

# SIRUBA

電控參數說明書

ELECTRONIC CONTROL PARAMETER MANUAL



■ DT8600 SIMPLE TYPE

The background is a solid gray color. In the lower half, there are two large white geometric shapes. One is a trapezoid on the left, and the other is a trapezoid on the right, both pointing towards each other, creating a central white space.

# DT8600 系列控制系統說明書

## 安全指示

### Safety Instruction

- 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。  
Users are required to read the operation manual completely and carefully before installation or operation.
- 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。  
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) 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。  
All the instruction marked with sign  must be observed or executed; otherwise, bodily injuries might occur.
- 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。  
For perfect operation and safety, it is prohibited that using extension cable with multi-outlet for power connection.
- 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。  
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) 請不要在日光直接照射的場所、室外及室溫 45°C 以上或 0°C 以下的場所操作。  
Don't operate in direct sun light, outdoors area and where the room temperature is over 45°C or below 0°C.
- 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。  
Please avoid operating near the heater at dew area or at the humidity below 10% or above 90%
- 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。  
Don't operate in area with heavy dust, corrosive substance or volatile gas.
- 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。  
Avoid power cord being applied by heavy objects or excessive force, or over bend.
- 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。  
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) 所有可轉動的部分，必須以所提供的零件加以防範露出。  
All the moving portions must be prevented to be exposed by the parts provided.
- 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。  
Turning on the machine in the first time, operate the sewing machine at low speed and check the correct rotation direction.
- 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。

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) 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。

Repairs and high level maintenance work should only be carried out by electronic technicians with appropriate training.

- 15) 使用本產品請遠離高頻電磁波和電波發射器等，以免所產生的電磁波干擾伺服驅動裝置而發生誤動作。

All the spare parts for repair must be provided or approved by the manufacturer.

- 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）。

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 按鍵顯示及操作說明

### Button displays and operating instructions

名稱 Name	按鍵 key	注明 Indicate
功能鍵 Function key		進入或退出使用者參數設定介面。 Enter or exit the user parameter setting interface.
確認鍵 Confirmation key		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。 View and save the content of the selected parameter number: After selecting the parameter number, press this key to view and modify the operation. After modifying the parameter value, press this key to exit and save the parameter.
上鍵/停針位 鍵 Up key / Needle stopping position		1、參數選擇區內參數項遞增。 2、參數內容區內設定數值遞增。 3、若長按, 切換縫製後機針的停止位置(上停針位/下停針位)。 1. The parameter items in the parameter selection area are increased. 2. The set value in the parameter content area is increased. 3. If long-press, switch needle stopping position after sewing (upper stopping position/lower stopping position).
下鍵/慢速起 縫鍵 Down key / Slow start function		1、參數選擇區內參數項遞減。 2、參數內容區內設定數值遞減。 3、若長按, 設定使用或取消慢速起縫功能。 1. The parameter items in the parameter selection area are decreased. 2. The set value in the parameter content area is decreased. 3. If long-press, set to be used or canceled slow start function.

## 2 協助工具

### Auxiliary function

#### 2.1 電機電角度校正

##### Motor electrical angle correction

進入參數, 將參數調至 P92 項, 點擊 S 鍵進入參數項, 在參數介面點擊停針位元鍵, 然後電機會自動運轉並計算電機電角度, 等電機停下來後, 參數值將自動變化, 點擊 S 鍵保存即可。

Enter the parameter, adjust the parameter to P92 item, click the S key to enter the parameter item, click the needle stop position selection key in the parameter interface, and then the motor will automatically run and calculate the motor electrical angle. After the motor stops, the parameter value will automatically change, click S key to save.

#### 2.2 停針位快捷設置

##### Quick setting of needle stop position

在關機狀態下, 按住 S 鍵開機, 進入 P72 項, 手動轉動手輪至所需的上停針位元, 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, 同時自動計算下停針位。

In the shutdown state, press and hold the S key to turn on, enter P72, manually turn the handwheel to the desired upper position, the displayed value will change with the change of the handwheel position, press the S key to save the current position (value) as upper position will automatically calculate down position at the same time.

#### 2.3 恢復出廠設置

##### Restoring Factory Settings

在關機狀態下, 同時按住上鍵和下鍵開機, 再按 S 鍵確認即可恢復。

In the shutdown state, press and hold the upper and down keys at the same time to turn on the power, and then press the S key to confirm to restore.

### 3 參數表

#### User parameter

參數項 No.	中文說明 Items	範圍 Range	初始值 Default	內容值名稱說明與備註 Description
P01	最高轉速 (rpm) Maximum sewing speed	100-2200	2200	車縫時的最高轉速設定。 Maximum speed of machine sewing
P02	加速曲線調整 (%) Set accelerated curve	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。 Set the acceleration slope The greater the slope value, the steeper the speed; the smaller the slope value, the slower the speed
P03	針停定位選擇 Needle UP/ DOWN	0-1	1	0：上停針 1：下停針 0: Upper needle stop position 1: Lower needle stop position
P07	慢速起縫速度 (rpm) Slow start speed	200-1500	400	
P08	慢速起縫針數 Stitch numbers for slow start	0-99	2	
P14	慢速起縫功能設定 Slow start function selection	0-1	0	0：關閉 1：開啟 0: OFF 1: ON
P15	補針方式 Darning stitch mode	0-4	2	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 0: half stitch; 1: one stitch; 2: continuous half stitch; 3: continuous one stitch; 4: continuous one stitch, quick stop.
P21	踏板前踩運行位置 The position of the pedal for accelerating	30-1000	520	
P22	踏板回中位置 The position of the pedal for the stop	30-1000	418	
P24	踏板剪線位置 The position of the pedal for thread trimming	30-1000	130	
P29	切線停車力度 The strength of thread trimming stop	1-45	23	
P42-N01	電控版本號 The control system version number			
P42-N02	選針盒版本號 The panel version number			
P42-N03	轉速 Speed			
P42-N04	腳踏板 AD 值			

參數項 No.	中文說明 Items	範圍 Range	初始值 Default	內容值名稱說明與備註 Description
	The pedal AD			
P42-N05	機械角度（上定位） The mechanical angle(up per position)			
P42-N06	機械角度（下定位） The mechanical angle(lower position)			
P42-N07	母線電壓 AD 值 Bus bar voltage AD			
P43	馬達轉動方向設定 Motor rotation direction setting	0-1	1	0：順時針方向 1：逆時針方向 0: clockwise 1: counter clock wise
P44	正常停車力度 Normal stopping strength	1-45	18	
P48	最低速度（定位速度） The minimum speed (positioning speed) ( rpm )	100-500	210	最低速度限制調整。 Minimum speed limit adjustment.
P56	開電後自動找上定位 Power on and positioning	0-2	0	0：始終不找上定位 1：始終找上定位 2：若電機已經處於上定位時不再找上定位 0: Always not to find the upper position 1: Always to find the upper position 2: If the motor is already in the upper position, no longer find the upper position
P58	上定位調整 Upper positioning adjustment	0-2399	40	上定位調整，數值減少時會提前停針，數值增加時會延遲停針。 Upper position adjustment, the needle will advance stop when the value decreased, the needle will delay stop when the value increased.
P59	下定位調整 Lower positioning adjustment	0-2399	650	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。 Lower positioning adjustment, the needle will advance stop when the value decreased, the needle will delay stop when the value increased.
P60	測試速度（rpm） Testing speed	100-2200	2200	設置測試速度。 Setting testing speed.
P61	A 項測試 Testing A	ON/OFF	OFF	持續運行測試模式。 Continuous running testing.
P62	B 項測試 Testing B	ON/OFF	OFF	全功能啟停測試模式。 Start and stop testing with all functions.
P63	C 項測試 Testing C	ON/OFF	OFF	無定位、無功能啟停測試模式。 Start and stop testing without all function.
P64	測試時測試執行時間 Test run time	1-250	30	
P65	測試時測試停止時間 Test stop time	1-250	10	
P66	機頭保護開關	0-1	1	0：不檢測 1：檢測零信號

參數項 No.	中文說明 Items	範圍 Range	初始值 Default	內容值名稱說明與備註 Description
	Machine protection switch selection			0: Disable 1: Testing zero signal
P69	主軸電機類型選擇 Main shaft motor model selection	0-50		
P70	機型選擇 Model selection		2	
P72	上定位快捷調整 Upper positioning quick adjustment	0-2399		調整上停針位元，顯示的數值會隨手輪位置變化而變化，按“S”鍵可保存當前位置（數值）為上停針位。 Adjust upper stopping position, the displayed value will change with the position of the handwheel, press "S" key to save the current position (value) as upper stopping position.
P73	下定位快捷調整 Lower positioning quick adjustment	0-2399		調整下停針位元，顯示的數值會隨手輪位置變化而變化，按“S”鍵可保存當前位置（數值）為下停針位。 Adjust lower stopping position, the displayed value will change with the position of the handwheel, press "S" key to save the current position (value) as lower stopping position.
P86	上下定位距離 Upper and lower positioning distance	0-2399	1017	
P89	交流過壓值設定 AC overvoltage setting	500-1023	880	
P92	電機電角度校正 Electromechanical angle correction		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）。 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).

注：參數初始值僅供參考，實際參數值以實物為準。

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

#### 4 錯誤代碼表

##### Error code list

錯誤碼 Error Code	內容 Problem description	對策 Solutions
E01	電壓高 High voltage	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。 1. Whether the grid voltage is higher than AC260V.

		<p>2. If it is self-generated power supply, please reduce the generator power.</p> <p>3. If it still does not work normally, please replace the control box and notify the after-sales service.</p>
E02	<p>電壓低 Low voltage</p>	<p>1、是否插入低電壓。</p> <p>2、恢復出廠設置。</p> <p>3、若仍不能正常工作，請更換控制箱並通知售後服務。</p> <p>1. Whether to connect to low voltage.</p> <p>2. Reset.</p> <p>3. If it still does not work normally, please replace the control box and notify the after-sales service.</p>
E03	<p>主 CPU 與面板 CPU 通信異常 Abnormal communication between main CPU and panel CPU</p>	<p>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。</p> <p>2、關閉系統電源，拆下電控箱只插電源線通電，是否報警 E03，如還是報警 E03，更換控制箱並通知售後服務。</p> <p>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.</p> <p>2. Turn off the system power, remove the control box and only plug in the power cord to power on, whether alarm E03, if it still alarms E03, replace the control box and notify the after-sales service.</p>
E05	<p>控速器信號異常 Pedal signal abnormal</p>	<p>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。</p> <p>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。</p> <p>Turn off the system power, check whether the speed controller connector is loose or fall off, restore it to normal and restart the system.</p>
E07	<p>主軸電機堵轉 Main shaft motor locked-rotor</p>	<p>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。</p> <p>2、關閉電源，檢查電機電源介面是否鬆動，插好後重啟。</p> <p>3、檢查上停針位是否正確，如果不正確請調整上定位位置。</p> <p>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。</p> <p>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;</p> <p>2. Turn off the power, check whether the motor power connector is loose, plug it in and restart it.</p> <p>3. Check whether the upper needle stop position is correct, if not, please adjust the upper positioning position.</p> <p>4. If it still does not work normally, please replace the control box or spindle motor and notify the after-sales service.</p>
E09 E11	<p>主軸電機編碼器定位信號異常 When power on and positioning, the positioning signal of main shaft motor encoder is abnormal</p>	<p>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。</p> <p>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。</p> <p>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。</p> <p>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.</p>

		<p>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.</p> <p>3. If it still does not work normally, please replace the control box or main shaft motor and notify the after-sales service.</p>
E14	<p>主軸電機編碼器信號異常 Main shaft motor encoder signal is abnormal</p>	<p>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。</p> <p>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）。</p> <p>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。</p> <p>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。</p> <p>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.</p> <p>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).</p> <p>3. Check whether there is oil on the encoder code plate, if there is, please clean it up, and restart the system after recovery.</p> <p>4. If it still does not work normally, please replace the control box or main shaft motor and notify the after-sales service.</p>
E15	<p>主軸電機驅動過流 Main shaft motor drive overcurrent</p>	<p>1、請檢查電機電源線有沒有接觸不良。</p> <p>2、請檢查電機電源線有沒有被壓破。</p> <p>3、請更換控制箱或主軸電機並通知售後服務。</p> <p>1. Please check whether the motor power cord has bad contact;</p> <p>2. Please check whether the motor power cord is crushed.</p> <p>3. Please replace the control box or main shaft motor and notify the after-sales service.</p>
E17	<p>機頭翻倒 Machine overturned</p>	<p>1、關閉系統電源，檢查機頭是否翻倒。</p> <p>2、檢查機頭保護開關檢測設置是否正確。</p> <p>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。</p> <p>1. Turn off the system power and check if the machine is overturned.</p> <p>2. Check whether the machine protection switch detection setting is correct.</p> <p>3. If it still does not work normally, please replace the control box or panel and notify the after-sales service.</p>
E20	<p>主軸電機啟動失敗 Main shaft motor failed to start</p>	<p>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。</p> <p>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。</p> <p>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。</p> <p>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.</p> <p>2. Check whether the motor zero point correction setting is correct, reset the motor zero point correction.</p> <p>3. If it still does not work normally, please replace the control box or main shaft motor and notify the after-sales service.</p>
E42	<p>EEPROM 讀寫故障 EEPROM read and write</p>	<p>1、恢復出廠設置。</p> <p>2、若仍不能正常工作，請更換控制箱並通知售後服務。</p>

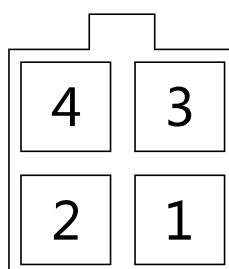
	failure	<ol style="list-style-type: none"> <li>1. Restore factory settings.</li> <li>2. If it still does not work normally, please replace the control box and notify the after-sales service.</li> </ol>
E43	主晶片陷阱重定 Main chip trap reset	<ol style="list-style-type: none"> <li>1、恢復出廠設置。</li> <li>2、若仍不能正常工作，請更換控制箱並通知售後服務。</li> </ol> <ol style="list-style-type: none"> <li>1. Restore factory settings.</li> <li>2. If it still does not work normally, please replace the control box and notify the after-sales service.</li> </ol>
E44	主晶片欠壓重定 Main chip undervoltage reset	<ol style="list-style-type: none"> <li>1、恢復出廠設置。</li> <li>2、若仍不能正常工作，請更換控制箱並通知售後服務。</li> </ol> <ol style="list-style-type: none"> <li>1. Restore factory settings.</li> <li>2. If it still does not work normally, please replace the control box and notify the after-sales service.</li> </ol>
E45	主晶片看門狗報警 Main chip watchdog alarm	<ol style="list-style-type: none"> <li>1、恢復出廠設置。</li> <li>2、若仍不能正常工作，請更換控制箱並通知售後服務。</li> </ol> <ol style="list-style-type: none"> <li>1. Restore factory settings.</li> <li>2. If it still does not work normally, please replace the control box and notify the after-sales service.</li> </ol>

## 5 埠示意圖

### Port diagram

#### 4P 埠示意圖

#### 4P function port description

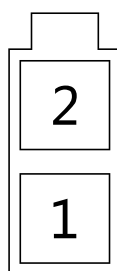


1. 控速器：1（信號）、3（DGND）、4（+5V）

1. Speed controller: 1 (signal), 3 (DGND), 4 (+5V)

#### 2P（黃色）埠示意圖

#### 2P (yellow) function port description

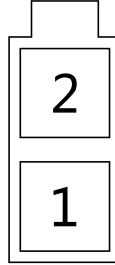


1. 衣車燈：1（DGND）、2（+5V）

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

## 2P 埠示意圖

### 2P function port description



1. 補針：1（信號）、2（DGND）

1. Darning stitch: 1(signal), 2 (DGND)



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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  
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