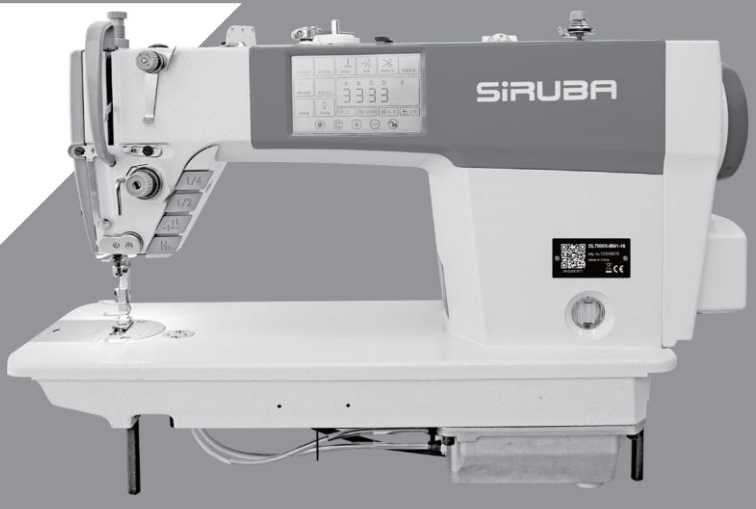
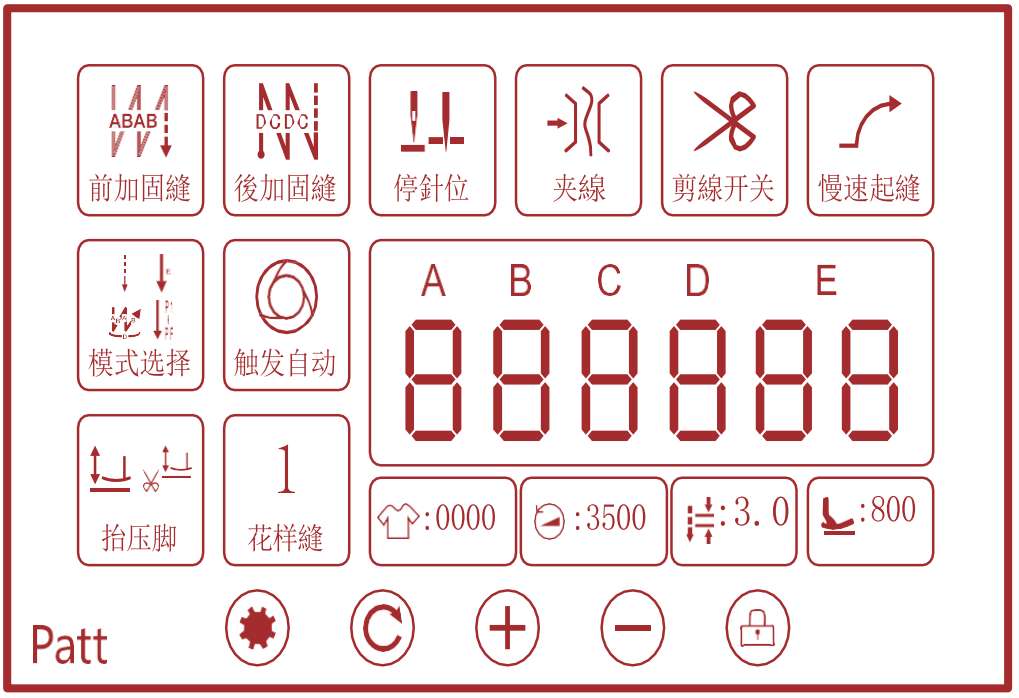
SIRUBA

ELECTRONIC CONTROL PARAMETER MANUAL

DL7500S




ABAB
前加固縫
DCDC
後加固縫
停針位
夾線
剪線开关
慢速起縫
模式选择
触发自动
A B C D E
抬压脚
1
花样縫
:0000
:3500
:3.0
:800
Patt

⚠Safety Instruction

1. Users are required to read the operation manual completely and carefully before installation or operation.
2. All the instruction marked with sign ⚠ must be observed or executed; otherwise, bodily injuries might occur.
3. The product should be installed and pre-operated by well-trained persons.
4. For perfect operation and safety, it is prohibited that using extension cable with multi-outlet for power connection.
5. When connecting power supply cords to power sources, it is necessary to make sure that the power voltage matches the rated voltage ±20% indicated on the motor's name plate.
6. Don′ t operate in direct sun light， outdoors area and where the room temperature is over 45°C or below 5°C.
7. Please avoid operating near the heater at dew area or at the humidity below 30% or above 95%.
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：
    a) Connecting or disconnecting any connectors on the control box or motor.
    b) Threading needle.
    c) Raising the machine head.
    d) Repairing or doing any mechanical adjustment.
    e) 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.

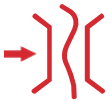
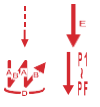
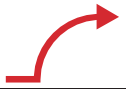
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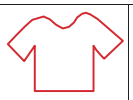
Any trouble found within warranty period under normal operation, it will be repaired free of charge. However, maintenance cost will be charged in the following cases even if within warranty period:

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

Note: 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

Name	Key	Indicate
Function parameter edit		Press this key can enter or exit the user parameter setting interface.
Multi-section Sewing		Set the icon of continuous backstitch for multi-section stitch setting, and switch multi-section stitch setting (only works in multi-section stitch mode).
Locking screen function		If click, set used or cancelled locking screen function.
Speed increase		Increase the sewing speed.
Speed decrease		Decrease the sewing speed.
Pattern sewing key		Press this key can set used or cancelled pattern sewing function. When this mode is turned on, the current sewing mode will be turned off by default.
Start back-tacking sewing		Executions starting back seam B segment or execution starting back seam (A, B segment) 1 time. Execution starting back seam (A, B segment) 2 times.
End back-tacking sewing		Execution terminates back seam C segment or execution terminates back seam (C, D segment) 1time. Execution terminates back seam (C, D segment) 2 times.
Thread trimming		Set used or cancelled thread trimming function.
Clamp function setting		Set used or cancelled clamp function.
Mode shift key		If click, shift to free sewing, constant stitch sewing, continuous back seam shortcuts and multi-section set needle shortcuts.
Slow launch setting		Press this key can set used or cancelled slow launch function.
Needle stop position selection		Short-press to shift halfway stop needle UP/Down position.
Auto function		(valid for constant stitch sewing and multi-section set needle shortcuts)Press this key can set used or cancelled automatic function.
Automatic presser foot lifting setting		Press this key it can execute the cycle shift of automatic presser foot lifting after pause and automatic presser foot lifting after trimming.

Count display key		Displays the current count value.
Speed display key		Displays the current sewing mode speed.
Stitches length setting		Display the current stitch length value. Click to enter stitch length setting.
Press foot height key		Display the current presser height. Click to enter the presser height setting.

2 Simulation Parameters

If the setting key is pressed in other screens, the setting interface will be displayed.

Click the corresponding column to enter the corresponding setting interface.

No.	Setting
1	Start Back-Tacking Setting
2	Sewing Mode Setting
3	End Back-Tacking Setting
4	Soft Start Setting
5	Output Function Setting
6	Main Shaft Motor Relative Setting
7	Pedal Relative Setting
8	Counter Setting
9	Manual Switch Function Setting
10	Safety Protection Setting
11	Other Setting
12	Interface Display
13	Auxiliary Function
14	About System

2.1 Start Back-Tacking Setting

No.	Items	Range	Default	Description
1001	Start Back-Tacking Speed	200-3200	1600	
1002	Start Back-Tacking Mode Selection	OFF/ON	ON	OFF: Pedal- control can stop and start. ON: One shot to pedal, it can automatic execute back-tacking action.
1003	Mode Selection at the end of Start Back-Tacking	OFF/ON	ON	OFF: At the end of Start Back-Tacking, machine stops. ON: At the end of Start Back-Tacking, machine continues sewing if pedal pressed or START signal on (standing operation)

2.2 Sewing Mode Setting

No.	Items	Range	Default	Description
2001	Free Sewing Speed	100-5000	3500	
2002	Automatic Constant-Stitch	200-4000	3500	Constant-Stitch sewing speed adjustment when one shot

	Sewing Speed			signal is active.
2003	Bar-Tacking Speed	200-4000	2000	
2004	Back-Tacking Stitch Compensation	0-200	167	
2005	Mode Selection for Bar-Tacking	0-1	1	0: Pedal- control can stop and start. 1: One shot to pedal, it can automatic execute bar-tacking action.

2.3 End Back-Tacking Setting

No.	Items	Range	Default	Description
3001	End Back-Tacking Speed	200-3200	2000	

2.4 Soft Start Setting

No.	Items	Range	Default	Description
4001	Soft Start	ON/OFF	OFF	
4002	Soft Start Speed	200-1500	400	
4003	Stitch Numbers for Soft Start	1-99	2	

2.5 Output Function Setting

No.	Items	Range	Default	Description
5001	Trimming Function Setting			
5002	Clamp/Wiper Function Setting			
5003	Presser Foot Function Setting			
5004	Tension Release Device Function Setting			

2.5.1 Trimming Function Setting

No.	Items	Range	Default	Description
5101	Trimming Output Function Setting	ON/OFF	ON	
5102	Trimming Step Return Speed	20-400	100	
5103	Trimming First Section Speed	20-400	200	
5104	Trimming Second Section Speed	20-400	100	
5105	Trimming Action Time	10-990	200	
5106	The Angle of Trimming First Infeed	0-1439	935	
5107	The Angle of Trimming Second Infeed	0-1439	1435	
5108	First Trimming Distance	0-200	100	
5109	Second Trimming Distance	0-200	145	
5110	Trimming Step Return Time	10-990	60	

2.5.2 Clamp/Wiper Function Setting

No.	Items	Range	Default	Description
5201	Clamp Output Function	0-11	3	0: OFF

	Setting			1: Turn into wiper function 2-11: Thread clamp action and the pressure gradually increased
5202	Clamp Start Angle	10-359	100	
5203	Clamp End Angle	10-359	270	
5204	Wiper / Sweep Thread Action Time	10-990	380	Wiper / Sweep Thread Action Time

2.5.3 Presser Foot Function Setting

No.	Items	Range	Default	Description
5301	Presser Foot Lay Down Time	10-990	150	
5302	Presser Foot Lift Highness Compensation When Pedal Return to Intermediate Step at Sewing Stop	0-160	80	The 80 as 0 compensation, the large value as positive compensation, and the presser foot lift will be raise. The small value as negative compensation, the presser foot lift will be decline
5303	The Highest of Presser Foot Lift Highness	0-150	150	
5304	Presser Foot Speed	20-400	200	
5305	Presser Foot Pressure	0-1	1	0: Loosen the line when lifting the foot 1: No loosen the line when lifting the foot

2.5.4 Tension Release Device Function Setting

No.	Items	Range	Default	Description
5401	Thread Tension Release Start Angel	1-359	30	
5402	Thread Tension Release End Angel	1-359	180	
5403	Thread Tension Release Force Setting	0-80	30	The larger the value, the greater the action force

2.6 Main Shaft Motor Setting

No.	Items	Range	Default	Description
6001	Trimming Process Main Shaft Motor Speed	100-500	300	
6002	Reverse Angle Function Selection after Trimming	ON/OFF	OFF	
6003	Adjustment of Reverse Angles after Trimming	40-200	160	
6004	Needles Goes Up Automatically as Power Turned On	0-1	0	0: No Function. 1: Power turned on, needle goes up position automatically
6005	Up Position Adjustment	0-1439	230	
6006	Down Position Adjustment	0-1439	930	
6007	Low (Positioning) Speed	100-500	210	Setting Positioning Speed
6008	Stopping Strength as Half-way	1-45	16	
6009	Stopping Strength after Trimming	10-50	20	
6010	Manual Back-Tacking Limit	0-3200	0	

6011	Upper Needle Position Adjustment	0-40	40	
6012	Lower Needle Position Adjustment	0-750	750	

2.7 Presser Foot Setting

No.	Items	Range	Default	Description
7001	The Constant- Stitch Whether Can Execute End Back-Tacking Sewing Function Selection	ON/OFF	ON	ON: After finished the last seam of Stitch-Correction, it can automatic execute end back-tacking action. OFF: After finished the last seam of Stitch-Correction, it can't automatic execute end back-tacking function, it must step or full heeling action again then can execute end back-tacking or stitch-correction function.
7002	Speed Curve Adjustment （%）	10-100	80	The speed controller climbing slope setting. The large of slope value = the fast of the speed. The small of slope value = the slow of the speed.
7003	Presser Foot UP / Down at Intermediate Stop When Pedal Return to Half Step	0-1	0	0: Presser foot keeps down 1: Presser foot goes up
7004	Presser Foot UP / Down after Trimming When Pedal Return to Half Step	0-1	0	0: Presser foot keeps down 1: Presser foot goes up
7005	Pedal to Half-Heeling Position, Presser Foot Position Selection	0-1	1	0: Presser foot keeps down 1: Presser foot goes up
7006	The Voltage of Forward Step Pedal Point	30-1000	520	
7007	The Voltage of Intermediate Step Pedal Point	30-1000	420	
7008	The Voltage of Half Heeling Pedal Point	30-1000	270	
7009	The Voltage of Heeling Pedal Point	30-1000	130	
7010	Delay Time of Half Heeling Pedal	10-900	200	

2.8 Counter Setting

No.	Items	Range	Default	Description
8001	Counter Selection	0-2	1	0: OFF 1：Increment sewing counter (1 time for each trimming, add 1 to the count, the current value is the same as the set value, the count screen is displayed.) 2: Decrement sewing counter (Once for each trimming, count minus 1, screen is displayed after the current value becomes 0.）
8002	Counter Current Value/ Setting Value	0-9999	0/0	The present value is the current actual value; The set value is the reference value.
8003	Sewing Counter Trimming Time	0-50	1	If you choose 1, count the number of pieces per cut. If you choose 2, count it by cutting it twice, and so on.

2.9 Manual Switch Function Setting

No.	Items	Range	Default	Description
9001	Setting Function of Manual Switch A	0-3	2	0: Half stitch 1: One stitch

				2. Continuous correct half stitch 3. Continuous correct one stitch
9002	Setting Function of Manual Switch B	0-1	0	0: It will back tacking action when machine is stopped or running 1: It is back tacking when machine is running, and it will active stitch-correction action when machine is stopped

2.10 Safety Protection Setting

No.	Items	Range	Default	Description
10001	Machine Protection Switch Testing	0-2	1	0: Disable 1: Testing positive signal 2: Testing negative signal
10002	Oil Level Lower Protection Testing	0-1	1	0: Disable 1: Testing
10003	Setting High Voltage Protection Value	500-1023	880	After testing external input AC voltage to transfer DC voltage the value out of the setting value, the system will alarm E01 and stop running.
10004	Thread Slacking Electromagnet Protection Time	1-120	15	Working protection time of electromagnet (S)

2.11 Other Setting

No.	Items	Range	Default	Description
11001	Motor Zero-Point Correcting			
11002	Sensor by Knee Start AD Value	0-1023	600	
11003	Normal Stitches Length	0-75	30	
11004	Manual Tight Seam Stitch Length	0-81	52	
11005	Tacking Stitch Length Compensation	0-100	50	
11006	Back-Tacking Stitch Length Compensation	0-100	50	
11007	Forward Stitch Correction Stitch Length	0-81	76	

2.11.1 Motor Zero-Point Correction

No.	Items	Range	Default	Description
11011	Main Shaft Motor Zero-Point Correction	0-720	160	
11012	Back Tacking Motor Zero-Point Correction	0-100	50	When the stitch length is set to 0mm, fine tune the value to make the actual sewing stitch length 0mm.
11013	Press Foot Motor Zero-Point Correction	0-100	50	

2.12 Interface Display

No.	Items	Range	Default	Description
12001	Brightness	1-100	50	
12002	Main Interface Locked Automatically	0-900	30	0: Never 1-900: After main interface keep a certain times

				without operation, the main interface will locked automatically
12003	Language Setting	0-1	0	0: Chinese 1: English

2.13 Auxiliary Function

No.	Items	Range	Default	Description
13001	With Clamp Function without any Thrum Mode			
13002	Ending Tight Seam Mode			
13003	Layer Seam Mode			
13004	Pattern Seam Mode			
13005	Testing Mode			

2.13.1 With Clamp Function without any Thrum Mode

No.	Items	Range	Default	Description
13011	The Delay Time before Hook Thread with Clamp Function without any Thrum	0-990	100	
13012	The Hook Thread Action Time with Clamp Function without any Thrum	0-990	30	
13013	The Return Back Delay Time of Hook Thread with Clamp Function without any Thrum	0-990	30	
13014	Duty Cycle for Hook Thread with Clamp Function without any Thrum	1-100	30	
13015	The Suction Time for Clamp Function without any Thrum	0-5000	1000	
13016	Duty Cycle for Pull Thread with Clamp Function without any Thrum	0-100	0	

2.13.2 Ending Tight Seam Mode

No.	Items	Range	Default	Description
13021	Ending Tight Seam Stitches	0-60	10	
13022	Ending Tight Seam Speed	100-1000	500	
13023	Ending Tight Seam Direction	0/1	0	0: Counter Clockwise 1: Clockwise
13024	Ending Tight Seam Stitches Number	0-12	0	Close ending tight seam mode when the value is 0.

2.13.3 Layer Seam Mode

No.	Items	Range	Default	Description
13031	Layer Seam Mode Switch	ON/OFF	OFF	
13032	Layer Seam Mode Rotation Speed over Thick	200-3700	2000	
13033	Fabric Thickness Sensor AD Value	0-1023	530	Current fabric thickness sensor AD value is shown below
13034	Setting Layer Scale	1-100	10	
13035	Layer Seam Stitch Length Limit	0-200	100	

2.13.4 Pattern Seam Mode

No.	Items	Range	Default	Description
13041	Pattern Seam Mode Switch	ON/OFF	OFF	
13042	Pattern Seam Mode Selection	1-9	1	
13043	Pattern Seam Mode Setting			
13044	Pattern Seam Maximum Limit	100-3000	2500	

2.13.4.3 Setting of pattern seam style 1

No.	Stitch Numbers	Stitches Length（mm）	Repeat Times
1	1	4.8	5
2	1	2.0	1
3-10	0	0.0	1

Setting of pattern seam style 2

No.	Stitch Numbers	Stitches Length（mm）	Repeat Times
1	1	4.0	5
2	4	2.0	1
3-10	0	0.0	1

Setting of pattern seam style 3

No.	Stitch Numbers	Stitches Length（mm）	Repeat Times
1	1	3.5	5
2	4	1.5	1
3-10	0	0.0	1

2.13.5 Testing Mode

No.	Items	Range	Default	Description

13051	Testing Mode Switch	ON-OFF	OFF	As testing speed execute the cycle of Start– Sewing –Stop - Trimming
13052	Output Function Single Testing			
13053	Testing Mode Setting			

2.13.5.1 Autorun Test Mode

Period	Testing Speed (When the test speed is 0, the current cycle is not executed)	Running Time (S)	Stop Time (S)	Motor Running Direction	Periodic Time (No limit at time 0)
1	3000	20	20	1	0
2	0	0	0	1	0
3	0	0	0	1	0
4	0	0	0	1	0
5	0	0	0	1	0

2.13.5.2 Output Function Single Testing

Trimming	Presser Foot Step Reset
Press Foot	Step Motor 2

2.14 About System

No.	Items	Range	Default	Description
14001	Version Number			Display QIXING QR code, Control box version number, Control box minor version number, Display board version number, Resource version number
14002	State Information			
14003	Advanced Settings			Enter the "advanced password setting" interface and enter the password. If it is correct, enter the "advanced password setting" interface; if it is wrong, it will be invalid and "password error" will be displayed.
14004	Restore Factory Defaults			Cancel: Cancel Sure: Restore to original factory data

2.14.2 State Information

No.	Items	Range	Default	Description
14021	Motor Speed Display			Display the current motor speed
14022	Needle Position Angel Value			Display the current motor angle of the machine
14023	Pedal AD Value			Display the current pedal AD value
14024	Busbar Voltage AD Value			
14025	Oil Level Sensor AD Value			
14026	Knee Moving Position Sensor AD Value			

14027	Trimming Position Sensor AD Value			
14028	Presser Foot Lift Highness Sensor AD Value			
14029	Grating Signal			

2.14.3 Advanced Settings

No.	Items	Range	Default	Description
14031	Main Shaft Motor Related Advanced Settings			
14032	Back-Tacking Step Motor Related Senior Setting			
14033	Presser Foot Step Motor Related Senior Setting			
14034	Advanced Settings Password Modification			
14035	Main Shaft Motor Maximum Speed Limit	100-5000	4000	
14036	Stitch Length Limit	0-173	164	

2.14.3.1 Main Shaft Motor Related Advanced Settings

No.	Items	Range	Default	Description
140311	UP/DOWN Needle Position Distance Value	100-1400	720	On the up and down needle position shortcut setting interface, save the up needle position value.
140312	Main Shaft Motor Rotation Direct Setting	CCW/CW	CCW	CW: Clockwise CCW: Counter Clockwise (Lockstitch type rotation direction)
140313	Main Shaft Motor Maximum Current (A)	0-20	10	
140314	Main Shaft Motor Lockedrotor Current (A)	0-20	10	
140315	Main Shaft Motor Normal Current (A)	0-20	16	
140316	Main Shaft Motor Encoder Type Selection	0-1	0	0: without magnetic ring 1: with magnetic ring

2.14.3.2 Back-Tacking Step Motor Related Senior Setting

No.	Items	Range	Default	Description
140321	Back-Tacking Step Motor Steady Current	1-12	6	
140322	Back-Taking Step Motor Maximum Current	1-12	12	
140323	Back-Taking Step Motor Maximum Speed	20-600	550	

2.14.3.3 Presser Foot Step Motor Related Senior Setting

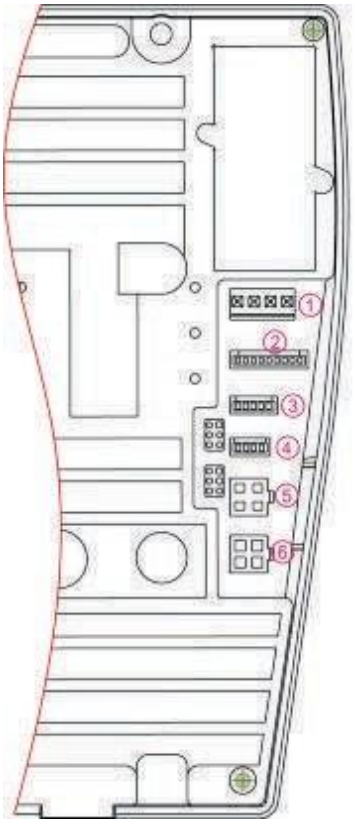
No.	Items	Range	Default	Description
140331	Presser Foot Step Motor Steady Current	1-12	8	
140332	Presser Foot Motor Maximum Current	1-12	8	

3 Error Code List

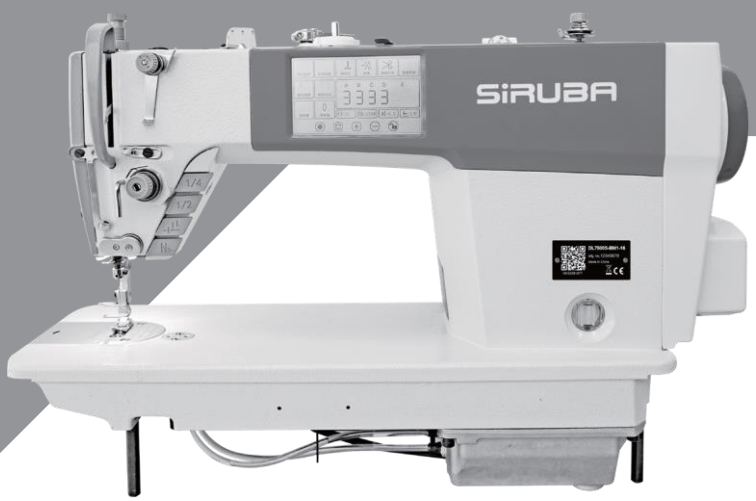
Error Code	Problem Description	Measure
E01	Over-voltage	Turn off the machine, check the power supply voltage. (Or whether exceed the rated voltage of use). If there are still errors, please replace the control box and call for customer service.
E02	Low-voltage	Turn off the machine, check the power supply voltage. (Or whether under the rated voltage of use). If there are still errors, please replace the control box and call for customer service.
E03	CPU communication error	Turn off the machine, please check if the operation panel in bad connection or is too loose. To get it right and turn on. If there are still errors, please replace the control box and call for customer service.
E05	Pedal connection error	Turn off the machine, please check if the pedal in bad connection or is too loose. To get it right and turn on. If there are still errors, please replace the control box and call for customer service.
E07	Motor locked-rotor error	Turn the machine handwheel, check if it is stuck. If it is stuck, you have to rule out the mechanical failure. If turn normal, check if the encoder and motor in bad connection or is too loose. If yes, please correct. If connection well, check if the power supply voltage is abnormal or sewing speed is too high. If yes, please adjust. If there are still errors, please replace the control box and call for customer service.
E08-0	Communication abnormal	Turn off the machine, check if motor is stuck. If it is stuck, you have to rule out the mechanical failure. If turn normal, please check if the motor in bad connection or is too loose. To get it right and turn on. If there are still errors, please replace the control box and call for customer service.
E08-2	Back-tacking step motor over current	
E08-4	Back-tacking step start can't find original point.	
E08-16	Trimming step motor over current	
E08-32	Trimming step motor can't find original point	
E09 E11	Positioning signal error	Turn off the machine, please check if the encoder in bad connection or is too loose. To get it right and turn on. If there are still errors, please replace the control box and call for customer service.
E10	Solenoid over-current	Turn off the machine, please check the related circuit is shorted or damaged.
E14	Encoder error	Turn off the machine, please check if the encoder in bad connection or is too loose. To get it right and turn on. If there are still errors, please

		replace the control box and call for customer service.
E15	Power supply module abnormal over-current	Turn off the machine, then turn on again. If there are still errors, please replace the control box and call for customer service.
E17	Machine protection switch is not in the correct position	Turn off the machine, check if the machine is turn over, or the mercury switch is shifted or damaged.
E20	Motor failed to start (Electrical angle error)	Turn off the machine, please check if the encoder and motor in bad connection or is too loose. To get it right and turn on. If there are still errors, please replace the control box and call for customer service.

4 Port Diagram



① Spindle motor power cord connector
② Spindle motor encoder wire interface
③ Backstitch line stepper motor encoder interfaces
④ Cut wire stepper motor encoder wire interface
⑤ Backstitch stepper motor power cord connector
⑥ Trimming stepper motor Power cord connector



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KAULIN MFG. CO., LTD.

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The specification and/or appearances of the equipment described in this instruction book & parts list are subject to change because of modification which will without previous notice.

DML-13P02.JAN.2024