復出廠設置。
起始回縫鍵/慢速起縫鍵		若點擊，依次切換 AB 加固縫→ABAB 加固縫→無加固縫→B 加固縫。 若長按，設定使用或取消慢速起縫功能。
終止回縫鍵/停針位鍵		若點擊，依次切換 CD 加固縫→CDCD 加固縫→無加固縫→C 加固縫。 若長按，切換縫製後機針的停止位置（ 上停針位/下停針位 ）。
自由縫鍵/一段定針縫鍵		若點擊，設定為自由縫模式。 若長按，設定為一段定針縫模式。
連續回縫鍵/多段定針縫鍵		若點擊，設定為連續回縫模式。 若長按，設定為多段定針縫模式（ 依次切換為四段縫、七段縫、八段縫、十五段縫模式 ）。
抬壓腳鍵/自動觸發鍵		若點擊，依次切換關閉自動抬壓腳→切完線後壓腳自動抬起→車縫中馬達停止時壓腳自動抬起→切完線後和車縫中馬達停止時壓腳都自動抬起。 若長按，設定使用或取消觸發自動功能。
切線鍵/夾線鍵		若點擊，設定使用或取消切線功能。 若長按，設定使用或取消夾線功能。
自由縫花樣鍵		若點擊，轉換到自由縫花樣樣式選擇介面。 若長按，轉換到花樣樣式編輯介面。
密縫鍵		若點擊，依次切換起始密縫、終止密縫、全開和全關。 若長按，轉換到密縫樣式編輯介面。
回縫花樣鍵		若點擊，設定使用或取消回縫花樣功能。 若長按，轉換到回縫花樣樣式編輯介面。
定針縫花樣鍵		在多段定針縫模式下，若點擊，轉換到定針縫花樣模式介面。 在多段定針縫模式下，若長按，轉換到定針縫花樣樣式編輯介面。
針距調整鍵		若點擊，加大或減小針距。 若長按，連續加大或減小針距。

1.2 協助工具

1.2.1 調試模式

在主介面長按 S 鍵，轉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、P129 項倒縫步進電機零點校正、P74 項正縫針距補償、P75 項倒縫針距補償參數設置。

1.2.2 密縫樣式編輯

在主介面長按密縫鍵，顯示“F- 1”（起始密縫），按第 4 列 [+]、[−] 切換“F- 1”（起始密縫）、“d- 2”（終止密縫），短按 S 鍵確認，轉換到編輯介面“01 0 0.5”，按第 1 列或第 2 列 [+]、[−] 調整00-12 針數，按第4 列 [+]、[−] 調整0（正縫）-1（倒縫），按 [+ 快 −] 調整針距，設定完成後短按S 鍵確認。短按P 鍵退出到主介面。

1.2.3 自由縫花樣模式

在主介面短按 [Patt]，轉換到自由縫花樣樣式選擇介面“n1”，按 [+ 快 −] 調整 n1- n9 花樣號。

1.2.4 自由縫花樣樣式編輯

在主介面長按 [Patt]，轉換花樣樣式編輯介面“n-01 01”，按第 4 列 [+]、[−] 調整 n01-n09 花樣號，短按 [+ 慢 −] 調整 01-10 段號，調整到設定的花樣號、段號，短按 S 鍵確認，轉換到對應花樣號編輯介面“01 1 3.0”按第1 列或第2 列 [+]、[−] 調整00-99 針數 按第4 列 [+]、[−] 調整1-9 重複次數 按 [+ 慢 −] 調整針距，設定完成後短按 S 鍵確認。短按P 鍵退出到主介面。

1.2.5 固縫花樣樣式編輯

在主介面長按 [Patt]，轉換花樣樣式編輯介面“H-01 01”，按第4 列 [+]、[−] 調整H01-H09 花樣號，短按 [+ 慢 −] 調整01-10 段號，調整到設定的花樣號、段號，短按S 鍵確認，轉換到對應花樣號編輯介面“01 1 3.0”按第1 列或第2 列 [+]、[−] 調整00-99 針數 按第4 列 [+]、[−] 調整1-9 重複次數 按 [+ 慢 −] 調整針距，設定完成後短按 S 鍵確認。短按P 鍵退出到主介面。

1.2.6 定針縫花樣樣式編輯

多段定針縫模式下，在主介面長按定針縫花樣鍵，轉換到定針縫花樣樣式編輯介面“d-01 3.0”，按第 4 列 [+]、[−]，調整d01-d15 段號，按 [+ 慢 −] 調整當前段號的針距。短按P 鍵退出到主介面。

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）	100-3700	3700	車縫時的最高轉速設定
P02	加速曲線調整（%）	10-100	80	控速器爬升斜率設定 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	DN	UP：上停針；DN：下停針

參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P04	起始回縫速度（rpm）	200-3200	2200	
P05	終止回縫速度（rpm）	200-3200	2200	
P06	連續回縫速度（rpm）	200-3200	2200	
P07	慢速起縫速度（rpm）	200-1500	1500	
P08	慢速起縫針數（針）	1-15	2	
P09	自動定針縫速度（rpm）	200-4000	3700	觸發自動功能鍵按下時的速度設定
P10	定針縫後自動執行終止回縫功能	ON/OFF	ON	ON：在執行完最後一段定針縫後，將自動執行終止回縫動作即在任何縫製模式下，終止回縫前不能作補針功能 OFF：在執行完最後一段定針縫後，將無法自動執行終止回縫功能，必須重新再作前或全後踏動作時始可
P12	起始回縫運動模式選擇	0-1	1	0：受踏板控制，可任意停止與啟動 1：輕觸踏板，自動執行回縫動作
P13	起始回縫結束模式選擇	CON/STP	CON	CON：起始回縫段完成後，自動連續下一段功能 STP：起始回縫段針數完成後自動停止
P14	慢速起縫功能設定	ON/OFF	OFF	
P15	手動按鍵 A	0-6	5	0：功能關閉 1：補半針 2：補一針 3：連續補半針 4：連續補一針 5：在車縫中或中途停止時具有倒縫動作 6：密縫功能
P16	手動倒縫限速	0-3200	0	數值小於 100 時功能關閉
P17-N06	自動計件功能	0-50	1	0 關閉；1-50 剪線計件次數設置
P17-N12	開機顯示計數器介面選擇	0-1	0	0：關閉；1：開啟
P17-N13	自動計件模式選擇	0-1	0	0：增計件模式，1：減計件模式
P18	起始回縫補償 1	0-200	158	起始回縫 A 段針跡補償，0～200 動作逐步滯後； 數值越大，A 段最後一針越長，B 段第一針越短
P19	起始回縫補償 2	0-200	158	起始回縫 B 段針跡補償，0～200 動作逐步滯後； 數值越大，B 段最後一針越長
P21	踏板加速位置	30-1000	520	
P22	踏板回中位置	30-1000	420	
P23	踏板抬壓腳位置	30-1000	270	
P24	踏板切線位置	30-500	130	
P25	終止回縫補償 3	0-200	158	終止回縫 C 段針跡補償，0～200 動作逐步滯後； 數值越大，C 段第一針越短
P26	終止回縫補償 4	0-200	158	終止回縫 D 段針跡補償，0～200 動作逐步滯後； 數值越大，C 段最後一針越長，D 段第一針越短。

參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P29	切線停車力度	1-45	20	
P32	連續回縫補償 5	0-200	158	連續回縫 A（C）段針跡補償，0～200 動作逐步滯後；數值越大，A（C）段最後一針越長，B（D）段第一針越短
P33	連續回縫補償 6	0-200	158	連續回縫 B（D）段針跡補償，0～200 動作逐步滯後；數值越大，B（D）段最後一針越長，C 段第一針越短
P34	定針縫運動模式選擇	A/M	A	A：輕觸腳踏板，即自動執行定針縫動作 M：受腳踏板控制，可任意停止與啟動
P35	抬壓腳時鬆線功能設置	0-2	0	0：關閉；1：抬壓腳時鬆線出力功能開啟，中途停車時鬆線出力功能關閉；2：抬壓腳時鬆線出力功能和中途停車時鬆線出力功能開啟
P36	鬆線功能設定	0-1	1	0：關閉；1：鬆線
P37	撥線/夾線功能設定	0-11	8	0：關閉；1：撥線功能； 2～11：夾線功能，數值越大動作力度越大
P38	自動切線功能設定	ON/OFF	ON	
P39	中途停車自動抬壓腳設定	UP/DN	DN	
P40	切線自動抬壓腳設定	UP/DN	DN	
P41	切線計數器顯示	0-9999	0	車縫完成件數顯示；長按減號鍵可計數清零
P42-NO1	電控版本號			
P42-NO2	選針盒版本號			
P42-NO3	轉速			
P42-NO4	腳踏板 AD 值			
P42-NO5	機械角度（上定位）			
P42-NO7	母線電壓 AD 值			
P42-N15	步進版本號			
P43	馬達轉動方向設定	CCW/CW	CCW	CW：順時針方向 CCW： 逆時針方向
P44	中途停車時剎車力度	1-45	16	
P45	花樣自由縫運動模式選擇	0-1	0	0：受腳踏板控制，可任意停止與啟動 1：輕觸腳踏板，即自動執行一個花樣的縫紉動作
P46	切線後，反轉提針功能選擇	ON/OFF	OFF	
P47	切線後，反轉提針角度的調整（度）	10-50	40	切完線後，由上針位算起，以反向運轉作提針的角度調整
P48	最低速度（定位速度）（rpm）	100-500	210	最低速度限制調整
P49	切線速度（rpm）	100-500	300	調整切線週期時的電機速度
P50	抬壓腳全額出力的工作時間（ms）	10-990	200	
P51	壓腳出力的週期信號（%）	1-50	38	壓腳動作時，以週期性省電輸出，避免電磁鐵發燙
P52	延遲馬達啟動，保護壓腳下放時間（ms）	10-990	120	踩下時延遲啟動時間，以配合自動抬壓腳放下的確認
P53	半後踏抬壓腳功能取消	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
P54	切線動作時間（ms）	10-990	200	

參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P55	撥線動作時間	10-990	10	無鳥巢模式：80
P56	開電後自動找上定位	0-2	0	0：始終不找上定位；1：始終找上定位
P57	壓腳電磁鐵保護時間（s）	1-60	5	保持時間後強制關閉，防止電磁鐵長時間吸合而發燙
P58	上定位調整	0-359	90	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	0-359	270	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）	100-3700	3500	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	測試時測試執行時間	1-250	30	
P65	測試時測試停止時間	1-250	10	
P66	機頭保護開關	0-1	1	0：不檢測；1：檢測零信號
P69	自由縫花樣速度	100-3000	2000	
P70	機型選擇			
P71	手動按鍵 A 的補針針距	0-5.0	0	
P72	上定位快捷調整	0-359		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	0-359		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
P74	正縫針距補償	-50～50	0	
P75	倒縫針距補償	-50～50	0	
P77	自由縫快速後加固的倒縫時機點	0-350	130	
P78	夾線器起夾角度	5-359	100	
P79	夾線器結束角度	5-359	270	
P80	切線進刀角度	0-359	5	
P81	壓腳釋放緩衝工作時間（ms）	0-800	60	
P83	切線後停車力度	10-100	20	
P84	切線全額出力時間（ms）	10-990	60	
P85	切線出力的週期信號（*10%）	1-10	7	
P86	上下定位距離	15-345	180	上下定位距離角度（每 4 個數值為 1 度）
P87	撥線回程延遲時間	10-990	50	確保撥線機構回到原位
P88	中途停車剎車距離	10-100	30	
P89	交流過壓值設定	500-1023	880	
P90	慢速起縫第一針速度	200-1500	400	
P91	慢速起縫第二針速度	200-1500	1000	
P92	電機電角度校正		160	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	半反踏功能起效時間（ms）	10-900	100	

參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P95	壓腳第一段出力動作的週期信號（%）	10-100	100	
P99	起始密縫針距	0-5.0	0.5	
P100	起始密縫方向	0-1	0	
P101	鬆線開始角度	1-359	30	鬆線開始角度（下定位為 0°計算）
P102	鬆線結束角度	1-359	180	鬆線結束角度（下定位為 0°計算，需大於 P101 項參數值）
P103	鬆線力度	1-5	3	
P105	自由縫花樣樣式選擇	0-9	0	0：關閉 1～9：自由縫花樣樣式
P107	起始密縫速度	100-1200	500	
P108	起始密縫針數	0-12	1	
P109	撥線前延遲時間	5-990	5	找到上定位後進入撥線動作前的間隔時間
P110	切線回程時間（ms）	60-990	65	確保切線機構回到原位
P111	無鳥巢模式開關	0-1	0	
P112	無鳥巢鉤線前延時	0-990	100	
P113	無鳥巢鉤線動作時間	0-990	90	
P114	無鳥巢鉤線返程時間	0-990	30	
P115	無鳥巢鉤線占空比	0-100	80	
P116	無鳥巢吸氣時間	0-5000	1000	
P117	無鳥巢挺線占空比	0-100	80	
P118	花樣縫模式手動倒縫按鍵的功能選擇	0-1	0	
P129	倒縫步進電機零點校正	-500～500	0	
P131	正常針距	0-5.0	3.0	
P132	手動密縫針距	0-5.0	2.0	
P138	壓腳釋放緩衝占空比(%)	0-100	10	
P139	壓腳釋放緩衝延遲時間（ms）	0-200	35	
P143	密縫模式選擇	0-3	0	0：關閉；1：起始密縫開啟；2：終止密縫開啟；3：起縫密縫、終止密縫開啟
P144	高速正縫針距補償	-50～50	-20	
P145	高速倒縫針距補償	-50～50	-20	
P153	終止密縫針距	0-5.0	0.5	
P154	終止密縫速度	100-1200	1000	
P159	終止密縫方向	0-1	0	0：正縫；1：倒縫
P160	終止密縫針數	0-12	1	
P165	針數計數器模式選擇	0-4	0	0：不計數；1.遞增迴圈計數；2.遞減迴圈計數；3.遞增計數，計數滿後報警，需由清除鍵來啟動重新計數；4.遞減計數，計數滿後報警，需由清除鍵來啟動重新計數
P166	針數計數器上限值（針）*10	0-9999	500	
P170	手動按鍵 B 的補針針距	0-5.0	0	
P171	手動按鍵 C 的補針針距	0-5.0	0	
P173	手動按鍵 D 的補針針距	0-5.0	0	

參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P174	手動按鍵 B	0-6	3	0：功能關閉 1：補半針 2：補一針 3：連續補半針 4：連續補一針 5：在車縫中或中途停止時具有倒縫動作 6：密縫功能
P175	手動按鍵 C	0-6	0	0：功能關閉 1：補半針 2：補一針 3：連續補半針 4：連續補一針 5：在車縫中或中途停止時具有倒縫動作 6：密縫功能
P176	手動按鍵 D	0-6	0	0：功能關閉 1：補半針 2：補一針 3：連續補半針 4：連續補一針 5：在車縫中或中途停止時具有倒縫動作 6：密縫功能
P177	正向 1mm 針距基準值	0-2000		
P178	反向 1mm 針距基準值	0-2000		
P179	正向 2mm 針距基準值	0-2000		
P180	反向 2mm 針距基準值	0-2000		
P181	正向 3mm 針距基準值	0-2000		
P182	反向 3mm 針距基準值	0-2000		
P183	正向 4mm 針距基準值	0-2000		
P184	反向 4mm 針距基準值	0-2000		
P185	正向 5mm 針距基準值	0-2000		
P186	反向 5mm 針距基準值	0-2000		
P187	正向 6mm 針距基準值	0-2000		
P188	反向 6mm 針距基準值	0-2000		
P189	正向 7mm 針距基準值	0-2000		
P190	反向 7mm 針距基準值	0-2000		

註：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

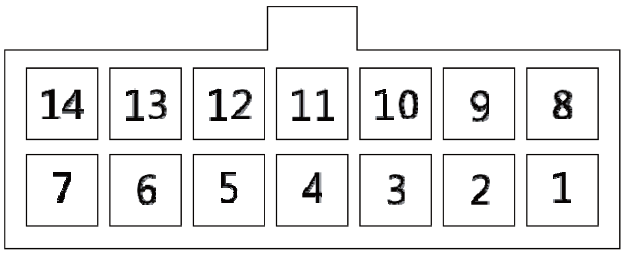
錯誤碼	內容	對策
E01	電壓高	1、電網電壓是否高於 AC260V 2、如果是自行發電供電，請降低發電機功率 3、若仍不能正常工作，請更換控制箱並通知售後服務
E02	電壓低	1、是否插入低電壓

		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	1、拔除電磁鐵介面，如報警 E10，更換控制箱並通知售後服務 2、如果拔除電磁鐵介面後不再報警，請插回介面 1）前踏踏板讓縫紉機進行夾線和加固縫，如果報警，請關閉前加固和後加固，重啟電控，再進行前踏，如果報警，請關閉夾線功能重啟電控，再次前踏，如果不報警，請更換夾線器 2）前踏踏板讓縫紉機進行夾線和加固縫，如果報警，請關閉前加固和後加固，重啟電控，再進行前踏，如果不報警，請關閉夾線功能重啟電控， 並打開前加固縫功能，再次前踏，如果報警，請更換倒縫電磁鐵 3）前踏踏板讓縫紉機進行夾線和加固縫，如果不報警，請半反踏進行抬壓腳，如果報警請更換壓腳電磁鐵 4）前踏踏板讓縫紉機進行夾線和加固縫，半反踏抬壓腳，如果不報警，請全反踏剪線，如果報警請更換剪線電磁鐵
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
E17	機頭翻倒	1、關閉系統電源，檢查機頭是否翻倒 2、檢查機頭保護開關檢測設置是否正確 3、若仍不能正常工作，請更換控制箱或面板並通知售後服務
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

E80	主 CPU 與步進驅動CPU 通信異常	請更換控制箱並通知售後服務
E82	倒縫步進電機過流	1、關閉系統電源，觀察倒縫步進電機是否卡住。如卡住則先排除機頭機械故障。如正常，檢查倒縫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，請更換控制箱或倒縫步進電機並通知售後服務
E84	倒縫步進電機編碼器定位信號異常	1、關閉系統電源，觀察倒縫步進電機是否卡住。如卡住則先排除機頭機械故障。如正常，檢查倒縫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、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，請更換控制箱或倒縫步進電機並通知售後服務
E85	倒縫步進電機編碼器信號異常	1、關閉系統電源，檢查倒縫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、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，請更換控制箱或倒縫步進電機並通知售後服務
E86	倒縫步進電機啟動失敗	1、關閉系統電源，檢查倒縫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、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，請更換控制箱或倒縫步進電機並通知售後服務
E87	倒縫步進電機堵轉	1、關閉系統電源，觀察倒縫步進電機是否卡住。如卡住則先排除機頭機械故障。如正常，檢查倒縫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，請更換控制箱或倒縫步進電機並通知售後服務

4 埠示意圖

14P 埠示意圖



1. 剪線電磁鐵：1（DGND）、8（+32V）

2. 夾線（掃線）電磁鐵：2（DGND）、9（+32V）

3. 鬆線電磁鐵：3（DGND）、10（+32V）

4. LED 衣車燈：4（DGND）、11（+5V）

5. 倒縫按鍵：5（信號）

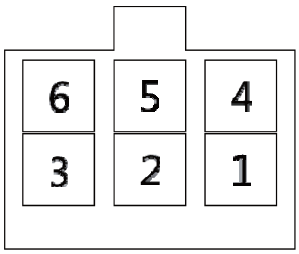
6. 壓腳電磁鐵：6（DGND）、13（+32V）

7. 補針按鍵 1：7（信號）

8.1/2 補針按鍵:14（信號）

9.1/4 補針按鍵:12（信號）

6P 埠示意圖

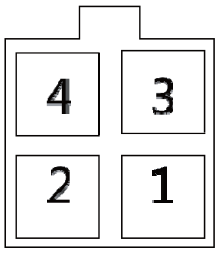


1.挺線電磁鐵：1（+32V）、4（DGND）

2.鉤線電磁鐵：2（+32V）、5（DGND）

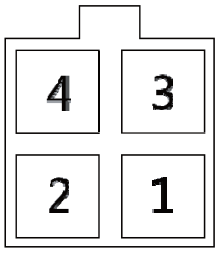
3.吸風電磁鐵：3（+32V）、6（DGND）

4P 黑色埠示意圖



面板：1（RX）、2（DGND）、3（S5V）、4（TX）

4P 橙色埠示意圖



壓腳高度感應：1（信號）、3（DGND）、4（S5V）

⚠Safety Instruction

1. Users are required to read the operation manual completely and carefully before installation or operation.
2. The product should be installed and pre-operated by well-trained persons. All power supplies must be turned off during the installation work, remember not to operate with power on.
3. All the instruction marked with sign ⚠ must be observed or executed; otherwise, bodily injuries might occur.
4. For perfect operation and safety, it is prohibited that using extension cable with multi-outlet for power connection.
5. When connecting the power cord, it must be determined that the operating voltage conforms to the rated voltage value specified in the product identification.
6. Don′t operate in direct sun light，outdoors area and where the room temperature is over 45°C or below 0°C.
7. Please avoid operating near the heater at dew area or at the humidity below 10% or above 90%.
8. Don′ t operate in area with heavy dust, corrosive substance or volatile gas.
9. Avoid power cord being applied by heavy objects or excessive force, or over bend.
10. The earth wire of power cord must be connected to the system ground of the production plant by proper size of conductions and terminals. This connection should be fixed permanently.
11. All the moving portions must be prevented to be exposed by the parts provided.
12. Turing on the machine in the first time, operate the sewing machine at low speed and check the correct rotation direction.
13. Turn off the power before the following operation:
    1. Connecting or disconnecting any connectors on the control box or motor.
    2. Threading needle.
    3. Raising the machine head.
    4. Repairing or doing any mechanical adjustment.
    5. Machines idling.
14. Repairs and high level maintenance work should only be carried out by electronic technicians with appropriate training.
15. All the spare parts for repair must be provided or approved by the manufacturer.
16. Don’t use any objects or force to hit or ram the product.

Guarantee Time

Warranty period of this product is 1 year dated from purchasing, or within 2 years from ex-factory date.

Warranty Detail

Any trouble found within warranty period under normal operation, it will be repaired free of charge. However, maintenance cost will be charged in the following cases even if within warranty period:

1. Inappropriate use, including: wrong connecting high voltage, wrong application, disassemble, repair, modification by incompetent personnel, or operation without the precaution, or operation out of its specification range, or inserting other objects or liquids into the product.
2. Damage by fire, Earth quake, lighting, wind, flood, salt corrosive, moisture, abnormal power voltage and any other damage cause by the natural disaster or by the inappropriate environments.
3. Dropping after purchasing or damage in transportation by customer himself or by customer’s shipping agency

* We make our best effort to test and manufacture the product for assuring the quality. However, it is possible that this product can be damaged due to external magnetic interference and electronic static or noise or unstable power source more than expected; therefore the grounding system of operate area must guarantee the good earth and it’s also recommended to install a failsafe device (Such as residual current breaker).

1 Button Displays and Operating Instructions

1.1 Key Description

Name	key	Indicate
Function Parameter Edit		If click, enter or exit the user parameter setting interface. If long-press, it will switch to the password input interface. Enter the correct password, press S key to confirm, you can enter the advanced parameter setting interface.
Setting Parameter Check and Save		For the content of the selected parameters check and save: after select parameter press this key to check and modify operation, after modified parameter value press this key to exit and save the parameter.
Parameter Increase		If click, increase the parameter. If long-press, continuously Increase the parameter.
Parameter Decrease		If click, decrease the parameter. If long-press, continuously decrease the parameter.
Reset		Long-press can restore factory setting.
Start Back-tacking Selection / Slow Launch Setting		If click, switch AB start back-tacking→ABAB start back-tacking→function off→B start back-tacking successively. If long-press, set used or cancelled slow launch function.
End Back-tacking Selection / Needle Stop Position Selection		If click, switch CD end back-tacking→CDCD end back-tacking→function off→C end back-tacking successively. If long-press, the needle stop position after shift the sewing mode (up position / down position).
Free Sewing / Constant Stitch Sewing		If click, set to free sewing mode. If long-press, set to constant stitch sewing mode.
Consecutive Reverse Sewing / Multi-segment Sewing		If click, set to consecutive reverse sewing mode. If long-press, set to multi- segment sewing mode (switch to four-segment sewing, seven-segment sewing, eight-segment sewing, and fifteen-segment sewing in sequence).
Presser Foot Lifting Setting / Auto Function		If click, switch function off→automatic presser foot lifting after trimming→automatic presser foot lifting after pause→full function successively. If long-press, set used or cancelled auto function.
Trimming Setting / Clamp Function Setting		If click, set used or cancelled trimming function. If long-press, set used or cancelled clamp function.
Pattern Freedom Sewing Setting		If click, switch to pattern freedom sewing mode selection interface. If long-press, switch to pattern freedom sewing mode editing interface.
Tight Seam Setting		If click, switch starting tight seam, ending tight seam, full function and function off successively. If long-press, switch to tight seam mode editing interface.
Pattern Backing-tacking Setting		If click, set used or cancelled pattern backing-tacking function. If long-press, switch to pattern backing-tacking mode editing interface.
Pattern Constant-stitch Sewing Setting		In multi- segment sewing mode, if click, set used or cancelled pattern constant-stitch sewing function. In multi- segment sewing mode, if long-press, switch to pattern constant-stitch sewing mode editing interface.
Stitch Length Setting		If click, increase or decrease stitch length. If long-press, continuously increase or decrease stitch length.

1.2 Auxiliary Function

1.2.1 Debugging Mode

On the main interface, long-press S key to enter to the debugging parameter interface. P92 correct the electrical angle of motor, P72 up needle position adjustment, P129 back-tacking step motor zero-point correction, P74 tacking stitch length compensation and P75 back-tacking stitch length compensation parameter setting.

1.2.2 Tight Seam Mode Editing

On the main interface, long-press tight seam key to display "F-1" (start back-tacking), and press the 4th column [+], [−] to switch between "F-1" (start back-tacking) and "d-2" (end back-tacking), press S to confirm, switch to the editing interface "01 0 0.5", press the 1st or 2nd column [+], [−] to adjust the number of stitches of 00-12, press the 4th column [+], [−] to adjust 0 (Normal sewing) -1 (reverse sewing). Press [+ 针距 −] to adjust the stitch length. After the setting is completed, press S key to confirm. Click P key to exit to the main interface.

1.2.3 Pattern Freedom Sewing Mode

On the main interface short-press [Patt] to shift pattern freedom sewing mode selection interface "n1"，press [+ 针距 −] to adjust n1-n9.

1.2.4 Pattern Freedom Sewing Editing

On the main interface long-press [Patt] to shift pattern freedom sewing mode editing interface“n-01 01”，short-press the 4th column [+], [−] to adjust n01-n09, short-press [+ 针距 −] adjust 01-10 segment number, adjust to setting pattern number, segment number, short-press S key to confirm, shift to corresponding pattern number editing interface“01 1 3.0”，short press 1st column or 2nd column [+], [−] to adjust 00-99 stitches, short-press 4th column [+], [−] 1-9 repeat times, short-press [+ 针距 −] to adjust needle distance, after finished setting short-press S key to confirm. Press P key can exit to interface.

1.2.5 Pattern Backing-tacking Sewing Editing

On the main interface, long press [Patt] to switch the pattern style editing interface "H-01 01", press the 4th column [+], [−] to adjust the H01-H09 pattern number, and short press [+ 针距 −] to adjust the 01-10 segment number, segment number, short press S key to confirm, switch to the corresponding pattern number editing interface "01 1 3.0", press the 1st or 2nd column [+], [−] to adjust the number of 00-99 stitches, press the 4th column [+], [−] to adjust Repeat 1-9 times, press [+ 针距 −] to adjust the stitch length. After the

setting is completed, press the S key to confirm. Short press P key to exit to the main interface.

1.2.6 Pattern Constant-stitch Sewing Editing

In the multi-segment sewing mode, long-press pattern constant-stitch sewing key on the main interface to switch to pattern constant-stitch sewing editing interface "d-01 3.0", press the fourth column [+], [−] to adjust the d01-d15 segment number, and press [+ 针 −] to adjust the current segment Stitch length. Short press P key to exit to the main interface.

2 User Parameter

No.	Items	Range	Default	Description
P01	Maximum sewing speed (rpm)	100-3700	3700	Maximum speed of machine sewing
P02	Set accelerated curve (%)	10-100	80	Set the acceleration slope The greater the slope value, the steeper the speed; the smaller the slope value, the slower the speed
P03	Needle UP/ DOWN	UP/DN	DN	UP: Needle stops at up position DN: Needle stops at down position
P04	Start back-tacking speed (rpm)	200-3200	2200	
P05	End back-tacking speed (rpm)	200-3200	2200	
P06	Bar-tacking speed (rpm)	200-3200	2200	
P07	Soft start speed (rpm)	200-1500	1500	
P08	Stitch numbers for soft start	1-15	2	
P09	Automatic constant-stitch sewing speed (rpm)	200-4000	3700	Speed adjustment for automatic constant-stitch sewing
P10	Automatic end back-tacking sewing after constant-stitch sewing	ON/OFF	ON	ON: After executing the constant-stitch sewing, the back-tacking sewing will be executed automatically. In any sewing mode, mending stitch function cannot be used. OFF: After executing the last constant-stitch sewing, the back-tacking sewing function will not be automatically executed, and the front step or full back step must be performed again.
P12	Start back-tacking running mode selection	0-1	1	0: Controlled by foot pedal, can be stopped and started at will 1: Touch the foot pedal to automatically execute back-tacking action
P13	Ending mode of start back-tacking	CON/STP	CON	CON: Start back-tacking is completed automatically continued for next action. STP: After the number of stitches is completed, stop automatically.
P14	Slow start function selection	ON/OFF	OFF	
P15	Manual Switch A	0-6	5	0: OFF 1: half stitch 2: one stitch 3: continuous half stitch 4: continuous one stitch 5: Back-tacking when machine stop or pause 6: Tight seam function
P16	Speed limit of manual back-tacking	0-3200	0	The function is disabled when the value is less than 100.

No.	Items	Range	Default	Description
P17-N04	Language setting	0-6	1	0: OFF 1: Chinese 2: English 3: Vietnamese 4: Portuguese 5: Turkish 6: Spanish
P17-N05	Voice broadcast selection	0-3	1	0: No key tone, no error voice 1: With key tone and error voice 2: Key tone only 3: Error voice only
P17-N06	Automatic piece counting function	0-50	1	0: OFF 1-50: Trimming counting times setting
P17-N12	Boot counter interface selection	0-1	0	0: OFF 1: ON
P17-N13	Automatic piece counting mode selection	0-1	0	0: Incremental piecework mode 1: Diminishing piecework mode
P18	Start back-tacking compensation 1	0-200	158	Stitch compensation for start back-tacking A section, 0~200 action gradually delay; The large value, the longer of the A section last stitch, and the shorter of the B section first stitch.
P19	Start back-tacking compensation 2	0-200	158	Stitch compensation for start back-tacking A section, 0~200 action gradually delay; The large value, the longer of the B section last stitch.
P21	The position of the pedal for accelerating	30-1000	520	
P22	The position of the pedal for the stop	30-1000	420	
P23	The position of the pedal for presser foot lifting	30-1000	270	
P24	The position of the pedal for thread trimming	30-500	130	
P25	End back-tacking compensation 3	0-200	158	Stitch compensation for end back-tacking C section, 0~200 action gradually delay; The large value, the shorter of the C section first stitch.
P26	End back-tacking compensation 4	0-200	158	Stitch compensation for end back-tacking D section,0~200 action gradually delay; the large value, the longer of the C section last stitch, and the shorter of the D section first stitch.
P29	The strength of thread trimming stop	1-45	20	
P32	Bar-tacking compensation 5	0-200	158	Stitch compensation for bar-tacking A (C) section, 0~200 action gradually delay; the large value, the longer of the A (C) section last stitch; the shorter of the B (D) section first stitch.
P33	Bar-tacking compensation 6	0-200	158	Stitch compensation for bar-tacking B (D) section, 0~200 action gradually delay; the large value, the longer of the B (D) section last stitch; the shorter of the C section first stitch.
P34	Constant-stitch sewing running mode selection	A/M	A	A: Touch the foot pedal to automatically execute constant-stitch sewing action M: Controlled by foot pedal, can be stopped and started at will
P35	Thread tension releasing function setting when presser foot lifting action	0-2	0	0: OFF 1: Thread tension releasing output function ON when presser foot lifting, thread tension releasing output function OFF when stopover 2: Full function

No.	Items	Range	Default	Description
P36	Thread tension releasing function selection	0-1	1	0: OFF 1: ON
P37	Thread wiping function / Thread clamping function selection	0-11	8	0 : OFF 1: Thread wiping function. 2-11: Thread clamping Function and the strength of automatic thread clamping.
P38	Automatic thread trimming function selection	ON/OFF	ON	
P39	Automatic presser foot lifting when pause function selection	UP/DN	DN	
P40	Automatic presser foot lifting after trimming function selection	UP/DN	DN	
P41	Thread trimming counter display	0-9999	0	Display the quantity of finished sewing piece. Long-press “-” key to clear the count
P42-N01	The control system version number			
P42-N02	The panel version number			
P42-N03	Speed			
P42-N04	The pedal AD			
P42-N05	The mechanical angle(up position)			
P42-N07	Bus bar voltage AD			
P42-N15	Step drive version number			
P43	Motor rotation direction setting	CCW/CW	CCW	CW: clockwise CCW: counter clock wise
P44	Brake strength during stopover	1-45	16	
P45	Pattern freedom sewing mode selection	0-1	0	0: Controlled by foot pedal, can be stopped and started at will 1: Touch the foot pedal to automatically execute a pattern sewing action
P46	Motor stop with a reverse angle after trimming function	ON/OFF	OFF	
P47	Adjust the reverse angle when motor stop after trimming	10-50	40	Start from the upper needle position and adjust the angle of the needle lift in reverse operation after trimming.
P48	The minimum speed (positioning speed) (rpm)	100-500	210	Adjust the minimum speed
P49	Thread trimming speed (rpm)	100-500	300	Adjust thread trimming speed
P50	Foot lifter operation time to full output (ms)	10-990	200	
P51	Presser foot lifter operation duty cycle (%)	1-50	38	Presser foot lifter operate in duty cycle to save electricity and protect the electromagnet from over-heat.
P52	Delay the start of the motor to protect the lowering time of presser foot (ms)	10-990	120	Delay the start time, with automatic presser foot down.
P53	Half back pedaling lifting presser foot function to cancel	0-2	1	0: OFF 1: Back pedaling and half back pedaling with lifting presser foot 2: Half back pedaling without lifting presser foot, back pedaling with lifting presser foot

No.	Items	Range	Default	Description
P54	Thread trimming action time (ms)	10-990	200	
P55	Thread wiping action time (ms)	10-990	10	Bird nest prevention :80
P56	Power on and positioning	0-2	0	0: Always not to find the up needle position 1: Always to find the up needle position
P57	Presser foot solenoid protection time (s)	1-60	5	Forced shutdown after hold time to prevent the electromagnet from being hot for a long time
P58	Up needle position adjustment	0-359	90	Up position adjustment, the needle will advance stop when the value decreased, the needle will delay stop when the value increased.
P59	Down needle position adjustment	0-359	270	Down position adjustment, the needle will advance stop when the value decreased, the needle will delay stop when the value increased.
P60	Testing speed (rpm)	100-3700	3500	Setting testing speed.
P61	Testing A	ON/OFF	OFF	Continuous running testing.
P62	Testing B	ON/OFF	OFF	Start and stop testing with all functions.
P63	Testing C	ON/OFF	OFF	Start and stop testing without all function.
P64	Test run time	1-250	30	
P65	Test stop time	1-250	10	
P66	Machine protection switch selection	0-1	1	0: Disable 1: Testing zero signal
P69	Pattern freedom sewing speed	100-3000	2000	
P70	Type			
P71	Correction stitches distance of manual button A	0-5.0	0	
P72	Up needle position adjustment	0-359		Adjust up needle position, the displayed value will change with the position of the handwheel, press "S" key to save the current position (value) as up needle position.
P73	Down needle position adjustment	0-359		Adjust down needle position, the displayed value will change with the position of the handwheel, press "S" key to save the current position (value) as down needle position.
P74	Tacking stitch length compensation	-50~50	0	
P75	Back-tacking stitch length compensation	-50~50	0	
P77	Opportunity point of back-tacking for end back-tacking in high speed in free sewing mode	0-350	130	
P78	The start angle of thread clamping	5-359	100	
P79	The stop angle of thread clamping	5-359	270	

No.	Items	Range	Default	Description
P80	Trimming engage angle	0-359	5	
P81	Presser foot release buffer working time (ms)	0-800	60	
P83	Stopping strength after trimming	10-100	20	
P84	Trimming full output time (ms)	10-990	60	
P85	Periodic signal of trimming output (*10%)	1-10	7	
P86	Up and down needle position distance	15-345	180	Up and down positioning distance angle (1 degree for every 4 values)
P87	Wiping thread return delay time	10-990	50	Make sure the wiper returns to its original position
P88	Stopover distance	10-100	30	
P89	AC overvoltage setting	500-1023	880	
P90	Soft start first stitch speed	200-1500	400	
P91	Soft start second stitch speed	200-1500	1000	
P92	Correct the electrical angle of motor		160	Reading the initial Angle of encoder, the factory default was set, please do not change the values (parameter value cannot be changed manually, random change it will result the control box and motor abnormal or damaged).
P93	The starting time of the half back pedaling function (ms)	10-900	100	
P95	Periodic signal of the presser foot first output action (%)	10-100	100	
P99	Starting tight seam stitch length	0-5.0	0.5	
P100	Direction of starting tight seam	0-1	0	
P101	The start angle of thread tension releasing	1-359	30	Thread tension releasing start angle (defined as 0°under calculation)
P102	The stop angle of thread tension releasing	1-359	180	Thread tension releasing end angle (defined as 0°under calculation, must be greater than P101 parameter value)
P103	Thread tension releasing strength	1-5	3	
P105	Pattern freedom sewing mode selection	0-9	0	0: OFF 1-9: Pattern freedom sewing mode
P107	Starting tight seam speed	100-1200	500	
P108	Starting tight seam stitch number	0-12	1	
P109	The delay time before thread wiping	5-990	5	Interval time before entering thread wiping action after finding the upper positioning
P110	Trimming back time (ms)	60-990	65	Make sure the thread trimming device returns to its original

No.	Items	Range	Default	Description
				position
P111	Clamp function without any thrum switch	0-1	0	
P112	The delay time before hook thread with clamp function without any thrum	0-990	100	
P113	The hook thread action time with clamp function without any thrum	0-990	90	
P114	The return back time of hook thread with clamp function without any thrum	0-990	30	
P115	Duty cycle for hook thread with clamp function without any thrum	0-100	80	
P116	The suction time for clamp function without any thrum	0-5000	1000	
P117	Duty cycle for pull thread with clamp function without any thrum	0-100	80	
P118	Function selection of manual back-tacking button in pattern mode	0-1	0	
P129	Back-tacking step motor zero-point correction	-500~500	0	
P131	Normal stitch length	0-5.0	3.0	
P132	Manual close stitches distance	0-5.0	2.0	
P138	Foot lifting release buffer duty cycle (%)	0-100	10	
P139	Foot lifting release buffer delay time (ms)	0-200	35	
P143	Tight seam mode selection	0-3	0	0: OFF 1: Starting tight seam 2: Ending tight seam 3: Full function
P144	Tacking stitch length compensation in high speed	-50～50	-20	
P145	Back-tacking stitch length compensation in high speed	-50～50	-20	
P153	Ending tight seam stitch length	0-5.0	0.5	
P154	Ending tight seam speed	100-1200	1000	
P159	Direction of ending tight seam	0-1	0	0: Forward 1: Backward
P160	Ending tight seam stitch	0-12	1	

No.	Items	Range	Default	Description
	number			
P165	Stitch counter mode selection	0-4	0	0: Do not count 1. Increase cycle count 2. Decrease cycle count 3. Increase count, alarm after the count is full, need to press the clear key to start recounting 4. Decrease count, alarm after the count is full, need to press the clear key to start recounting
P166	Upper limit of stitch counter (stitch) *10	0-9999	500	
P170	Correction stitches distance of manual button B	0-5.0	0	
P171	Correction stitches distance of manual button C	0-5.0	0	
P173	Correction stitches distance of manual button D	0-5.0	0	
P174	Manual Switch B	0-6	3	0: OFF 1: half stitch 2: one stitch 3: continuous half stitch 4: continuous one stitch 5: Back-tacking when machine stop or pause 6: Tight seam function
P175	Manual Switch C	0-6	0	0: OFF 1: half stitch 2: one stitch 3: continuous half stitch 4: continuous one stitch 5: Back-tacking when machine stop or pause 6: Tight seam function
P176	Manual Switch D	0-6	0	0: OFF 1: half stitch 2: one stitch 3: continuous half stitch 4: continuous one stitch 5: Back-tacking when machine stop or pause 6: Tight seam function
P177	1mm forward stitch length reference value setting	0-2000		
P178	1mm backward stitch length reference value setting	0-2000		
P179	2mm forward stitch length reference value setting	0-2000		

No.	Items	Range	Default	Description
P180	2mm backward stitch length reference value setting	0-2000		
P181	3mm forward stitch length reference value setting	0-2000		
P182	3mm backward stitch length reference value setting	0-2000		
P183	4mm forward stitch length reference value setting	0-2000		
P184	4mm backward stitch length reference value setting	0-2000		
P185	5mm forward stitch length reference value setting	0-2000		
P186	5mm backward stitch length reference value setting	0-2000		
P187	6mm forward stitch length reference value setting	0-2000		
P188	6mm backward stitch length reference value setting	0-2000		
P189	7mm forward stitch length reference value setting	0-2000		
P190	7mm backward stitch length reference value setting	0-2000		

Note: the initial value of parameters is for reference only, and the actual value of parameters is subject to the real object.

3 Error Code List

Error Code	Problem description	Solutions
E01	High voltage	1. Whether the grid voltage is higher than AC260V; 2. If it is self-generated power supply, please reduce the generator power; 3. If it still does not work normally, please replace the control box and notify the after-sales service.
E02	Low voltage	1. Whether to connect to low voltage; 2. Reset; 3. If it still does not work normally, please replace the control box and notify the after-sales service.
E03	CPU communication abnormal	1. Turn off the system power and check whether the connection of the display screen is loose or disconnected, restart the system after returning it to normal. 2. Turn off the system power, remove the control box and only plug in the power cord to power on, whether alarm E05, if it still alarms E03, replace the control box and notify the after-sales service.
E05	Pedal signal abnormal	1. Check whether the pedal connector is loose or fall off, and restart the system after returning it to normal. 2. If it still does not work normally, please replace the control box or speed controller and notify the after-sales service.
E07	Main shaft motor locked-rotor	1. Turn off the power and check whether the handwheel can be turned

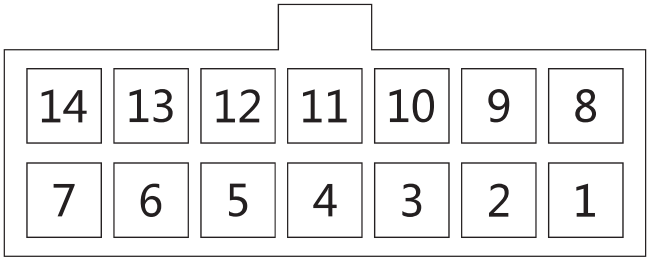
		smoothly (turn the handwheel by hand), if it cannot be turned, please check the machine; 2. Turn off the power, check whether the motor power connector is loose, plug it in and restart it; 3. Check whether the upper needle stop position is correct, if not, please adjust the upper positioning position; 4. If it still does not work normally, please replace the control box or spindle motor and notify the after-sales service.
E10	Electromagnet overcurrent	1. Unplug the solenoid connector, if alarm E10, replace the control box and notify the after-sales service. 2. If there is no alarm after removing the solenoid connector, please plug it back in 1) Step on the front pedal to let the sewing machine perform thread clamping and back-tacking. If alarms, please turn off start back-tacking and end back-tacking, restart the control box, and then step forward. If alarms, please turn off the thread clamping function and restart the electronic control, and step forward again. If there is no alarm, replace the clamper. 2) Step on the front pedal to let the sewing machine perform thread clamping and back-tacking. If it alarms, please turn off start back-tacking and end back-tacking, restart the control box, and then step forward. If there is no alarm, please turn off the thread clamping function and restart the control box, and open start back-tacking function, step forward again, if it alarms, please replace the back-tacking solenoid. 3) Step on the front pedal to let the sewing machine perform thread clamping and back-tacking. If there is no alarm, please step back halfway to raise the presser foot. If it alarms, please replace the presser foot solenoid. 4) Step on the front pedal to let the sewing machine perform thread clamping, back-tacking and half anti-side trample. If there is no alarm, please back step pedal to trim. If it alarms, please replace the thread trimming solenoid.
E09 E11	The positioning signal of main shaft motor encoder is abnormal	1. Turn off the system power, check whether main shaft motor encoder connector is loose or fall off, restore it to normal and restart the system. 2. Check whether the motor zero point correction setting is correct; Reset the motor zero point correction; Whether there is oil on the encoder code plate, please clean it if there is any; 3. If it still does not work normally, please replace the control box or main shaft motor and notify the after-sales service.
E14	Main shaft motor encoder signal is abnormal	1. Turn off the system power, check whether the main shaft motor encoder connector is loose or fall off, restore it to normal and restart the system. 2. Check whether the grating is installed correctly (whether the grating screws are tightened and whether the grating is in the center of the encoder). 3. Check whether there is oil on the encoder code plate, if there is, please clean it up, and restart the system after recovery. 4. If it still does not work normally, please replace the control box or main shaft motor and notify the after-sales service.
E15	Main shaft motor drive overcurrent	1. Please check whether the motor power cord has bad contact; 2. Please check whether the motor power cord is crushed; 3. Please replace the control box or main shaft motor and notify the after-sales

		service.
E17	Machine overturned	1. Turn off the system power and check if the machine is overturned. 2. Check whether the machine protection switch detection setting is correct. 3. If it still does not work normally, please replace the control box or panel and notify the after-sales service.
E20	Main shaft motor failed to start	1. Turn off the system power, check whether main shaft motor power cord connector and encoder connector are loose or fall off, restore them to normal and restart the system. 2. Check whether the motor zero point correction setting is correct, reset the motor zero point correction 3. If it still does not work normally, please replace the control box or main shaft motor and notify the after-sales service.
E80	Abnormal communication between main chip and drive chip	Please replace the control box and notify the after-sales service.
E82	Back-tacking stepper motor overcurrent	1. Turn off the system power and observe whether back-tacking stepper motor is stuck. If it is stuck, remove the mechanical failure of the machine first. If it is normal, check whether connector of back-tacking stepper motor is loose or fall off, restore it to normal and restart the system. 2. If it still does not work normally, please replace the control box or back-tacking stepper motor and notify the after-sales service.
E84	The positioning signal of back-tacking stepper motor encoder is abnormal	1. Turn off the system power and observe whether back-tacking stepper motor is stuck. If it is stuck, remove the mechanical failure of the machine first. If it is normal, check whether the encoder connector of back-tacking stepper motor is loose or fall off, and restart the system after returning it to normal. 2. Check whether the grating is installed correctly (whether the grating screws are fastened and whether the grating is in the center of the encoder); 3. Check if there is oil on the grating code plate, if so, please clean it up, and restart the system after restoration; 4. If it still does not work normally, please replace the control box or back-tacking stepper motor and notify the after-sales service.
E85	Back-tacking motor encoder signal is abnormal	1. Turn off the power of the system, check whether the encoder connector of back-tacking stepper motor is loose or fall off, restore it to normal and restart the system. 2. Check whether the grating is installed correctly (whether the grating screws are fastened and whether the grating is in the center of the encoder); 3. Check if there is oil on the grating code plate, if so, please clean it up, and restart the system after restoration; 4. If it still does not work normally, please replace the control box or back-tacking stepper motor and notify the after-sales service.
E86	Back-tacking stepper motor failed to start	1. Turn off the power of the system, check whether the power cord connector of back-tacking stepper motor and the encoder connector are loose or fall off, restore them to normal and restart the system. 2. Check whether the grating is installed correctly (whether the grating screws are fastened and whether the grating is in the center of the encoder);

		3. Check if there is oil on the grating code plate, if so, please clean it up, and restart the system after restoration; 4. If it still does not work normally, please replace the control box or back-tacking stepper motor and notify the after-sales service.
E87	Back-tacking stepper motor locked-rotor	1. Turn off the system power and observe whether back-tacking stepper motor is stuck. If it is stuck, remove the mechanical failure of the machine first. If it is normal, check whether the power cord connector of back-tacking motor and the encoder connector are loose or fall off, restore them to normal and restart the system. 2. If it still does not work normally, please replace the control box or back-tacking stepper motor and notify the after-sales service.

4. Port diagram

14P function port description



1. Thread trimming electromagnet: 1 (DGND), 8 (+32V)

2. Thread wiping/ thread clamping electromagnet: 2 (DGND), 9 (+32V)

3. Thread tension releasing electromagnet: 3 (DGND), 10 (+32V)

4. LED Light: 4 (DGND), 11 (+5V)

5. Reverse stitch key: 5 (signal)

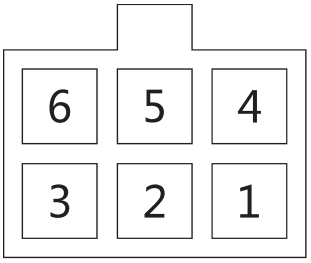
6. Presser foot electromagnet: 6 (DGND), 13 (+32V)

7. Mending stitch key: 7 (signal)

8. 1/2 Mending stitch key: 14 (signal)

9. 1/4 Mending stitch key: 12 (signal)

6P function port description

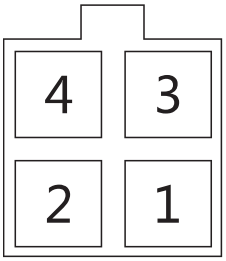


1. Pull thread air electromagnet: 1 (+32V), 4 (DGND)

2. Hook thread air electromagnet: 2 (+32V), 5 (DGND)

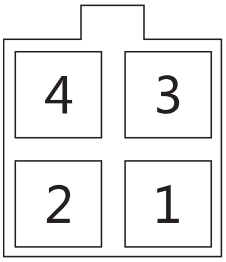
3. Suction air electromagnet: 3 (+32V), 6 (DGND)

4P black function port description



Panel: 1 (RX), 2 (DGND), 3 (S5V), 4 (TX)

4P orange function port description



Presser foot height sensing: 1 (signal), 3 (DGND), 4 (S5V)



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 the equipment described in the instruction book and parts list are subject to change because of modification with out previous notice

BYL - 13S17.OCT.2021