SiRUBA

電控參數說明書

ELECTRONIC CONTROL PARAMETER MANUAL

DT828L for 42/72

⚠安全指示

1.安全上的注意事項

使用前請詳細閱讀本技術資料與所搭配的縫製機械說明書，配合正確使用

（１）電源電壓與工作頻率：請遵照馬達與控制箱銘牌所標之規格。

（2） 電磁波干擾：請遠離高頻波機器或電波發射器等，以免所產生的電磁波干擾本驅動裝置因而方式錯誤動作

（3） 接地：為防止雜訊干擾或漏電事故，請做好接地工程（包括縫紉機、馬達、控制箱、定位器）

拆除馬達或控制箱時，勿帶電拔插；控制箱裡面有危險高電壓，所以關閉電源等 1 分鐘以上放可打開控制箱蓋

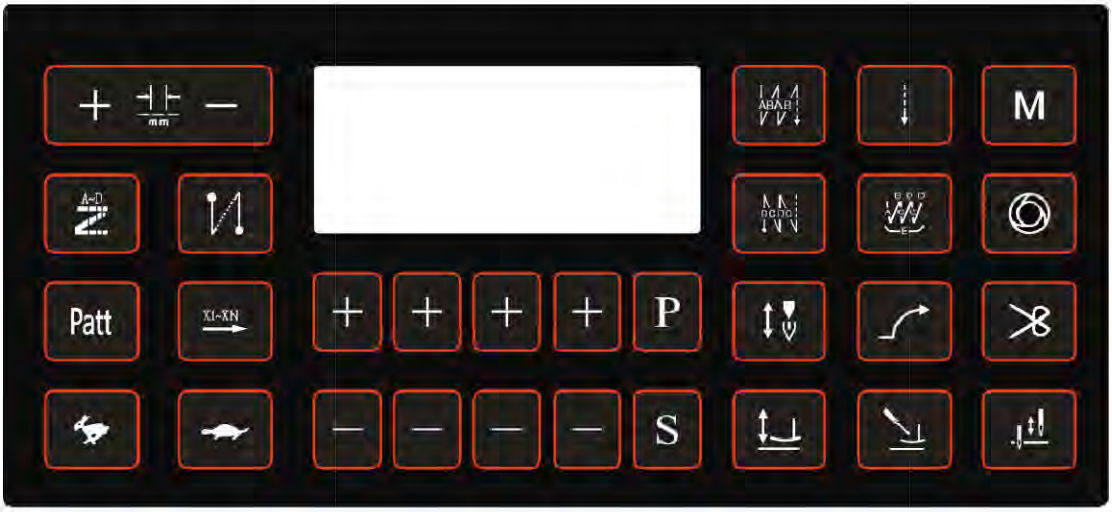
為保證人身安全，請在維修機械或進行穿針作業時關閉電源

這個標示符合表示機器安裝時，如有錯誤恐會傷害到人體或機器會受到損壞

所以機器方面有危險性的地方會有此標誌。

這個識別字合表示高壓電等，電氣方面有危險性的地方會有此標誌。

2 操作盒按鍵說明



+ 針 −	針距大小調節鍵		固縫花樣按鍵
	漂亮縫紉設置按鍵	Patt	花樣編輯按鍵
X1~XN	段式縫花樣自編模式按鍵		提高運行速度
	降低運行速度	+ −	加減鍵
P	功能鍵	S	確認鍵

	前固縫按鍵		自由縫按鍵
	調試功能按鍵		後固縫按鍵
	W 固縫模式按鍵		自動觸發按鍵
	停針位元選擇按鍵		軟啟動按鍵
	剪線設定按鍵		自動抬壓腳選擇按鍵
	手動抬壓腳按鍵		補針按鍵

3．監控模式

正常情況下，按“P”鍵，將參數調整到 42，按“S”確認，進入到監控模式。按下方相對應的加減鍵顯示相關的監控參數。按“P”鍵返回到縫紉模式。

顯示序號	項目名稱	預設值	顯示序號	項目名稱	預設值	顯示序號	項目名稱	預設值	顯示序號	項目名稱	預設值
N01	電控版本號	15	N04	腳踏板 AD 值	345	N07	母線電壓 AD 值	630	N10	剪刀位置感應	0
N02	操作盒版本號	3805	N05	上定位角度	84	N08	錯誤代碼記錄	154	N12	膝靠感應 AD 值	500
N03	車縫速度	0	N06	下定位角度	1403	N09	執行時間	7	N13	壓腳感應 AD 值	0

4． 模式設置

調試模式：正常進入縫紉模式後長安“M”鍵 3 秒，進入到調試模式，若從該模式退回到正常模式，需安“P”鍵退出進入正常模式

显示序号	项目名称	默认值	显示序号	项目名称	默认值	显示序号	项目名称	默认值
72	上停针位校正	84	92	编码器起始角度		128	剪刀动作测试	

正常進入縫紉模式後長安“M”鍵 3 秒，液晶屏顯示“92”，安 S 鍵進入電機角度測試介面，按“  ”鍵，電機會轉動幾下，之後液晶屏顯示角度數位，代表電機光柵片的安裝角度為顯示數位，按 S 鍵保存。若要從該模式退回到正常模式，按“P”鍵退出進入正常模式。

正常進入縫紉模式後長安“M”鍵 3 秒，液晶屏顯示“92”，按下方加鍵切換到“72”按 S 鍵進入機械零位元調整介面，轉動手輪，顯示幕的數值會隨手輪位置變化而變化，按“S”鍵保存當前位置數值為上停針位位置。若要從該模式退回到正常模式，按“P”鍵退出進入正常模式。

正常進入縫紉模式後長安“M”鍵 3 秒，液晶屏顯示“92”，按下方加鍵切換到“128”按 S 鍵進入剪線動作測試介面，再按“  ”，剪刀會按照相對應角度動作一次（迴圈）。若要從該模式退回到正常模式，按“P”鍵退出進入正常模式。

密碼模式：長按“P”鍵進入密碼模式，液晶屏顯示 0000，按下方對應的加減鍵修改數值，若密碼正確，按“S”鍵後，可查看高級參數。

保存出廠參數和恢復出廠參數：長按“  ”鍵 5 秒，保存出廠參數完成。長按“  ”鍵 5 秒，輸入正確的密碼，恢復出廠參數完成。

4.4.花樣縫編輯：

正常進入縫紉機模式後長按“Patt”鍵，液晶屏顯示“n-01 01”，按“+ -”鍵切換 n1-n9 花樣，選定要設置的花樣號後按“S”鍵進入設置，液晶屏顯示“1 1 3.0”，此時可以進行第一段的針數、重複次數和針距值得設置，按下方對應的鍵和“+ -”鍵設置各參數值，按 S 鍵保存，P 鍵退出，一段設置完成；按“+ -”鍵，液晶屏顯示 n01 02，按“S”鍵進入設置，液晶屏顯示“1 1 3.0”，此時可以進行第二段的針數、重複次數和針距值設置，按下方對應的鍵和“+ -”鍵設置各參數值，按“S”鍵保存，P 鍵退出，二段設置完成；按“ ”鍵，液晶屏顯示 n01 03，按“S”鍵進入設置，液晶屏顯示“1 1 3.0”，此時若將當前段數的針數設置為零，則縫紉時不進行此段的縫紉；設置完成後按 S 鍵保存，按 P 鍵退出。若從該模式退回到正常模式，按兩次“P”鍵即可。

长按 Patt 键进入，界面显示			按 S 键进入，界面显示		
花样编号	N-01	01	1	1	3.0
含义	花样号	1 号第一段花样	针数	重复次数	针距大小
编辑方式	下方加减键	+ -	下方加减键	下方加减键	+ -

長按Patt 鍵進入，介面顯示			按S 鍵進入，介面顯示		
花樣編號	N-01	02	1	1	3.0
含義	花樣號	1 號第二段花樣	針數	重複次數	針距大小
編輯方式	下方加減鍵	+ -	下方加減鍵	下方加減鍵	+ -

4.5．花樣縫紉方法：正常進入縫紉模式後按“Patt”鍵，液晶屏顯示“n0”，按下方的加減鍵切換 n1-n9花樣，選定要縫紉的花樣號後按“S”鍵確認，此時按選定的花樣進行縫紉；退出花樣縫時，將參數調整到“n0”，按“S”鍵確認，P 鍵退出進入自由縫模式。

5．參數表

※按“O”鍵3秒，，密碼Key 2017後，按"S"鍵，即恢復原廠設定。

参数项	中文说明	范围	初始值	内容值名称说明与备注
P01	最高转速（rpm）	100-2700	2500	
P02	加速曲线调整（%）	10-100	100	控速器爬升斜率设定 斜率值愈大，速度愈陡； 斜率值愈小，速度愈慢。
P03	停针位选择	UP/DN	DN	UP：上停针；DN：下停针
P04	起始回缝速度（rpm）	100-2000	1500	
P05	终止回缝速度（rpm）	100-2000	1500	
P06	连续回缝速度（rpm）	100-2000	1500	
P07	慢速起缝速度（rpm）	200-1500	1500	
P08	慢速起缝针数（针）	0-15	2	
P09	自动定针缝速度（rpm）	200-3000	2200	定针缝自动触发功能打开的速度设定。
P10	停针位后自动执行终止回缝功能	ON/OFF	ON	ON：在执行完最后一段定针缝后，将自动执行终止回缝动作。即在任何缝制模式下，终止回缝前不能作补针功能。 OFF：在执行完最后一段定针缝后，将无法自动执行终止回缝功能，必须重新再作前或全后踏动作时始可。
P11	回缝线迹整体补偿	-20～20	0	同时增加或减小 P18、P19、P25、P26、P32、P33 项的参数值。
P12	起始回缝运动模式选择	0-1	1	0：受踏板控制，可任意停止与启动。 1：轻触踏板，自动执行回缝动作。

參數項	中文說明	範圍	初始值	內容值名稱說明與備註
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	慢速起縫功能設置	ON/OFF	OFF	
P15	補針方式	0-4	3	0：半針；1：一針； 2：連續補半針； 3：連續補一針； 4: 連續補針, 快速停車 5：倒縫功能 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	計數器模式選擇	0-1	1	0：P41 項計數器不自動計數 1：P41 項計數器每切線一次自動計數
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
P17-N16	螢幕清晰度	0-10	4	設定螢幕的清晰度
P18	起始回縫線跡補償 1	0-200	190	起始回縫 A 段針跡補償，0～200 動作逐步滯後；數值越大，A 短最後一針越長，B 段第一針越短。
P19	起始回縫線跡補償 2	0-200	190	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	190	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	190	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。
P27	自由縫花樣樣式編輯			
P28	連續回縫運動模式選擇	0-1	1	0：人工，受踏板控制，可任意停止與啟動 1：自動，輕觸踏板，自動執行回縫動作
P29	切線停車力度	1-45	20	
P30	膝靠抬壓腳時松線開始動作的壓腳高度	0-300	80	
P31	膝靠抬壓腳時松線功能開關	0-1	1	0：關閉； 1：松線
P32	連續回縫補償 5	0-200	190	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	190	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；

參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P35	抬壓腳時松線功能設定	0-2	1	0：關閉； 1：抬壓腳時松線出力功能開啟，中途停車時松線出力功能關閉；　　2：抬壓腳時松線出力功能和中途停車時松線出力功能開啟
P36	松線功能設定	0-1	1	0：關閉； 1：松線；
P37	撥線/夾線功能設定	0-11	1	0：功能關閉 1：撥線/挺線功能開啟 2～11：夾線功能開啟，數值越大動作力度越大
P38	自動切線功能設置	ON/OFF	ON	
P39	中途停車自動抬壓腳設定	UP/DN	DN	UP：開啟 DN：關閉
P40	切線自動抬壓腳設定	UP/DN	DN	UP：開 啟 DN： 關閉
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-N01	電控版本號			
P42-N02	選針盒版本號		2101	
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			
P42-N15	步進版本號			
P42-N16	針數計數器顯示（每縫 10 針，數值變化 1）			
P42-N17	維護運行針數（萬針）*10			
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）	10-300	40	
P48	最低速度（定位速度）（rpm）	100-500	210	
P49	切線速度（rpm）	100-250	200	調整切線週期時的主軸電機速度
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；
參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P54	切線動作時間（ms）	10-990	200	
P55	撥 / 掃線動作時間	10-990	50	
P56	開電後自動找上定位	0-1	0	0：始終不找上定位 1：始終找上定位；
P57	松線保護時間（s）	1-60	60	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	273	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	23	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）	100-3000	2200	
P61	A 項測試	OFF/ON	OFF	持續運行測試模式
P62	B 項測試	OFF/ON	OFF	全功能啟停測試模式
P63	C 項測試	OFF/ON	OFF	無定位、無功能啟停測試模式
P64	測試執行時間	1-250	30	
P65	測試停止時間	1-250	10	
P66	機頭保護開關檢測	0-2	1	0：不檢測； 1：檢測零信號； 2：檢測正信號
P67	切線保護開關檢測	ON/OFF	OFF	OFF：不檢測；ON：檢測
P68	最高限速	100-3000	2700	
P69	花樣自由縫速度	100-1800	1500	
P70	機型選擇	1-60	28	
P71	補針針距	0-【P123】	0.3	
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， 短按 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， 短按 S 鍵可保存當前位置（數值）為下停針位。
P74	正縫針距補償	-100-100	-16	以 0 補償，往大調為正補償，正縫針距變大，往小調為負補償，正縫針距變小
P75	倒縫針距補償	-100-100	-14	以 0 補償，往大調為負補償，倒縫針距變大，往小調為負補償，倒縫針距變小
P76	倒縫步進電機的剎車力度	0-5	0	
P77	自由縫連終止回縫時倒縫回應時機	20-350	125	
P78	夾線器起夾角度	5-359	180	
P79	夾線器結束角度	5-359	230	
P80	進刀角度	0-359	55	第一次進度角度（下定位為 0°計算）
P81	第一次退刀角度	1-359	172	
P82	第二次退刀角度	0-359	220	第一次退刀角度（下定位為 0°計算）
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	1-10	7	
P86	上下定位距離	100-345	110	上下定位距離角度（每 4 個數值為 1 度）

P87	撥/掃線回程延遲時間	10-990	50	確保撥線/無鳥巢鉤線機構回到原位
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	
參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P91	慢速起縫第二針速度	200-1500	1000	
P92	電機電角度校正			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	半反踏功能延遲時間（ms）	10-900	100	
P95	壓腳第一段出力動作的周期信號（%）	10-100	100	
P96	主軸電機堵轉電流峰值（A）	0-20	10	
P97	主軸電機堵轉保護時間（s）	0-10	5	
P98	松線保護時間（s）	1-10	2	
P99	起始密縫針距	0-【P123】	0.5	
P100	起始密縫方向	0-1	0	0：逆時針方向 1：順時針方向
P101	松線開始角度	1-359	170	松線開始角度（下定位為 0°計算）
P102	松線結束角度	1-359	250	松線結束角度（下定位為 0°計算，需大於 P101 項參數值）
P103	大夾線器啟夾電流	1-80	30	
P105	自由縫花樣樣式選擇	n0-n9	n0	n0：關閉； n1～n9：自由縫花樣樣式；
P106	主軸電機平時電流（A）	0-20	16	
P107	起始密縫速度	100-3000	1000	
P108	起始密縫針數	0-12	0	
P109	撥/掃線前延遲時間（ms）	5-990	5	找到上定位後進入撥/掃線動作前的間隔時間
P110	切線回程時間（ms）	60-990	100	確保切線機構回到原位
P111	無鳥巢模式開關	0-1	0	0：關閉； 1：開啟；
P112	無鳥巢鉤線前延時	0-990	60	
P113	無鳥巢鉤線動作時間	0-990	70	
P114	無鳥巢鉤線返程時間	0-990	30	
P115	無鳥巢鉤線占空比	1-100	70	
P116	無鳥巢吸氣時間	0-5000	500	
P117	無鳥巢挺線占空比	0-100	45	
P118	花樣縫模式手動倒縫按鍵的功能選擇	0-1	0	0：一直按住按鍵可以實現倒著縫紉花樣。 1：點擊按鍵則清除當前正進行的花樣針數並重新開始，用於轉角縫紉時避免突出一針；
P119	電磁鐵過流保護檢測開關	0-1	0	0：不檢測 1：檢測；
P121	剪線後抬壓腳動作提前角度	0-50	0	
P122	膝靠啟動 AD 值	0-1023	600	
P123	最大針距限制	0-7.0	5.0	

P124				
P125	中途抬壓腳高度補償	0-320	80	以80為0 補償，往大調為正補償，壓腳高度升高，往小調為負補償，壓腳高度降低
參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P126	電子膝靠最高壓腳高度	0-【P172】	220	
P127	膝靠功能選擇	0-2	1	0：關閉； 1：主軸電機停止時有效； 2：主軸電機運行和停止時都有效；
P128	切線功能測試			在參數設定介面，短按切線鍵，轉動手輪，切線將按照設定的角度進行動作。
P129	倒縫步進電機零點校正	-500-500	0	
P130	切線步進電機零點校正	-200-200	-10	
P131	正常針距	0-【P123】	3.5	
P132	加密針距	0-【P123】	2.0	
P134	第二次切線距離（後動作）	0-200	21	
P135	電子膝靠最低壓腳高度	0-【P172】	45	
P136	最高壓腳高度	0-【P172】	180	
P137	第一次切線距離（先動作）	0-200	110	
P138	壓腳釋放緩衝占空比(%)	0-100	20	
P139	壓腳釋放緩衝延遲時間(ms)	0-200	10	
P140	第二次退刀速度	20-1000	300	
P141	第一次退刀速度	20-1000	200	切線過程第一段速度
P142	第一次進刀速度	20-1000	450	切線過程第二段速度
P143	密縫模式	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	高速正縫針距整體補償	-100-100	0	
P145	高速倒縫針距整體補償	-100-100	0	
P146	壓腳速度	20-400	250	
P147	壓腳電機運轉方向	0-1	0	
P148	主軸電機運行時，電子膝靠最高壓腳高度	0-【P172】	100	
P149	倒縫步進電機的保持電流	0-12	6	
P150	壓腳步進電機的保持電流	0-25	15	
P151	倒縫步進電機的最大電流	0-12	12	
P152	壓腳步進電機的最大電流	0-65	50	
P153	漂亮縫針距	0-【P123】	0.5	
P154	漂亮縫速度	100-3000	1000	
P155	手動補針按鍵功能切換	0-1	0	0：補針功能； 1：密縫功能

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	2	
P161	存維護針數高 16 位	0	0	
P162	存維護針數低 16 位	0	0	
參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P163	存底線針數高 16 位	0	0	
P164	存底線針數低 16 位	0	0	
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）	0-9999	500	
P167	維護針數上限值（萬針）*10	0-9999	0	
P169	logo 燈的亮度設置	0-3	0	
P170	手動按鍵 N 的補針針距	0-【P123】	0.3	
P171	手動按鍵 L 的補針針距	0-【P123】	0.8	
P172	最高壓腳高度限制	0-300	220	
P173	手動按鍵 R 的補針針距	0-【P123】	1.8	
P174	手動按鍵 N 的功能選擇	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
P175	手動按鍵 L 的功能選擇	0-6	2	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 R 的功能選擇	0-6	2	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	58	
P178	反向 1mm 針距基準值	0-2000	47	
P179	正向 2mm 針距基準值	0-2000	100	
P180	反向 2mm 針距基準值	0-2000	85	
P181	正向 3mm 針距基準值	0-2000	145	
參數項	中文說明	範圍	初始值	內容值名稱說明與備註
P182	反向 3mm 針距基準值	0-2000	128	
P183	正向 4mm 針距基準值	0-2000	185	
P184	反向 4mm 針距基準值	0-2000	160	
P185	正向 5mm 針距基準值	0-2000	222	
P186	反向 5mm 針距基準值	0-2000	190	
P187	正向 6mm 針距基準值	0-2000	262	
P188	反向 6mm 針距基準值	0-2000	228	
P189	正向 7mm 針距基準值	0-2000	300	
P190	反向 7mm 針距基準值	0-2000	252	
P201	起縫抬壓腳開關	0-1	0	0：關閉； 1：開啟
P202	起縫抬壓腳開始角度	0-359	1	
P203	起縫抬壓腳結束角度	0-359	80	
P204	起縫抬壓腳力度	0-100	60	
P205	起縫第 1 針速度（rpm）	0-9999	0	
P206	起縫第 2 針速度（rpm）	0-9999	0	
P207	起縫第 3 針速度（rpm）	0-9999	0	
P211	松線第一段出力動作的周期信號（%）	1-100	35	
P212	松線第一段出力動作時間	0-100	20	
P234	花樣縫停針功能	0-1	0	0：關閉 1：停針需走完當前花樣
P235	（0mm～【P245】）花樣縫線跡補償	0-200	188	
P236	（【P245】～7mm）花樣縫線跡補償	0-200	180	
P237	（【P245】～7mm）起始回縫線跡補償 1	0-200	180	起始回縫 A 段針跡補償，0～200 動作逐步滯後；數值越大，A 短最後一針越長，B 段第一針越短。
P238	（【P245】～7mm）起始回縫線跡補償 2	0-200	180	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。
P239	（【P245】～7mm）終止回縫線跡補償 3	0-200	180	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。
P240	（【P245】～7mm）終止回縫線跡補償 4	0-200	180	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。
P241	（【P245】～7mm）連續回縫線跡補償 5	0-200	180	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

P242	（【P245】～7mm）連續回縫線跡補償 6	0-200	180	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
P243	（【P245】～7mm）終止回縫第一針針距補償	0-200	0	
P244	【P245】～7mm）回縫線跡	-20～20	0	同時增加或減小 P237、P238、P239、P240、P241、P242
參數項	中文說明	範圍	初始值	內容值名稱說明與備註
	整體補償			項的參數值
P245	大針距設置	0-7.0	5.5	
P246	（【P245】～7mm）起始回縫、終止回縫、連續回縫 限速	200-1600	1200	
P247	回縫轉角針距補償 1	-100-100	0	回縫時，正縫轉倒縫的補償
P248	回縫轉角針距補償 2	-100-100	0	回縫時，倒縫轉正縫的補償
P249	倒縫步進電機速度	50-1000	600	
P254	7mm 高速正縫針距整體補償	-100-100	0	參數值為 0 時，所有針距的高速正縫針距整體補償都由 P144 項控制
P255	7mm 高速倒縫針距整體補償	-100-100	0	參數值為 0 時，所有針距的高速倒縫針距整體補償都由 P145 項控制

注：參數初始值僅供參考，實際參數值以實物為准。

6 錯誤代碼表

錯誤碼	內容	對策
E01	1. 電源 ON 時，主電壓檢測過高 2. 供應電源電壓過高時	關閉系統電源，檢測供應電源電壓是否正確。（或是否超過使用規定的額定電壓）。 若正確，請更換控制箱並通知售後服務。
E02	1. 電源 ON 時，主電壓檢測過低 2. 供應電源電壓過低時	關閉系統電源，檢測供應電源電壓是否正確。（或是否低於使用規定的額定電壓）。 若正確，請更換控制箱並通知售後服務。
E03	操作面板與 CPU 傳輸通信異常	關閉系統電源，檢查控制台的連線是否鬆動或脫落，將其恢復正常後重啟系統。若仍不能正常工作，請更換控制箱並通知售後服務。
E05	控速器接觸異常	關閉系統電源，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。若仍不能正常工作，請更換控速器並通知售後服務。
E07	1. 馬達插頭配線接觸不良導致不轉 2. 車頭機構銷死或馬達皮帶異物捲入卡死 3. 加工物過厚，馬達扭矩不足無法貫穿 4. 模組驅動出力異常	轉動機頭手輪觀察是否卡住。如卡住則先排除機械故障。 如轉動正常，檢查電機編碼器接頭和電機電源線接頭是否鬆動。如有鬆動請修正。 如接觸良好，檢查供應電源電壓是否異常或轉速設置過高。如有請調整。 若仍不能正常工作，請更換控制箱並通知售後服務。
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	定位信號異常	關閉系統電源，檢查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。若仍不能正常工作，請更換電機並通知售後服務。
E13	電力模組過熱保護	關閉系統電源，檢查電磁鐵連接或電磁鐵是否損壞

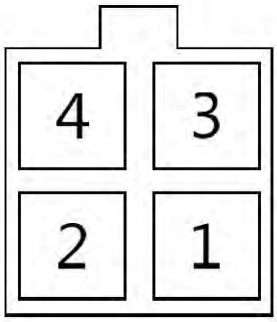
E14	編碼器信號異常	關閉系統電源，檢查電機編碼器介面是否鬆動或脫落，將其恢復正常後重啟系統。若仍不能正常工作，請更換電機並通知售後服務。
E15	電力模組不正常過流保護	關閉系統電源，再重新開啟。若仍不能正常工作，請更換控制箱並通知售後服務。
E16	切線步進電機異常	關閉系統電源，檢查切線機構是否回到正確位置；檢查切線的設置是否錯誤。
E17	機頭保護開關沒到正確位置	關閉系統電源，檢查機頭是否掀開，控制箱內滾珠開關是否移位或損壞。
E20	電機啟動失敗（電角度錯誤）	關閉系統電源，檢查電機編碼器介面和電機電源介面是否鬆動或脫落，將其恢復正常後重啟系統。若仍不能正常工作，請更換控制箱並通知售後服務。
E28	維護保養警高	請進行維護保養。（報警時，按 S 鍵進行清除並重新計數。）
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、 若扔不能正常工作，請更換控制箱或倒縫步進電機並通知售後服務
E92	剪線(壓腳)步進電機過流	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)步進電機介面是否松 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	剪線(壓腳)步進電機堵轉	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。

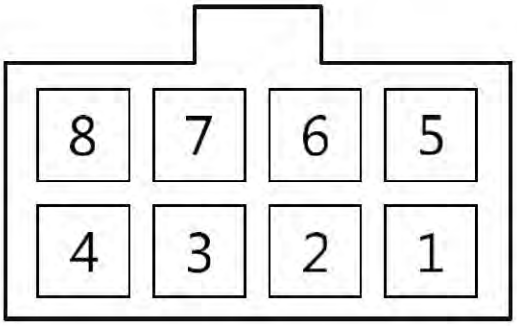
7.各埠接線示意圖

7-1.4P 埠示意圖



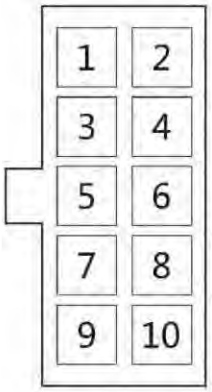
1.壓腳高度感應：1、3（DGND）、4（S5V）

7-2.8P 埠示意圖



1、5：右分離電磁鐵
2、6：左分離電磁鐵
3、7：掃線電磁鐵
4、8：松線電磁鐵

7-3.10P 埠示意圖



1. 地线（按钮蓝色线）　2. 预留输入口（+5V）
3. 预留输入口　4. 预留输入口
5. 按键L（按钮黄色线）　6. 按键R（按钮红色线）
7. 机头灯+（红色线）　8. 倒缝按键(按钮棕色线)
9. 机头灯-（黑色线）　10. 密缝按键（按钮黑色线）

⚠ Safety instructions

1. Safety precautions

Before use, please read this technical data and the matching sewing machine manual carefully to use correctly

(1) Power supply voltage and working frequency: please follow the specifications marked on the nameplate of the motor and control box.

(2) Electromagnetic wave interference: please keep away from high-frequency wave machine or radio wave transmitter, so as to avoid the generated electromagnetic wave interfering with the drive device and thus acting incorrectly

(3) Grounding: In order to prevent noise interference or leakage accidents, please do a good job in grounding engineering (including sewing machine, motor, control box, positioner)

When removing the motor or control box, do not plug and unplug with power; There is dangerous high voltage in the control box, so turn off the power and wait for more than 1 minute to open the control box cover

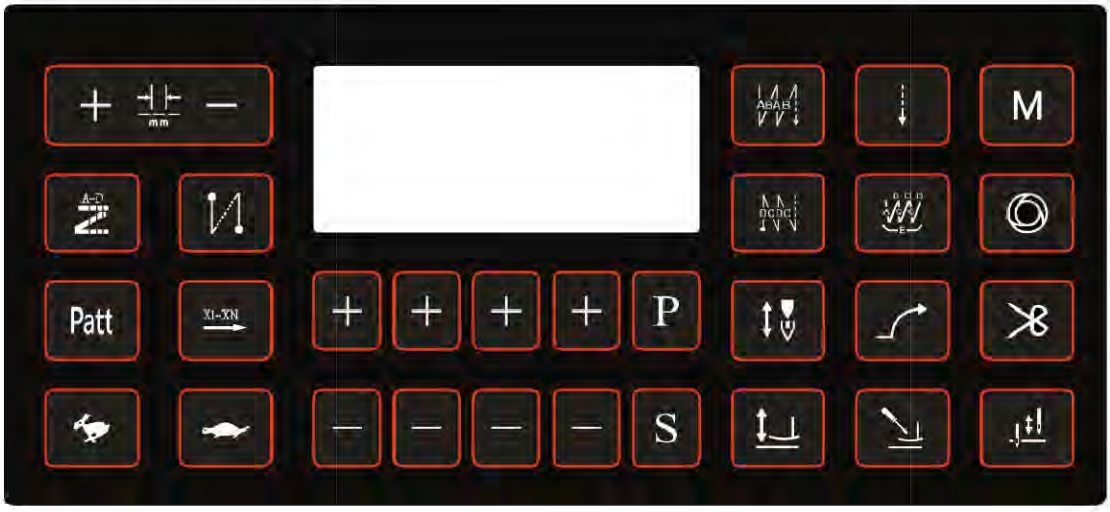
To ensure personal safety, please turn off the power supply when repairing the machine or threading

This sign indicates that the machine may be injured or damaged if there is an error during installation

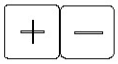
So there will be this sign in the dangerous places of the machine.

This sign is suitable for indicating high voltage, etc., and it will be displayed in places with electrical hazards.

2 Operation box key description



	Needle pitch adjustment key		Bar-tacking pattern key
	Beautiful sewing setting button	Patt	Pattern editing button

	Self-made mode key for segmental sewing pattern		Increase operation speed
	Reduce running speed		Plus and minus keys
	Function keys		Confirm key
	Front bar-tacking button		Free sewing button
	Debugging function key		Back bar-tacking button
	W bar-tacking mode key		Automatic trigger button
	Needle stop position selection button		Soft start button
	Thread trimming setting button		Automatic presser foot lift selection button
	Manual presser foot lifting button		Needle compensation key

3. Monitoring mode

Under normal circumstances, press the "P" key to adjust the parameter to 42, and press the "S" key to confirm to enter the monitoring mode. Press the corresponding plus and minus keys below to display the relevant monitoring parameters. Press the "P" key to return to the sewing mode.

Show sequence number	entry name	Default	Show sequence number	entry name	Default	Show sequence number	entry name	Default	Show sequence number	entry name	Default
N01	Electric control version number	15	N04	Foot pedal AD value	345	N07	Bus voltage AD value	630	N10	Scissor position sensing	0
N02	Operation box version number	3805	N05	Upper positioning angle	84	N08	Error code record	154	N12	Knee rest sensing AD value	500
N03	Sewing speed	0	N06	Lower positioning angle	1403	N09	Run time	7	N13	Presser foot sensing AD value	0

4. Mode setting

Debugging mode: After entering the sewing mode normally, press the "M" key for 3 seconds to enter the debugging mode. If returning from this mode to the normal mode, press the "P" key

to exit and enter the normal mode

Show sequence number	entry name	Default	Show sequence number	entry name	Default	Show sequence number	entry name	Default
72	Upper stop needle position correction	84	92	Encoder start angle		128	Scissor action test	

After entering the sewing mode normally, press the "M" key for 3 seconds, and the LCD screen will display "92". Press the "S" key to enter the motor angle test interface. Press the "" key, and the motor will rotate several times. After that, the LCD screen will display the angle number, which represents the installation angle of the motor grating. Press the S key to save. To return from this mode to the normal mode, press the "P" key to exit and enter the normal mode.

After entering the sewing mode normally, press the "M" key for 3 seconds, and the LCD screen will display "92". Press the lower plus key to switch to "72". Press the S key to enter the mechanical zero adjustment interface. Turn the handwheel, and the display value will change with the position of the handwheel. Press the "S" key to save the current position value as the upper stop position. To return from this mode to the normal mode, press the "P" key to exit and enter the normal mode.

After entering the sewing mode normally, press the "M" key for 3 seconds, and the LCD screen will display "92". Press the lower plus key to switch to "128". Press the S key to enter the thread trimming action test interface. Press "" again, and the scissors will move once according to the corresponding angle (cycle). To return from this mode to the normal mode, press the "P" key to exit and enter the normal mode.

Password mode: press and hold the "P" key to enter the password mode. The LCD screen displays 0000. Press the corresponding plus and minus keys below to modify the value. If the password is correct, press the "S" key to view the advanced parameters.

Save factory parameters and restore factory parameters: press and hold the "" key for 5 seconds to finish saving factory parameters. Press and hold the "" key for 5 seconds, enter the correct password, and restore the factory parameters.

Pattern sewing editing:

After entering the sewing machine mode normally, press and hold the "Pat" key, the LCD screen will display "n-01 01", press the "+-" key to switch the n1-n9 pattern, select the pattern number to be set, press the "S" key to enter the setting, and the LCD screen will display "1 1 3.0". At this time, you can set the number of stitches, the number of repetitions and the stitch length of the first segment, press the corresponding key below and the "" key to set the parameter values, press the S key to save, and press the P key to exit, and the setting of the first segment is completed; Press the "" key, the LCD screen will display n01 02, press the "S" key to enter the setting, and the LCD screen will display "1 1 3.0". At this time, you can set the number of stitches, the number of repetitions, and the stitch length of the second segment. Press the corresponding key below and the "" key to set the parameter values, press the "S" key to save, press the "P"

key to exit, and the second segment setting is completed; Press the "+ 中 −" key, the LCD screen will display n01 03, press the "S" key to enter the setting, and the LCD screen will display "1 1 3.0". At this time, if the number of stitches of the current segment is set to zero, the sewing of this segment will not be performed during sewing; After setting, press S to save and P to exit. To return from this mode to the normal mode, press the "P" key twice.

Press and hold the PAT key to enter, and the interface displays			Press S key to enter, and the interface displays		
Pattern No	N-01	01	1	1	3.0
meaning	Pattern No	Pattern of the first section of No. 1	Number of stitches	Repetitions	Needle pitch size
Edit by	Lower plus and minus keys	中	Lower plus and minus keys	Lower plus and minus keys	中

Press and hold the PAT key to enter, and the interface displays			Press S key to enter, and the interface displays		
Pattern No	N-01	02	1	1	3.0
meaning	Pattern No	Pattern of the second section of No. 1	Number of stitches	Repetitions	Needle pitch size
Edit by	Lower plus and minus keys	中	Lower plus and minus keys	Lower plus and minus keys	中

Pattern sewing method: After entering the sewing mode normally, press the "Pat" key, and the LCD screen will display "n0". Press the plus and minus keys below to switch between n1 and n9 patterns. Select the pattern number to be sewn, and then press the "S" key to confirm. At this time, the selected pattern will be sewn; When exiting pattern sewing, adjust the parameter to "n0", press "S" key to confirm, and P key to exit and enter the free sewing mode.

5. Parameter table

※Press and hold the "O" key for 5 seconds, enter the password 2017 and press the "S" key to restore the factory parameters.

Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
P01	Maximum speed (rpm)	100-2700	2500	
P02	Acceleration curve adjustment (%)	10-100	100	Speed controller climbing slope setting The larger the slope value, the steeper the speed; The smaller the slope value, the slower the speed.
P03	Needle stop position selection	UP/DN	DN	UP: upper needle stop; DN: lower needle stop
P04	Initial back stitch speed (rpm)	100-2000	1500	

P05	End back stitch speed	100-2000	1500	
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
	(rpm)			
P06	Continuous back stitch speed (rpm)	100-2000	1500	
P07	Slow sewing speed (rpm)	200-1500	1500	
P08	Number of stitches (stitches) at slow start	0-15	2	
P09	Automatic fixed needle sewing speed (rpm)	200-3000	2200	The speed setting of the automatic trigger function of fixed-needle sewing.
P10	Automatically execute the function of terminating back stitch after needle stop	ON/OFF	ON	ON: After the last segment of fixed-needle sewing is completed, the end back stitch action will be automatically executed. That is, in any sewing mode, the needle filling function cannot be performed before the back stitch is terminated. OFF: After the last fixed-stitch sewing is completed, the stop back stitch function cannot be automatically executed. It can only be performed when the front or full back step action must be performed again.
P11	Overall compensation of back stitch	-20~20	0	At the same time, increase or decrease the parameter values of P18, P19, P25, P26, P32 and P33.
P12	Start back stitch motion mode selection	0-1	1	0: It is controlled by the pedal and can be stopped and started at will. 1: Touch the pedal to automatically perform the back stitch action.
P13	Start back stitch end mode selection	CON/STP	CON	CON: The function of automatically continuing the next section after the completion of the initial back stitch section. STP: automatically stops after the number of stitches in the initial back stitch section is completed.
P14	Slow start sewing function setting	ON/OFF	OFF	
P15	Needle filling method	0-4	3	0: half needle; 1: One stitch; 2: Continuous half stitch filling; 3: One stitch is added continuously; 4: Continuous needle filling and fast stop 5: Reverse sewing function 6: Tight sewing function
P16	Manual reverse sewing speed limit	0-3200	0	The function is closed when the value is less than 100.
P17	Counter mode selection	0-1	1	0: P41 item counter does not count automatically 1: P41 item counter automatically counts every thread
P17-N06	Automatic piecework function	0-50	1	0: Off 1-50: Set the number of thread cutting pieces.
P17-N12	Startup display counter interface selection	0-1	0	0: Close; 1: On
P17-N13	Automatic piecework mode selection	0-1	0	0: Piece increase mode, 1: Piece decrease mode
P17-N16	Screen definition	0-10	4	Set the sharpness of the screen

P18	Start back stitch compensation 1	0-200	190	Start the stitch compensation of back stitch section A, and the 0~200 action will gradually lag; The larger the value, the shorter the last stitch of A, and the shorter the first stitch of section B.
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
P19	Start back stitch compensation 2	0-200	190	Start back stitch B stitch compensation, and the 0~200 action will gradually lag; The larger the value, the longer the last stitch of segment B.
P21	Pedal acceleration position	30-1000	520	
P22	Pedal return position	30-1000	420	
P23	Pedal presser foot lifting position	30-1000	270	
P24	Pedal tangent position	30-500	130	
P25	End back stitch compensation 3	0-200	190	Terminate the stitch compensation of back stitch section C, and the 0~200 action will gradually lag; The higher the value, the shorter the first stitch of section C
P26	End back stitch compensation 4	0-200	190	End the stitch compensation of back stitch section D, and the 0~200 action will gradually lag; The higher the value, the longer the last stitch of segment C and the shorter the first stitch of segment D.
P27	Free sewing pattern style editing			
P28	Continuous back stitch motion mode selection	0-1	1	0: Manual, controlled by the pedal, can stop and start at will 1: Automatic, touch the pedal, and automatically perform the back stitch action
P29	Tangent parking force	1-45	20	
P30	The height of the presser foot at the beginning of the action when the presser foot is lifted by the knee rest	0-300	80	
P31	Release function switch when knee rest lifts presser foot	0-1	1	0: Close; 1: Loose line
P32	Continuous back stitch compensation 5	0-200	190	Continuous back stitch A (C) stitch compensation, 0~200 action gradually lags; The larger the value, the longer the last stitch of section A (C); The shorter the first stitch of section B (D)
P33	Continuous back stitch compensation 6	0-200	190	Continuous back stitch B (D) section stitch compensation, 0~200 action gradually lags; The higher the value, the longer the last stitch of section B (D), and the shorter the first stitch of section C
P34	Fixed needle sewing motion mode selection	A/M	A	A: Gently touch the foot pedal to automatically execute the fixed-needle sewing action; M: Controlled by the foot pedal, it can stop and start at will;

P35	Thread loosening function setting when lifting presser foot	0-2	1	0: Close; 1: When lifting the presser foot, the thread release output function is turned on, and when
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
				stopping halfway, the thread release output function is turned off; 2: The thread release output function when lifting the presser foot and the thread release output function when stopping halfway are turned on
P36	Loosening function setting	0-1	1	0: Close; 1: Loosen the thread;
P37	Thread dialing/thread clamping function setting	0-11	1	0: Function off 1: Thread dialing/threading function is on 2~11: The wire clamping function is turned on, and the greater the value, the greater the action force
P38	Automatic tangent function setting	ON/OFF	ON	
P39	Automatic presser foot lifting setting when stopping midway	UP/DN	DN	UP: ON DN: Off
P40	Automatic presser foot lifting setting	UP/DN	DN	UP: ON DN: Off
P41	Thread counter display	0-9999	0	Display of the number of finished sewing pieces; Press and hold the minus key to clear the count;
P42-N01	Electric control version number			
P42-N02	Version number of needle selection box		2101	
P42-N03	speed			
P42-N04	Foot pedal AD value			
P42-N05	Mechanical angle (upper positioning)			
P42-N06	Mechanical angle (lower positioning)			
P42-N07	Bus voltage AD value			
P42-N11	status information			
P42-N14	Step version number		8	
P42-N16	Needle count counter display (10 stitches per stitch, value change 1)			
P42-N17	Number of stitches for maintenance operation (10000 stitches) * 10			
P43	Motor rotation direction setting	CCW/CW	CCW	CW: clockwise CCW: counterclockwise
P44	Braking force when stopping halfway	1-45	16	
P45	Pattern free sewing motion mode selection	0-1	0	0: It is controlled by the foot pedal and can be stopped and started at will; 1: Gently touch the foot pedal to automatically perform a pattern sewing action;

P46	After thread cutting, reverse the needle lift function selection	ON/OFF	OFF	
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
P47	Reverse the adjustment of needle lift angle after thread cutting (degrees)	10-300	40	
P48	Minimum speed (positioning speed) (rpm)	100-500	210	
P49	Tangent speed (rpm)	100-250	200	Spindle motor speed when adjusting the cutting cycle
P50	Working time for full output of presser foot lifting (ms)	10-990	200	
P51	Periodic signal of presser foot output (%)	1-50	38	When the presser foot acts, it saves power periodically to avoid the electromagnet from getting hot
P52	Delay motor start, protection presser foot lowering time (ms)	10-990	120	Delay the start time when stepping down to cooperate with the confirmation of automatic presser foot lifting and lowering
P53	The presser foot lift function of the half rear step is canceled	0-2	1	0: Close; 1: Both reverse and semi-reverse treading have presser foot lift; 2: There is no presser foot lifting for semi-reverse stepping, and presser foot lifting for reverse stepping;
P54	Tangent action time (ms)	10-990	200	
P55	Operation time of thread dialing/sweeping	10-990	50	
P56	Automatic locating after power on	0-1	0	0: Never find a location 1: Always locate;
P57	Loosening protection time (s)	1-60	60	Forced closing after holding time to prevent the electromagnet from getting hot due to long-time closing
P58	Upper positioning adjustment	0-359	273	Upper positioning adjustment. When the value decreases, the needle will stop in advance, and when the value increases, the needle will stop in delay
P59	Lower positioning adjustment	0-359	23	Lower positioning adjustment. When the value decreases, the needle will stop in advance, and when the value increases, the needle will stop in delay
P60	Test speed (rpm)	100-3000	2200	
P61	Test A	OFF/ON	OFF	Continuous operation test mode
P62	Test B	OFF/ON	OFF	Full-function start-stop test mode
P63	Test C	OFF/ON	OFF	No positioning, no function start/stop test mode

P64	Test run time	1-250	30	
P65	Test stop time	1-250	10	
P66	Head protection switch	0-2	1	0: No detection;
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
	detection			1: Detect zero signal; 2: Detect positive signal
P67	Detection of tangent protection switch	ON/OFF	OFF	OFF: no detection; ON: detection
P68	Maximum speed limit	100-3000	2700	
P69	Pattern free sewing speed	100-1800	1500	
P70	Model selection	1-60	28	
P71	Stitch length	0-【P123】	0.3	
P72	Quick adjustment of upper positioning	0-359		Adjust the upper needle stop position, and the displayed value will change with the change of the handwheel position. Short press the S key to save the current position (value) as the upper needle stop position.
P73	Quick adjustment of lower positioning	0-359		Adjust the lower needle stop position, and the displayed value will change with the change of the handwheel position. Short press the S key to save the current position (value) as the lower needle stop position.
P74	Positive sewing needle distance compensation	-100-100	-16	With 0 compensation, the larger adjustment is positive compensation, the larger the positive stitch length, the smaller the negative compensation, and the smaller the positive stitch length
P75	Backstitch stitch compensation	-100-100	-14	With 0 compensation, adjust the large adjustment to negative compensation, the stitch length of reverse sewing becomes larger, and adjust the small adjustment to negative compensation, and the stitch length of reverse sewing becomes smaller
P76	Braking force of backstitch stepper motor	0-5	0	
P77	Response time of reverse sewing when free sewing is terminated	20-350	125	
P78	Clamping angle of wire clamp	5-359	180	
P79	End angle of wire clamp	5-359	230	
P80	plunge angle	0-359	55	The first progress angle (calculated as 0 °)
P81	First retraction angle	1-359	172	
P82	Second retraction angle	0-359	220	First retraction angle (calculated at 0 ° for lower positioning)
P83	Stopping force after cutting	10-100	20	

P84	Tangent full output time (ms)	10-990	60	
P85	Periodic signal of	1-10	7	
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
	tangent output			
P86	Up and down positioning distance	100-345	110	Up and down positioning distance angle (1 degree for every 4 values)
P87	Delay time of dial/sweep return	10-990	50	Make sure that the thread pulling/no bird's nest hook mechanism returns to its original position
P88	Stopping and braking distance	10-100	30	
P89	AC overvoltage value setting	500-1023	880	
P90	First stitch speed of slow start sewing	200-1500	400	
P91	The second stitch speed of slow start sewing	200-1500	1000	
P92	Motor electrical angle correction			Read the starting angle of the encoder, which has been set at the factory, and do not change it at will (the parameter value cannot be changed manually, and random change will cause abnormality or damage to the control box and motor)
P93	Delay time of semi-reverse pedal function (ms)	10-900	100	
P95	Cycle signal of the first section of the presser foot output action (%)	10-100	100	
P96	Peak locked-rotor current of spindle motor (A)	0-20	10	
P97	Spindle motor locked-rotor protection time (s)	0-10	5	
P98	Loosening protection time (s)	1-10	2	
P99	Start stitch length	0-【P123】	0.5	
P100	Initial sealing direction	0-1	0	0: counterclockwise 1: clockwise
P101	Start angle of loose line	1-359	170	Start angle of loose line (calculated as 0 ° for lower positioning)
P102	End angle of loose line	1-359	250	End angle of loose line (lower positioning is calculated as 0 °, which should be greater than the parameter value of P101)
P103	Large clamp opening current	1-80	30	
P105	Free sewing pattern style selection	n0-n9	n0	N0: off; N1 ～ n9: free sewing pattern style;

P106	Normal current of spindle motor (A)	0-20	16	
P107	Initial sealing speed	100-3000	1000	
P108	Initial number of close	0-12	0	
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
	stitches			
P109	Delay time before dialing/scanning (ms)	5-990	5	The interval before entering the thread dialing/sweeping action after finding the upper position
P110	Tangent return time (ms)	60-990	100	Ensure that the thread trimming mechanism returns to its original position
P111	No bird nest mode switch	0-1	0	0: Close; 1: Open;
P112	Delay before hooking without bird's nest	0-990	60	
P113	No bird's nest hooking action time	0-990	70	
P114	Return time without bird's nest hook	0-990	30	
P115	No bird's nest hook line duty cycle	1-100	70	
P116	Inspiratory time without nest	0-5000	500	
P117	No bird's nest thread duty ratio	0-100	45	
P118	Function selection of manual reverse sewing button in pattern sewing mode	0-1	0	0: Hold down the key all the time to realize reverse sewing pattern. 1: Click the key to clear the number of pattern stitches currently in progress and start again. When it is used for corner sewing, avoid protruding one stitch;
P119	Electromagnet overcurrent protection detection switch	0-1	0	0: Do not detect 1: Detection;
P121	Advance angle of presser foot lifting action after thread trimming	0-50	0	
P122	Knee support start AD value	0-1023	600	
P123	Maximum stitch length limit	0-7.0	5.0	

P125	Midway presser foot height compensation	0-320	80	Compensate with 80 as 0, adjust the height of the presser foot upward, adjust the height of the presser foot downward, and adjust the height of the presser foot downward
P126	Maximum presser foot	0-【P172】	220	
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
	height of electronic knee rest			
P127	Knee support function selection	0-2	1	0: Off; 1: Valid when the spindle motor stops; 2: It is effective when the spindle motor runs and stops;
P128	Tangent function test			In the parameter setting interface, briefly press the tangent key and turn the handwheel. The tangent will act according to the set angle.
P129	Zero point correction of reverse sewing stepper motor	-500-500	0	
P130	Zero point correction of tangent stepping motor	-200-200	-10	
P131	Normal needle pitch	0-【P123】	3.5	
P132	Densified needle pitch	0-【P123】	2.0	
P134	Second tangent distance (after action)	0-200	21	
P135	Minimum presser foot height of electronic knee rest	0-【P172】	45	
P136	Maximum presser foot height	0-【P172】	180	
P137	First tangent distance (first action)	0-200	110	
P138	Presser foot release buffer duty ratio (%)	0-100	20	
P139	Presser foot release buffer delay time (ms)	0-200	10	
P140	Second retraction speed	20-1000	300	
P141	First retraction speed	20-1000	200	Speed of the first section of the tangent process
P142	First feed speed	20-1000	450	The second speed of the tangent process
P143	Tight seam mode	0-3	0	0: Close; 1: Start the sealing seam; 2: The closing seam is opened; 3: Start and close the joint and end the joint;
P144	Overall compensation for needle distance of high-speed forward sewing	-100-100	0	

P145	Overall compensation for needle distance of high-speed reverse sewing	-100-100	0	
P146	Presser foot speed	20-400	250	
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
P147	Running direction of presser foot motor	0-1	0	
P148	When the spindle motor is running, the electronic knee rests on the maximum presser foot height	0-【P172】	100	
P149	Holding current of reverse sewing stepper motor	0-12	6	
P150	Holding current of stepping motor	0-25	15	
P151	Maximum current of reverse sewing stepper motor	0-12	12	
P152	Maximum current of stepping motor	0-65	50	
P153	Beautiful stitch length	0-【P123】	0.5	
P154	Beautiful sewing speed	100-3000	1000	
P155	Function switch of manual needle compensation key	0-1	0	0: Needle compensation function; 1: Tight sewing function
P159	Direction of end sealing joint	0-1	0	0: normal sewing; 1: Reverse sewing
P160	Number of stitches for terminating close sewing	0-12	2	
P161	The number of stitches for storage and maintenance is 16 bits high	0	0	
P162	Lower 16 bits of the number of maintenance pins	0	0	
P163	Upper 16 bits of stitches of bobbin thread	0	0	
P164	Lower 16 bits of stitches stored	0	0	

P165	Pin counter mode selection	0-4	0	0: Do not count; 1. Incremental cycle count; 2. Decreasing cycle count; 3. Incremental counting, alarm when the count is full, and the clear key is required to start the counting again;
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
				4. Decrement the count, alarm when the count is full, and reset the count by pressing the clear key number
P166	Upper limit value of needle counter (needle)	0-9999	500	
P167	Upper limit of maintenance stitches (10000 stitches) * 10	0-9999	0	
P169	Brightness setting of logo light	0-3	0	
P170	Needle compensation distance of manual key N	0-【P123】	0.3	
P171	Replenishing needle distance of manual key L	0-【P123】	0.8	
P172	Maximum presser foot height limit	0-300	220	
P173	Replenishing needle distance of manual key R	0-【P123】	1.8	
P174	Function selection of manual key N	0-6	5	0: function off 1: half stitch filling 2: one stitch filling 3: continuous half stitch filling 4: continuous one stitch filling 5: reverse sewing action during sewing or midway stop 6: tight sewing function
P175	Function selection of manual key L	0-6	2	0: Function off 1: Supplement half stitch 2: Make up one stitch 3: Continuous half stitch filling 4: Continue to add one stitch 5: It has reverse sewing action when sewing or stopping halfway 6: Tight sewing function

P176	Function selection of manual key R	0-6	2	0: Function off 1: Supplement half stitch 2: Make up one stitch 3: Continuous half stitch filling 4: Continue to add one stitch 5: It has reverse sewing action when sewing or stopping halfway 6: Tight sewing function
P177	1mm needle pitch reference value in forward direction	0-2000	58	
P178	Reverse 1mm needle pitch	0-2000	47	
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
	reference value			
P179	Reference value of positive 2mm needle distance	0-2000	100	
P180	Reverse 2mm needle pitch reference value	0-2000	85	
P181	3mm needle pitch reference value in forward direction	0-2000	145	
P182	Reverse 3mm needle pitch reference value	0-2000	128	
P183	Reference value of forward 4mm needle distance	0-2000	185	
P184	Reverse 4mm needle pitch reference value	0-2000	160	
P185	5 mm needle pitch reference value in forward direction	0-2000	222	
P186	Reverse 5mm needle pitch reference value	0-2000	190	
P187	6 mm needle pitch reference value in forward direction	0-2000	262	
P188	Reverse 6mm needle pitch reference value	0-2000	228	
P189	Reference value of needle distance of 7mm in positive direction	0-2000	300	

P190	Reverse 7mm needle pitch reference value	0-2000	252	
P201	Stitch lifting presser foot switch	0-1	0	0: Close; 1: On
P202	Start angle of presser foot lifting	0-359	1	
P203	End angle of presser foot lifting	0-359	80	
P204	Presser foot lifting force	0-100	60	
P205	Speed of the first stitch from sewing (rpm)	0-9999	0	
P206	Speed of the second	0-9999	0	
Paramet er item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
	stitch from sewing (rpm)			
P207	Speed of the third stitch (rpm)	0-9999	0	
P211	Periodic signal of output action of the first section of slack line (%)	1-100	35	
P212	The first section of output action time of slack line	0-100	20	
P234	Pattern sewing needle stop function	0-1	0	0:Close 1: The current pattern needs to be finished when the needle stops
P235	(0mm~[P245]) pattern stitch compensation	0-200	188	
P236	([P245] ~ 7mm) Pattern stitch compensation	0-200	180	
P237	([P245] ~ 7mm) Initial back stitch compensation 1	0-200	180	Start the stitch compensation of back stitch section A, and the 0~200 action will gradually lag; The larger the value, the shorter the last stitch of A, and the shorter the first stitch of section B.
P238	([P245] ~ 7mm) Initial back stitch compensation 2	0-200	180	Start back stitch B stitch compensation, and the 0~200 action will gradually lag; The larger the value, the longer the last stitch of segment B.
P239	([P245] ~ 7mm) End back stitch compensation 3	0-200	180	Terminate the stitch compensation of back stitch section C, and the 0~200 action will gradually lag; The larger the value, the shorter the first stitch of segment C.

P240	([P245] ～ 7mm) End back stitch compensation 4	0-200	180	End the stitch compensation of back stitch section D, and the 0~200 action will gradually lag; The higher the value, the longer the last stitch of segment C and the shorter the first stitch of segment D.
P241	([P245] ～ 7mm) Continuous back stitch compensation 5	0-200	180	Continuous back stitch A (C) stitch compensation, 0~200 action gradually lags; The larger the value, the longer the last stitch of section A (C); The shorter the first stitch of section B (D)
P242	([P245] ～ 7mm) Continuous back stitch compensation 6	0-200	180	Continuous back stitch B (D) section stitch compensation, 0~200 action gradually lags; The higher the value, the longer the last stitch of section B (D), and the shorter the first stitch of section C
Parameter item	Chinese description	Range	Initial value	Content Value Name Description and Remarks
P243	([P245] ～ 7mm) End the stitch length compensation of the first stitch of back stitch	0-200	0	
P244	[P245] ～ 7mm) overall compensation of back stitch	-20～20	0	At the same time, increase or decrease the parameter values of P237, P238, P239, P240, P241 and P242
P245	Large needle pitch setting	0-7.0	5.5	
P246	([P245] ～ 7mm) Speed limit of initial back seam, end back seam and continuous back seam	200-1600	1200	
P247	Back stitch angle needle distance compensation 1	-100-100	0	Compensation of forward sewing to reverse sewing during back sewing
P248	Back stitch angle needle distance compensation 2	-100-100	0	Compensation of reverse sewing to normal sewing during back sewing
P249	Reverse sewing stepper motor speed	50-1000	600	
P254	Overall compensation of 7mm high-speed positive sewing needle distance	-100-100	0	When the parameter value is 0, the overall compensation of high-speed positive sewing stitch length of all stitch lengths is controlled by P144
P255	7mm high-speed reverse sewing needle distance overall compensation	-100-100	0	When the parameter value is 0, the overall compensation of high-speed reverse stitch stitch length of all stitch lengths is controlled by P145

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

6 Error code table

Error code	content	countermeasure
E01	1. When the power supply is ON, the main voltage detection is too high 2. When the supply voltage is too high	Turn off the system power and check whether the power supply voltage is correct. (or whether it exceeds the specified rated voltage). If correct, please replace the control box and notify after-sales service.
E02	1. When the power supply is ON, the main voltage detection is too low 2. When the supply voltage is too low	Turn off the system power and check whether the power supply voltage is correct. (or whether it is lower than the specified rated voltage). If correct, please replace the control box and notify after-sales service.
E03	Abnormal transmission communication between operation panel and CPU	Turn off the system power, check whether the wiring of the control panel is loose or loose, and restart
		the system after restoring it to normal. If it still does not work properly, please replace the control box and notify after-sales service.
E05	Abnormal contact of speed controller	Turn off the system power, check whether the speed controller connector is loose or falling off, and restart the system after restoring it to normal. If it still does not work properly, please replace the speed controller and notify after-sales service.
E07	1. The motor plug wiring does not rotate due to poor contact 2. The head mechanism is locked or the motor belt is caught by foreign matters 3. The processed material is too thick and the motor torque is insufficient to penetrate 4. Abnormal output of module drive	Turn the hand-wheel of the machine head to see if it is stuck. If it is stuck, remove the mechanical fault first. If the rotation is normal, check whether the motor encoder connector and the motor power line connector are loose. Please correct any looseness. If the contact is good, check whether the supply voltage is abnormal or the speed is set too high. Please adjust if any. If it still does not work properly, please replace the control box and notify after-sales service.
E10	Electromagnet overcurrent protection	Turn off the system power and check whether the electromagnet (solenoid valve) is damaged or short-circuited.
E09 E11	Abnormal positioning signal	Turn off the system power, check whether the motor encoder interface is loose or falling off, and restart the system after restoring it to normal. If it still does not work properly, please replace the motor and notify after-sales service.
E13	Power module overheat protection	Turn off the system power and check whether the electromagnet connection or electromagnet is damaged
E14	Encoder signal abnormality	Turn off the system power, check whether the motor encoder interface is loose or falling off, and restart the system after restoring it to normal. If it still does not work properly, please replace the motor and notify after-sales service.

E15	Abnormal overcurrent protection of power module	Turn off the system power and then turn it on again. If it still does not work properly, please replace the control box and notify after-sales service.
E16	Tangent stepping motor is abnormal	Turn off the system power and check whether the thread cutting mechanism returns to the correct position; Check whether the setting of tangent is wrong.
E17	The head protection switch is not in the correct position	Turn off the system power supply, check whether the machine head is lifted, and whether the ball switch in the control box is displaced or damaged.
E20	Motor start failure (electrical angle error)	Turn off the system power, check whether the motor encoder interface and motor power interface are loose or falling off, and restart the system after restoring them to normal. If it still does not work properly, please replace the control box and notify after-sales service.
E28	High maintenance alarm	Please carry out maintenance. (In case of alarm, press the S key to clear and count again.)
E80	Abnormal communication between main CPU and stepping drive CPU	Please replace the control box and notify after-sales service.
E82	Reverse sewing stepper motor overcurrent	1. Turn off the system power and observe whether the reverse sewing stepper motor is stuck. If it is stuck, remove the machine first Head mechanical failure. If it is normal, check whether the interface of the backstitch stepper motor is loose or falling off Restart the system after it returns to normal. 2. If it still does not work properly, please replace the control box or the backstitch stepper motor and notify the after-sales service .

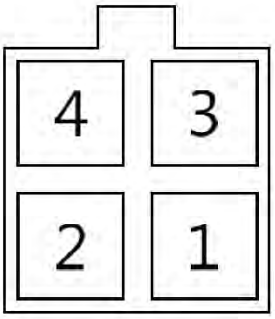
E84	Reverse sewing stepper motor encoder positioning signal abnormal	1. Turn off the system power and observe whether the reverse sewing stepper motor is stuck. If it is stuck, remove the machine first Head mechanical failure. If normal, check whether the encoder interface of the backstitch stepper motor is loose or loose And restart the system after restoring it to normal. 2. Check whether the grating is installed correctly (whether the grating screws are fastened, and whether the grating is being assembled The coder head is in the middle position); 3. Check whether there is oil on the grating code disk. If yes, please clean it and restart the system after recovery System; 4. If it still does not work properly, please replace the control box or the backstitch stepper motor and notify the after-sales service .
E85	Reverse sewing stepper motor encoder signal is abnormal	1. Turn off the system power and check whether the encoder interface of the backstitch stepper motor is loose or falling off, Restart the system after restoring it to normal. 2. Check whether the grating is installed correctly (whether the grating screws are fastened, and whether the grating is being assembled The coder head is in the middle position); 3. Check whether there is oil on the grating code disk. If yes, please clean it and restart the system after recovery
		System; 4. If it still does not work properly, please replace the control box or the backstitch stepper motor and notify the after-sales service .

E86	Reverse sewing stepper motor failed to start	1. Turn off the system power and check whether the power line interface and encoder interface of the backstitch stepper motor are Loosen or fall off, and restart the system after restoring it to normal. 2. Check whether the grating is installed correctly (whether the grating screws are fastened, and whether the grating is being assembled The coder head is in the middle position); 3. Check whether there is oil on the grating code disk. If yes, please clean it and restart the system after recovery System; 4. If it still does not work properly, please replace the control box or the backstitch stepper motor and notify the after-sales service .
E87	Reverse sewing stepper motor blocked	1、Turn off the system power and observe whether the reverse sewing stepper motor is stuck. If it is stuck, remove the mechanical fault of the machine head first. If it is normal, check whether the power line interface and encoder interface of the backstitch stepper motor are loose or fall off, and restart the system after restoring them to normal. 2、If the throw cannot work normally, please replace the control box or the backstitch stepper motor and notify the after-sales service
E92	Thread trimming (presser foot) stepping motor overcurrent	1. Turn off the system power and observe whether the thread trimming (presser foot) stepping motor is stuck. If it is stuck, remove the mechanical fault of the machine head first. If normal, check whether the thread trimming (presser foot) stepping motor interface is loose Move or fall off, and restart the system after restoring it to normal. 2. If it still does not work properly, please replace the control box or thread trimming (presser foot)

		stepping motor and notify after-sales service.
E94	Thread trimming (presser foot) stepper motor encoder setting Bit signal abnormality	1. Turn off the system power and observe whether the thread trimming (presser foot) stepping motor is stuck. If it is stuck, remove the mechanical fault of the machine head first. If it is normal, check whether the thread trimming (presser foot) stepper motor encoder interface is loose or falling off, and whether there is oil on the encoder code plate. If yes, please clean it up, and restart the system after restoring it to normal. 2. If it still does not work properly, please replace the control box or thread trimming (presser foot) stepping motor and notify after-sales service.
E95	Thread trimming (presser foot) stepper motor encoder signal No. is abnormal	1. Turn off the system power supply, check whether the interface of the thread trimming (presser foot) stepping motor encoder is loose or falling off, and restart the system after restoring it to normal. 2. If it still does not work properly, please replace the control box or thread trimming (presser foot) stepping motor and notify after-sales service.
E96	Thread trimming (presser foot) stepping motor failed to start	1. Turn off the system power supply, check whether the power line interface and encoder interface of the thread trimming (presser foot) stepping motor are loose or loose, and restart the system after restoring them to normal. 2. If it still does not work properly, please replace the control box or thread trimming (presser foot) stepping motor and notify after-sales service.
E97	Thread trimming (presser foot) stepping motor blocked	1. Turn off the system power and observe whether the thread trimming (presser foot) stepping motor is stuck. If it is stuck, remove the mechanical fault of the machine head first. If it is normal, check whether the power line interface and encoder interface of the thread trimming (presser foot) stepping motor are loose or fall off, and restart the system after restoring them to normal. 2. If it still does not work properly, please replace the control box or thread trimming (presser foot) stepping motor and notify after-sales service.

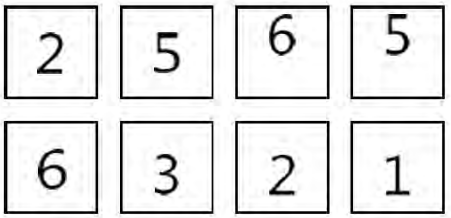
7. Wiring diagram of each port

7-1.4P Port Schematic Diagram



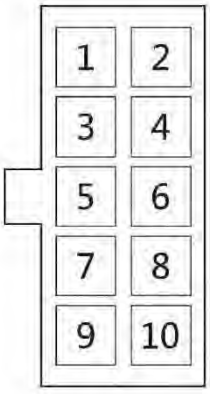
1. Presser foot height sensing: 1, 3 (DGND), 4 (S5V)

7-2.8P port schematic diagram

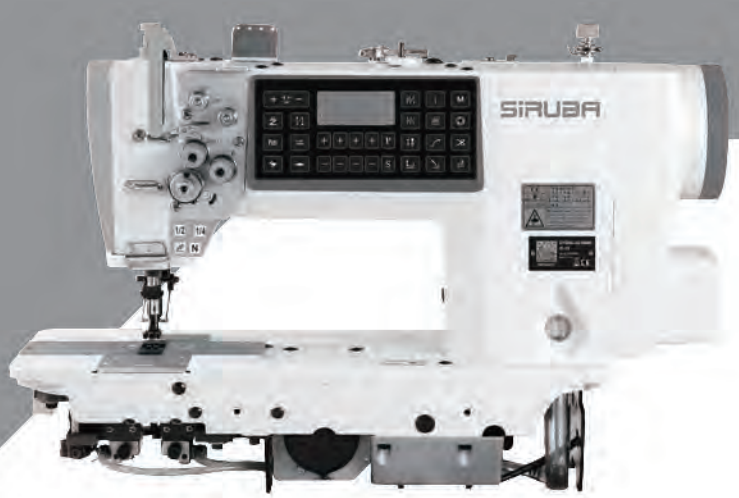


1. 5: Right separation electromagnet
2. 6: Left separation electromagnet
3. 7: Wire sweeping electromagnet
4. 8: Loosening electromagnet

7-3.10P port diagram



1. Ground wire (button blue wire)
2. Reserved input port (+5V)
3. Reserve input ports
4. Reserve input ports
5. Key L (button yellow line)
6. Key R (button red line)
7. Headlight + (red line)
8. Backstitch button (button brown thread)
9. Headlight - (Black line)
10. Tightly stitched keys (button black thread)



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