# ▲ Safety Instruction

- 1. Users are required to read the operation manual completely and carefully before installation or operation.
- 2. This product must be installed or operated by properly trained personnel. All power must be turned off during installation, and remember not to operate with power.
- 3. All the instruction marked with sign  $\triangle$  must be observed or executed; otherwise, bodily injuries might occur.
- 4. For perfect operation and safety, it is prohibited that using extension cable with multi-outlet for power connection.
- 5. When connecting power supply cords to power sources, it is necessary to make sure that the power voltage matches the rated voltage  $\pm 20\%$  indicated on the motor's name plate.
- 6. Do not operate in direct sun light, outdoors area and where the room temperature is over  $45^{\circ}$ C or below 0°C.
- 7. Please avoid operating near the heater at dew area or at the humidity below 10% or above 90%.
- 8. Do not operate in area with heavy dust, corrosive substance or volatile gas.
- 9. Avoid power cord being applied by heavy objects or excessive force, or over bend.
- 10. The earth wire of power cord must be connected to the system ground of the production plant by proper size of conductions and terminals. This connection should be fixed permanently.
- 11. All the moving portions must be prevented to be exposed by the parts provided.
- 12. Turing on the machine in the first time, operate the sewing machine at low speed and check the correct rotation direction.
- 13. Turn off the power before the following operation:
  - 1. Connecting or disconnecting any connectors on the control box or motor.
  - 2. Threading needle.
  - 3. Raising the machine head.
  - 4. Repairing or doing any mechanical adjustment.
  - 5. Machines idling.
- 14. Repairs and high level maintenance work should only be carried out by electronic technicians with appropriate training.
- 15. All the spare parts for repair must be provided or approved by the manufacturer.
- 16. Don't use any objects or force to hit or ram the product.

#### **Guarantee Time**

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

#### Warranty Detail

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

1. Inappropriate use, including: wrong connecting high voltage, wrong application, disassemble, repair, modification by incompetent personnel, or operation without the precaution, or operation out of its specification range, or inserting other objects or liquids into the product.

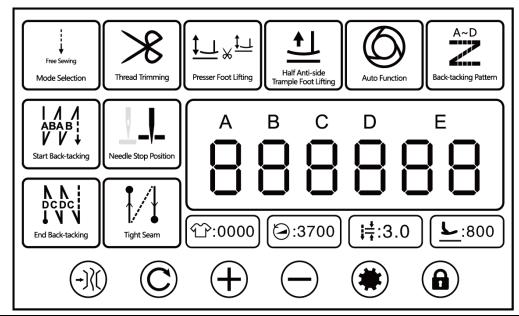
2. Damage by fire, earth quake, lighting, wind, flood, salt corrosive, moisture, abnormal power voltage and any other damage cause by the natural disaster or by the inappropriate environments.

3. Dropping after purchasing or damage in transportation by customer himself or by customer's shipping agency

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. Interface and operation instructions

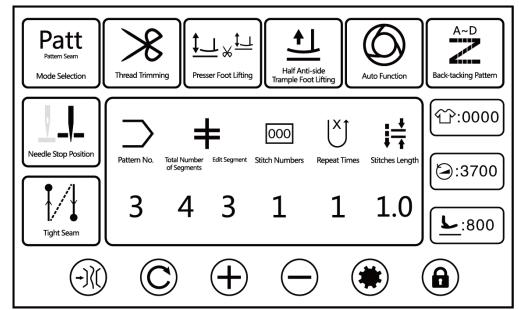
### 1.1 Main interface description



Name	Key	Indicate
Clamp function setting	$\overline{\mathbb{R}}$	If click, set used or cancelled clamp function.
Constant stitch sewing switching key	$\bigcirc$	In constant stitch sewing mode, if click, switch to stitch numbers and segments display interface.
Parameter increase	(+)	If click, it can increase parameters. If long-press, it can continuously increase parameters.
Parameter decrease	$\bigcirc$	If click, it can decrease parameters. If long-press, it can continuously decrease parameters.
Set key		If click, enter the parameter setting interface.
Lock screen key		If you click, switch the lock screen and unlock.
Mode selection	Free Sewing Mode Selection	If click, shift to free sewing, continuous back seam mode, constant stitch sewing and pattern seam mode.
Start back-tacking	ABAB V V V	If click, executions starting back seam B segment, execution starting back seam (A, B segment) 1 time or execution starting back seam (A, B segment) 2 times. If long-press, switch to back-tacking setting.
End back-tacking	End Back-tacking	If click, execution terminates back seam C segment, execution terminates back seam (C, D segment) 1 time or execution terminates back seam (C, D segment) 2 times. If long-press, switch to back-tacking setting.
Thread trimming	Thread Trimming	If click, set used or cancelled trimming function.

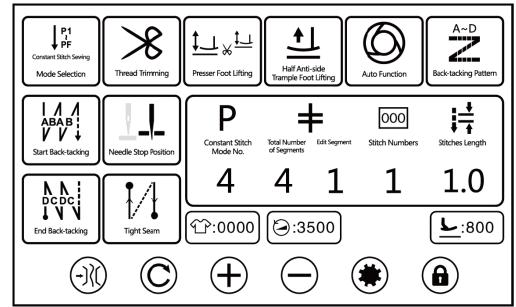
Needle stop position	Needle Stop Position	If click, switch the needle stop position after sewing (up position / down position).
Tight seam	Tight Seam	If click, switch between function OFF, starting tight seam function ON, ending tight seam function ON and full function in turn. If long-press, switch to tight seam function setting.
Presser foot lifting		If click, switch between automatic presser foot lifting after pause, automatic presser foot lifting after trimming, full function and function off in turn.
Half anti-side trample foot lifting	Half Anti-side Trample Foot Lifting	If click, set used or cancelled half anti-side trample foot lifting function.
Auto function	Auto Function	In constant stitch sewing mode, If click, set used or cancelled auto function.
Back-tacking pattern	A~D Back-tacking Pattern	If click, set used or cancelled back-tacking pattern function.
Slow launch setting	Slow Launch	If click, set used or cancelled slow launch function.
Advanced parameter settings	$\bigcirc$	If double click, enter the advanced parameter setting interface.
Trimming count display	£₽:0000	The trimming count value is displayed. If double click, the count is cleared.
Sewing speed display	3700	The sewing speed of the current mode is displayed. If click, select this data, and you can adjust the data by parameter increase and decrease keys.
Sewing stitch length display	[;;:3.0]	The stitch length of the current mode is displayed. If click, select this data, and you can adjust the data by parameter increase and decrease keys.
The highest presser foot height display	<u>L</u> :800	The highest presser foot height is displayed. If click, select this data, and you can adjust the data by parameter increase and decrease keys.

# 1.2 Pattern seam interface description



No.	Items	Range	Default	Description
1	Pattern No.	1-9		"3" stands for the number of the pattern. The figure represents the 3rd pattern.
2	Total Number Edit Segment of Segments	1-10		<ul> <li>"4" represents the total number of segments of the pattern. If you click, you can select the total number of segments.</li> <li>"3" represents the segment No. of the pattern. As shown in the figure, there are 4 patterns in the 3rd pattern. The figure is the data of the 3rd segment.</li> </ul>
3	000 Stitch Numbers	1-99		"1" represents the stitch numbers of the pattern. As shown in the figure, the number of stitches in the 3rd segment of the 3rd pattern is 1.
4	Repeat Times	1-9		"1" represents the repeat times of the pattern. As shown in the figure, the repeat times for the 3rd segment of the 3rd pattern is 1.
5	Stitches Length	0-5.0		"1.0" represents the stitches length of this pattern. As shown in the figure, the stitches length of the 3rd segment of the 3rd pattern is 1.0 mm.

### 1.3 Constant stitch sewing interface description



No.	Items	Range	Default	Description
1	Constant Stitch Mode No.	1-10		"4" represents the number of constant stitch sewing mode. As shown in the figure, it represents 4th constant stitch sewing mode.
2	Total Number Edit Segment of Segments	1-4		"4" represents the total number of segments of the constant stitch sewing mode. If clicked, the total number of segments can be selected. "1" represents the segment No. of constant stitch sewing. As shown in the figure, it represents the data of the 1st segment of the 4 segments.
3	000 Stitch Numbers	0-99		"1" represents the number of stitches in this segment. As shown in the figure, the number of stitches in the 1st segment of the 4 segments is 1.
4	Stitches Length	0-5.0		"1.0" represents the stitches length of the constant stitch sewing mode. As shown in the figure, the stitches length of the 1st segment of the 4 segments is 1.0mm.

### 1.4 Debug interface description

Long press on the main screen, the debugging interface will be displayed.

No.	Items	Range	Default	Description	Parameter
1	Main shaft motor zero-point correction				P92
2	Up position quick adjustment				P72
3	Back-tacking motor zero-point correction	-100~100	0		P129
4	Tacking stitch length compensation	-100~100	0		P74

5	Back-tacking stitch length compensation	-100~100	0	P75
6	Tacking stitch length compensation in high speed	-100~100	-2	P144
7	Back-tacking stitch length compensation in high speed	-100~100	-2	P145
8	Back-tacking stitch overall compensation	-20~20	0	P11
9	Large stitch length back-tacking stitch overall compensation	-20~20	0	P244

## 2. User parameter setting interface

Click in the interface of free sewing, pattern seam, or W sewing to enter user parameter setting interface.

|--|

No.	Setting
1	Main shaft motor setting
2	Tight seam function setting
3	Back-tacking setting
4	Counter setting
5	Soft start setting
6	Machine switch setting
7	Clamp & tension setting
8	Interface display
9	Layer seam setting
10	Clamp function without any thrum

No.	Items	Range	Default	Description	Parameter			
	2.1 Main shaft motor setting							
2101	Needles goes up automatically as power turned on	OFF/ON	OFF		P56			
		2.2 T	ight seam fur	action setting				
2201	Starting tight seam							
2202	Ending tight seam							
		2.	.2.1 Starting t	ight seam				
22101	000	0-12	2	When the value is 0, the starting tight seam mode is turned off.				
22102		0-5.0	0.5	Stitches length				
22103	$\bigcirc$	100-2000	1800	Speed				
22104	U	CW/CCW	CW	Direction				
		2	.2.2 Ending ti	ght seam				

22201	000	0-12	2	When the value is 0, the ending tight seam mode is turned off.	
22202		0-5.0	0.5	Stitches length	
22203		100-2000	1800	Speed	
22204	U	CW/CCW	CW	Direction	
		2.	.3 Back-tacki	ng setting	
2301	Start back-tacking speed	200-3200	2000		P04
2302	End back-tacking speed	200-3200	2000		P05
2303	Mode selection for bar-tacking	OFF/ON	ON		P08
2304	The constant-stitch whether can execute end back-tacking sewing function selection	OFF/ON	ON		P10
2305	Star back-tacking mode selection	OFF/ON	ON		P12
2306	Mode selection at the end of start back-tacking	OFF/ON	ON		P13
2307	Start back-tacking stitch compensation 1	0-200	160		P18
2308	Start back-tacking stitch compensation 2	0-200	160		P19
2309	End back-tacking stitch compensation 3	0-200	160		P25
2310	End back-tacking stitch compensation 4	0-200	160		P26
2311	Back-tacking stitch compensation 5	0-200	162		P32
2312	Back-tacking stitch compensation 6	0-200	162		P33
2313	Start back-tacking stitch compensation 11	0-200	160		P237
2314	Start back-tacking stitch compensation 12	0-200	160		P238
2315	End back-tacking stitch compensation 13	0-200	160		P239
2316	End back-tacking stitch compensation 14	0-200	160		P240
2317	Back-tacking stitch compensation 15	0-200	160		P241
2318	Back-tacking stitch compensation 16	0-200	160		P242
2319	Pattern sewing compensation 1	0-200	160		P235
2320	Pattern sewing compensation 2	0-200	160		P236
			2.4 Counter	setting	
2401	Counter selection	0-2	1	<ul> <li>0: Counter does not count</li> <li>1: Count up sewing counter (Each time the thread is cut, the count is increased by 1; the current value and the set value are the same, and the count screen is displayed.)</li> <li>2: Count-down sewing counter (1 counts each time the thread is trimmed; the count screen is displayed after the current value becomes 0)</li> </ul>	

2402	Counter current value /setting value	0-9999	0/9999	The current value is the current actual value; the setting value is a reference value	
2403	Sewing counter trimming time	0-50	1		
			2.5 Soft star	t setting	
2501	Soft start switch	ON/OFF	OFF		P14
2502	Stitch numbers for soft start	1-15	2		P08
2503	Soft start first stitch speed	200-1500	400		P90
2504	Soft start second stitch speed	200-1500	1000		P91
2505	Soft start speed after second stitch	200-1500	1500		P07
		2.6	6 Machine sw	itch setting	
2601	Manual switch A setting	0-6	5	<ul> <li>0: OFF</li> <li>1: Half stitch</li> <li>2: One stitch</li> <li>3: Continuous half stitch</li> <li>4: Continuous one stitch</li> <li>5: Back-tacking when machine stop or pause</li> <li>6: Tight seam function</li> </ul>	P15
2602	Manual switch B setting	0-6	3	<ul> <li>0: OFF</li> <li>1: Half stitch</li> <li>2: One stitch</li> <li>3: Continuous half stitch</li> <li>4: Continuous one stitch</li> <li>5: Back-tacking when machine stop or pause</li> <li>6: Tight seam function</li> </ul>	P174
2603	Manual switch C setting	0-6	0	<ul> <li>0: OFF</li> <li>1: Half stitch</li> <li>2: One stitch</li> <li>3: Continuous half stitch</li> <li>4: Continuous one stitch</li> <li>5: Back-tacking when machine stop or pause</li> <li>6: Tight seam function</li> </ul>	P175
2604	Manual switch D setting	0-6	0	<ul> <li>0: OFF</li> <li>1: Half stitch</li> <li>2: One stitch</li> <li>3: Continuous half stitch</li> <li>4: Continuous one stitch</li> <li>5: Back-tacking when machine stop or pause</li> <li>6: Tight seam function</li> </ul>	P176
2605	Manual back-tacking function selection under pattern sewing	0-1	1	<ul><li>0: If click, it will clear the current number of pattern stitches and restart. It is used for corner sewing to avoid protruding one stitch.</li><li>1: If you press it for a long time, you can sew the pattern backwards.</li></ul>	P118

		2.7 0	Clamping & te	ension setting			
2701	Tension strength setting	1-80	30		P103		
2702	With or without tension while foot lifting action	ON/OFF	OFF		P35		
2703	Wiping / clamping strength setting	0-11	8	<ul> <li>0: OFF</li> <li>1: Wiping function</li> <li>2~11: Clamping function, the higher the value, the stronger the action.</li> </ul>	P37		
2704	Tension function switch	ON/OFF	ON		P36		
2705	The foot lift height of thread tension release start action when knee-control foot lift	0-300	75		P30		
2706	Thread tension release function switch when knee-control foot lift	0-1	0		P31		
			2.8 Interface	display			
2801	Brightness	5-100	80	The larger the value, the higher the brightness.			
2802	Main interface locked automatically	0-900	60				
2803	Restore factory defaults						
2804	Language	Chinese / English	Chinese				
2805	Brightness of Logo light	0-3	0				
		2.	9 Layer sea	m setting			
2901	Layer seam mode switch	ON/OFF	OFF		P119		
	2.10 Clamp function without any thrum						
21001	Clamp function without any thrum switch	ON/OFF	OFF		P111		

## 3. Advanced parameter setting interface

) in the interface of free sewing, pattern seam, or W sewing to enter the advanced parameter Double-click (

setting interface. The parameter setting interface catalog is as follows.

No.	Setting
1	Trimming function setting
2	Clamp function setting
3	Foot lifting setting
4	Tension setting
5	Pedal setting
6	Safety protection setting
7	Stitch length setting of stepping back-tacking
8	Testing mode
9	State information
10	Main shaft motor setting

11	amp function without any thrum				
12	ayer seam setting				
13	ther settings				
14	Speed limit setting of main shaft motor start sewing				

No.	Items	Range	Default	Description	Parameter
		3.1	Frimming fun	ction setting	
3101	Trimming step return speed	20-400	150		P140
3102	Trimming first section speed	20-400	300		P142
3103	Trimming second section speed	20-400	250		P141
3104	Trimming action time	10-990	200		P55
3105	The angle of trimming first infeed	0-359	40		P80
3106	The angle of trimming second infeed	0-359	175		P82
3107	First trimming distance	0-200	90		P137
3108	Second trimming distance	0-200	125		P134
3109	Trimming step return time	10-990	100		P110
3110	Main shaft motor speed when trimming	100-500	300		P49
3111	The stopping angle of trimming first infeed	100-250	130		P81
		3.2	2 Clamp funct	tion setting	
3201	Clamp start angle	10-359	100		P78
3202	Clamp end angle	10-359	270		P79
3203	Wiper thread action time	10-990	220		P55
3204	The delay time before wiper thread	5-990	5		P109
		3	3.3 Presser fo	ot setting	
3301	Presser foot lay down time	10-990	120		P52
3302	Presser foot lift highness compensation when pedal return to intermediate step at sewing stop	0-160	80	Set 80 as 0 compensation, go to the major adjustment for positive compensation, the height of the presser foot will increase, go to the minor adjustment for the negative compensation, the height of the presser foot will decrease.	P125
3303	The highest of presser foot lift highness	0-300	105		P136
3304	Presser foot speed	20-400	150		P146
3305	Zero correction of foot lifting motor	-100~100	0		P130
3306	Presser foot step motor steady current	10-100	20		P150
3307	Presser foot motor maximum current	10-100	55		P152
3308	Electronic knee-control device the lowest presser	0-200	20		P135

	foot lift height				
3309	Electronic knee-control device the highest presser foot lift height	0-200	130		P126
3310	The highest of presser foot lift highness limit	0-300	150		P172
3311	Kneeling device starting AD value	0-1023	400		P122
3312	Rotation direction of the presser foot motor	0-1	0		P147
3313	Knee-control function selection	0-2	1	<ul><li>0: OFF</li><li>1: Valid when the main shaft motor stops</li><li>2: Valid when the main shaft motor runs and stops</li></ul>	
3314	The highest presser foot lift height of electric knee-control in sewing	0-300	100		
			3.4 Tension	setting	
3401	Tension starting angle	1-359	30		P101
3402	Tension ending angle	1-359	180		P102
3403	Periodic signal of the first thread tension release output action (%)	1-100	35		P211
3404	Thread tension release the first output action time	1-100	20		P212
			3.5 Pedal s	etting	
3501	Speed curve adjustment (%)	10-100	80		P02
3502	The voltage of forward step pedal point	30-1000	520		P21
3503	The voltage of intermediate step pedal point	30-1000	420		P22
3504	The voltage of half heeling pedal point	30-1000	270		P23
3505	The voltage of heeling pedal point	30-1000	130		P24
3506	Delay time of half heeling pedal	10-900	100		P93
	·	3.6	Safety protec	ction setting	
3601	Machine protection switch testing	0-2	1	0: OFF 1: Testing zero signal 2: Testing positive signal	P66
3602	Oil level lower protection testing	OFF/ON	OFF		P120
3603	Setting high voltage protection value	850-1023	880	When the external input AC voltage is converted into DC voltage and the value exceeds the set value, the system will alarm E01 and stop working.	P89
3604	Tension electromagnet protection time	1-60	5	Electromagnet working protection time (S)	P57
3605	Trimming protection switch	OFF/ON	OFF		P67
		3.7 Stitch leng	gth setting of	stepping back-tacking	
3701	Back-tacking motor zero-point correction	-100~100	0		P129

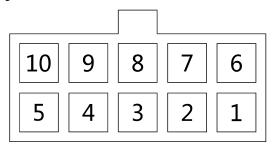
3700     Silch lengh reference compension     100~100     0     P74       3704     Tarking sitch lengh compension     100~100     0     P74       3705     Bak-tacking sitch lengh compension     0.200     0     P74       3706     Bak-tacking sitch lengh compension     0.200     0     P74       3707     Bak-tacking sitch lengh compension     0.200     0     P243       3708     Bak-tacking sitch lengh compension     0.200     0     P243       3709     Bak-tacking sitch lengh distance     0.6.0     2.0     P149       3709     Bak-tacking sitch lengh distance     0.6.0     2.0     P171       3709     Correction sitches distance distance     0.6.0     0     P171       3710     Correction sitches distance distance     0.6.0     0     P171       3711     Correction sitches distance distance distance     0.6.0     0     P171       3712     Correction sitchengh sering     0.6.0     0     P173       3713     Maximum sitch lengh     0.6.0     0     P173       3714     Maximum sitch lengh     0.6.0     0     P173       3715     Back-tacking correction sitches distance distance method bio D     0     P245       3716     Back-tacking correction sitches di	3702	Normal stitch length		0-6.0	3.0			P131
3700     compensation     100 × 100     0     174     174       3700     Back-tacking sith lengh     -100 ~ 100     0     174     174       3700     Back-tacking sith lengh     -100 ~ 100     0     124     1243       3700     Back-tacking sith lengh     -100 ~ 10     6     1243     1243       3700     Back-tacking sith lengh     -100 & 12     124     1243       3700     Back-tacking sith lengh     -100 & 12     121     1213       3700     Back-tacking sith lengh     0.6.0     2.0     121     1213       3710     Correction sitches distance     0.6.0     0     1711     1711       3711     Correction sitches distance     0.6.0     0     1711     1711       3712     Correction sitches distance     0.6.0     0     1711     1711       3713     Correction sitches distance     0.6.0     0     1711     1711       3714     Back-tacking response time and abuton D     0.6.0     125     1713     1713       3714     Back-tacking stat     0.6.0     125     1723     1713       3715     Back-tacking stat     0.6.0     125     1724       3716     Back-tacking stat     0.6.0     126	3703	value setting						
3700         compensation         IOD         0         0         0         177           3700         Back-tacking sith         0-200         0         0         P243           3700         Back-tacking sith         0-200         0         0         P149           3700         Back-tacking sith period         1-100         6         P149           3700         Maximum current         1-100         6         P149           3700         Maximum current         0-6.0         2.0         P132           3710         Orrection sitches distance         0-6.0         0         P170           3711         Orrection sitches distance         0-6.0         0         P171           3712         Orrection sitches distance         0-6.0         0         P173           3711         Orrection sitches distance         0-6.0         0         P173           3711         Maximum sitch length setting         0-8.0         5.0         P123           3713         Maximum sitch length setting         0-8.0         5.5         P245           3713         Maximum durrer serving end         0.8.0         5.5         P246           37117         Maxima during setting	3704	compensation		-100~100	0			P74
3700 compensation steady current0 - 0.0.0 1 - 1000 00 072.433707 steady current maximum current of manual blob at distance1-1006 671.10071.1003708 distance of manual blob at of manual blob at 	3705	compensation	ength	-100~100	0			P75
3700     steady current maximum current distance     1-100     0     0     P149       3700     Maximum current distance     0-6.0     2.0     P151       3700     Örmanual close sitiches of manual button A     0-6.0     0     P171       3710     Örection sitches distance of manual button A     0-6.0     0     P171       3711     Örection sitches distance of manual button A     0-6.0     0     P170       3712     Örection sitches distance of manual button A     0-6.0     0     P171       3713     Örection sitches distance of manual button B     0-6.0     0     P173       3714     Maximum sitches distance of manual button B     0-8.0     5.0     P173       3715     Steak facking response time back-tacking response time back-tacking response time back-tacking comer sitch compensation 1     0-8.0     5.5     P245       3717     Back-tacking comer sitch oback-tacking comer sitch compensation 2     00-3000     1600     P246       3718     Back-tacking sorent sitch on findig speet     -100~100     0     P247       3719     Back-tacking sitch length oack-tacking sitch length     -100~100     0     P246       3710     Back-tacking sitch length in high speet     -100~100     0     -100~100       3720     Back-tacking sitch length in high speet <td>3706</td> <td></td> <td></td> <td>0-200</td> <td>0</td> <td></td> <td></td> <td>P243</td>	3706			0-200	0			P243
3706maximum current distance110012P1313709Maximum current distance0-6.02.0P1323710Correction stitches distance of manual button A of manual button B correction stitches distance of manual button B of manual button B 	3707		otor	1-100	6			P149
3.00       distance       0-0.0       2.0       P132         3710       Correction sitches distance of manual button A       0-6.0       0       P170         3711       Correction sitches distance of manual button P       0-6.0       0       P170         3712       Correction sitches distance of manual button P       0-6.0       0       P171         3713       Correction sitches distance of manual button D       0-6.0       0       P173         3714       Maximum sitch length minit       0-8.0       5.0       P173         3715       when dier free sewing end back-tacking start back-tacking and back-tacking nucleoner sitch compensation 1       20-350       125       P245         3717       Speed limit of start back-tacking nucleoner sitch compensation 1       -100~100       0       P246         3718       Back-tacking corre sitch compensation 1       -100~100       0       P247         3718       Back-tacking stering stich length sceling compensation 1       -100~100       0       P247         3719       Back-tacking stering stich length sceling compensation 1       -100~100       0       P247         3719       Back-tacking stich length compensation 1       -100~100       0       P248         3720       Back-tacking stich length compensation	3708		otor	1-100	12			P151
3710     of manual button A Correction stitches distance of manual button B correction stitches distance when after free sewing end back-tacking response time when after free sewing end back-tacking semi back-tacking and back-tacking and back-tacking and back-tacking and back-tacking and back-tacking and back-tacking corner stitch stitch length setting stitch length setting stitch length setting and the display bene in large stitch length setting and the display bene in large stitch length setting stitch length setting and the display bene in large stitch length setting and the displa	3709		3	0-6.0	2.0			P132
3/11     of manual button B     0-6.0     0     P1/0       3712     Correction stitches distance of manual button C     0-6.0     0     P171       3713     Granual button C     0-6.0     0     P173       3714     Maximum stitchength min     0-8.0     5.0     P123       3715     Maximum stitch length when after free sewing end back-tacking start     0-8.0     5.0     P245       3716     Large stitch length setting     0-8.0     5.5     P245       3717     back-tacking start     20-3500     125     P245       3718     Speed limit of start back-tacking and back-tacking start     200-3000     1600     P246       3718     Speed limit of start back-tacking start     -100~100     0     P247       3719     Back-tacking corner stitch onepassion 1     -100~100     0     P247       3719     Back-tacking start-tacking start	3710		istance	0-6.0	0			P71
3/12 of manual button C0-6.009/173713Correction stitches distance of manual button D0-6.009/1733714Maximum stitch length imit0-8.05.09/1233715Back-tacking response time when after free sewing end back-tacking stance back-tacking stant back-tacking stan	3711		istance	0-6.0	0			P170
3713 of manual button D0-6.000P173Maximum stick length imit0-8.05.0P1233714Back-tacking response time back-tacking start20.350125P773716Large stich length setting0-8.05.5P2453717Speed limit of start back-tacking and back-tacking and back-tacking and back-tacking and stich length setting0-8.05.5P2453718Speed limit of start back-tacking and back-tacking ormer stich compensation 2200-30001600P2463719Back-tacking corner stich compensation 2-100~1000P2473719Back-tacking corner stich compensation 2-100~1000P2483720Stich length tacking compensation 1-100~1000P2483721Iarge stich length tacking compensation 1-100~1000P2483721Large stich length tacking compensation 1-100~1000P2483722Large stich length compensation 1-100~1000Imm3722Back-tacking stich length speed-100~1000Imm3723Back-tacking stich length speed-100~1000Imm3734Imm-100~1000ImmImm3735Stich length speed-100~1000ImmImm3736Stich length speed-100~100StichImmImm3737Stich length speed-100~100Stich lengthImm <td>3712</td> <td></td> <td>stance</td> <td>0-6.0</td> <td>0</td> <td></td> <td></td> <td>P171</td>	3712		stance	0-6.0	0			P171
3714       Maximum stick length limit       0.8.0       5.0       P123         3715       back-tacking response time when after free sewing end back-tacking start       20.350       125       P77         3716       Large stick length string back-tacking end back-tacking, end back-tacking, end back-tacking when in large stick length setting       0.8.0       5.5       P245         3717       back-tacking comer stick compensation 1       20.300       1600       P247         3718       Back-tacking corner stick compensation 1       -100~100       0       P247         3718       Back-tacking corner stick compensation 1       -100~100       0       P248         3719       Back-tacking corner stick compensation 1       -100~100       0       P247         3718       Back-tacking corner stick compensation 1       -100~100       0       P248         3719       Back-tacking stick length setting       -100~100       0       P248         3710       Back-tacking stick length compensation 2       -100~100       0       P248         3711       Back-tacking stick length setting       -100~100       0       P248         3712       Back-tacking stick length       -100~100       0       P248         3712       Back-tacking stick length       -100~100	3713		stance	0-6.0	0			P173
3715when after free sewing end back-tacking start20-350125P773716Large stitch length setting0-8.05.5P2453717Speed limit of start back-tacking when in large stitch length setting200-30001600P2453718Back-tacking ormer stitch compensation 2-100~1000P2473719Back-tacking ormer stitch compensation 2-100~1000P2483720Back-tacking ormer stitch compensation 2-100~1000P2483721Back-tacking stitch length compensation in high speed-100~1000P2483722Back-tacking stitch length speed-100~1000Image: Stitch length compensation 2-100~1003723Back-tacking stitch length compensation in high speed-100~1000Image: Stitch length compensation 2-100~1003724Back-tacking stitch length compensation in high speed-100~1000Image: Stitch length compensation 2-100~1003724Back-tacking step meter speed50-1000550Image: Stitch lengthImage: Stitch length compensation 23725ForwardStitch length speedStitch length speedImage: Stitch length compensation 2Stitch length compensation 2Image: Stitch length compensation 23725Stitch length speedStitch length compensation 2Stitch length compensation2Stitch length compensation2Image: Stitch length compensation2Image: Stitch length compensation2Im	3714	Maximum stitch leng	th	0-8.0	5.0			P123
Speed limit of start back-tacking, end back-tacking when in large stich length setting200-30001600P2463718Back-tacking ormer stitch compensation 1 $-100 \sim 100$ 0P2473719Back-tacking corner stitch compensation 2 $-100 \sim 100$ 0P2483720Stitch length tacking ormer stitch length setting $-100 \sim 100$ 0P2483721Large stitch length tacking compensation in high speed $-100 \sim 100$ 0P2483722Large stitch length compensation in high speed $-100 \sim 100$ 0P2483721Back-tacking stitch length opensation in high speed $-100 \sim 100$ 0P2483722Back-tacking stitch length speed $-100 \sim 100$ 0P2483723Back-tacking stitch length speed $-100 \sim 100$ 0P2483724Targe stitch length speed $-100 \sim 100$ 0P2483724Back-tacking stitch length speed $-100 \sim 100$ 0P2493725Back-tacking stitch length speed $-100 \sim 100$ 0P2493726Tum speed $-100 \sim 100$ 0Tum speedTum speedTum speed3727Back-tacking step true speedStitch length respectiveStitch length respectiveTum speedTum speed3728Tum speedStitch length respectiveStitch length respectiveStitch length respectiveTum speed3729Tum speedStitch length respectiveStitch length respec	3715	when after free sewin	se time ng end	20-350	125			P77
3717       back-tacking end back-tacking own in large stitch length setting       200-3000       1600       P246         3718       Back-tacking corner stitch compensation 1       -100~100       0       P247         3719       Back-tacking corner stitch compensation 2       -100~100       0       P248         3719       Large stitch length tacking compensation 2       -100~100       0       P248         3720       Stitch length compensation in high speed       -100~100       0       P248         3721       Large stitch length stitch length compensation       -100~100       0       0       Image         3721       Large stitch length compensation in high speed       -100~100       0       0       Image       Image         3722       Back-tacking stitch length compensation in high speed       -100~100       0       0       Image       Image       Image         3722       Back-tacking stip in high speed       -100~100       0       0       Image       Image<	3716	Large stitch length se	etting	0-8.0	5.5			P245
3718Back-tacking correr stitch compensation 1 $-100 \sim 100$ 0P2473719Back-tacking correr stitch compensation 2 $-100 \sim 100$ 0P2483720Large stitch length tacking in high sped $-100 \sim 100$ 0P2483721Stitch length compensation in high sped $-100 \sim 100$ 00P2483721Large stitch length tacking in high sped $-100 \sim 100$ 00003721Large stitch length compensation in high sped $-100 \sim 100$ 00003722Back-tacking stitch length compensation in high sped $-100 \sim 100$ 00003723Back-tacking stitch length sped $-100 \sim 100$ 000003724Back-tacking stitch length sped $-100 \sim 100$ 0000003725Back-tacking step length sped $50 \cdot 1000$ 0000003726Stitch length sped $50 \cdot 1000$ $550$ BackwardStitch length11mmImmImmImmImmImmImmImm3mnImmImmImmImmImmImm3mnImmImmImmImmImm3mnImmImmImmImmImm3mnImmImmImmImmImm3mmImmImmImmImmImm3mmImmImm <td>3717</td> <td colspan="2"><ul><li>back-tacking, end</li><li>back-tacking and</li><li>bar-tacking when in large</li></ul></td> <td>200-3000</td> <td>1600</td> <td></td> <td></td> <td>P246</td>	3717	<ul><li>back-tacking, end</li><li>back-tacking and</li><li>bar-tacking when in large</li></ul>		200-3000	1600			P246
3719       Back-tacking corner stitch compensation 2 $-100 \sim 100$ 0       P248         3720       Large stitch length tacking in high speed $-100 \sim 100$ 0       0       1000000000000000000000000000000000000	3718	Back-tacking corner	stitch	-100~100	0			P247
$ \begin{array}{c c c c } & \mbox{Large stitch length tacking stich length compensation in high speed} & -100 ~ 100 & 0 & & & & & & & & & & & & & & & &$	3719	Back-tacking corner	stitch	-100~100	0			P248
$ \begin{array}{c c c c } \mbox{in high speed} & i$		Large stitch length ta	-					
$3721$ Large stitch length back-tacking stitch length compensation in high speed $-100 \sim 100$ $0$ $3722$ Back-tacking step motor speed $50-1000$ $550$ $3722$ Back-tacking step motor speed $50-1000$ $550$ Stitch length reference value settingTorwardStitch length Stitch lengthBackwardStitch lengthImmImmStitch lengthBackwardStitch lengthImmImmStitch lengthBackwardStitch lengthImmImmStitch lengthImm	3720		sation	-100~100	0			
$\begin{array}{c c c c c c } 3721 & \begin{array}{c c c c c } back-tacking stitch \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \$								
3722       Back-tacking step motor speed $50-1000$ $550$ $3.7.3$ Stitch length reference value setting $3.7.3$ Stitch length reference value setting         Forward       Stitch length reference value setting         1mm       1mm       1mm         2mm       2mm       2mm         3mm $4mm$ 4mm	3721		ngth	-100~100	0			
3722     speed     50-1000     550       3.7.3 Stitch length reference value setting       3.7.3 Stitch length reference value setting       Forward     Stitch length     Backward     Stitch length       1mm     1mm     1mm     1mm       2mm     2mm     3mm     3mm       4mm     4mm     4mm     50		compensation in high	speed					
ForwardStitch lengthBackwardStitch length1mm1mm1mm2mm2mm2mm3mm3mm3mm4mm4mm7	3722		otor	50-1000	550			
1mm1mm2mm2mm3mm3mm4mm4mm				3.7.3 Stite	h length refe	ence value setting		
1mm         2mm         2mm           2mm         2mm         3mm           3mm         3mm         4mm		Forward		Stitch length	1	Backward	Stitch leng	ţth
3mm         3mm           4mm         4mm		1mm				1mm		
4mm         4mm		2mm				2mm		
		3mm				3mm		
5mm 5mm		4mm				4mm		
		5mm				5mm		

	6mm					6mm	1			
7mm					7mm					
8mm					8mm					
				3.8	Testing	mode				
3801	Testing mode switch	L	ON/OFF	C	)FF	(Perform the c trimming at th			stop-thread	
3802	Output function sing testing	le								
3803	Testing mode setting	5								
			3.8.2 0	Output	function	n single testing				
	Trimming									
	Presser foot									
			3	.8.3 A	utorun t	est mode				
Period	Testing speed (whe test speed is 0,the cu cycle is not execut	ırrent	Running time (0	(0.1s) Stop		o time (0.1s)	o time (0.1s) Motor ru directi			me (m) (No n time is 0)
1	3500		30			10	CCV	W 0		)
2	0		0			0	CCV	W	0	
3	0		0			0	CCV	W 0		)
4	0		0			0	CCV	W	0	
5	0		0			0	CCV	W 0		)
				3.9 St	ate info	rmation				
3901	Version number									
3902	Motor speed display					Display currer	nt motor spe	ed		
3903	Needle position angl	e value				Display the cu	irrent motor	angle of t	he machine	
3904	Pedal AD value					Display the cu	rrent AD va	lue of the	pedal	
3905	Busbar voltage AD v	alue								
3906	Oil level sensor AD									
3907	Knee moving position sensor AD value	n								
3908	Trimming position s AD value									
3909	Presser foot lift high sensor AD value	ness								
3910	Grating signal									
				3.9.1	Version	number				
39101	Control box version									
39102	Control box vice ver number	sion								

				1				
Display board version number								
Step drive version number								
Control box version number 2								
3.10 Main shaft motor setting								
Main shaft motor maximum speed limit	0-5000	3700						
Main shaft motor zero-point correction								
Up position quick adjustment								
Down position quick								
Speed limit of manual	0-3200	0						
Reverse angle function selection after trimming	ON/OFF	OFF						
Adjustment of reverse angle after trimming	10-50	40						
Up position value	0-359	190						
Down position value	0-359	0						
Low (positioning) speed	100-500	210						
half-way	1-45	16						
Stopping strength after trimming	1-50	20						
Up / down needle position distance value	0-359	170	In the quick setting interface of the needle position for the upper and lower stops, when the upper positioning value is saved, the lower positioning value will be automatically calculated based on the upper and lower positioning distance values.					
Main shaft motor rotation direct setting	CCW/CW	CCW	CW: Clockwise CCW: Counterclockwise					
Main shaft motor maximum	0-20	10						
Main shaft motor lockedrotor current (A)	0-20	10						
Main shaft motor normal current (A)	0-20	16						
Main shaft motor encoder type selection	No magnetic ring / With magnetic ring	No magnetic ring						
3.11 Clamp function without any thrum								
The delay time before hook thread with clamp function without any thrum	0-990	60						
with clamp function without any thrum	0-990	70						
The return back time of hook thread with clamp	0-990	30						
	Step drive version numberControl box version number2Main shaft motor maximum speed limitMain shaft motor zero-point correctionUp position quick adjustmentDown position quick adjustmentSpeed limit of manual back-tackingReverse angle function selection after trimmingAdjustment of reverse angle after trimmingUp position valueDown position valueLow (positioning) speedStopping strength as half-wayStopping strength after trimmingUp / down needle position distance valueMain shaft motor rotation direct settingMain shaft motor normal current (A)Main shaft motor normal current (A)Main shaft motor normal current (A)Main shaft motor encoder type selectionThe delay time before hook thread with clamp function without any thrumThe hook thread action time with clamp function without any thrumThe return back time of	numberImage: step drive version numberStep drive version number	numberImage: stand start motor maximum speed limitImage: start motor maximum speed limit motor zero-point correctionImage: start motor maximum speed limit motor zero-point correctionImage: start motor maximum motor motor motor adjustmentImage: start motor maximum motor maximum furmingImage: start motor maximum motor maximum motor maximum motor maximum motor mage: start motor motor motor motor mage: start motor motor motor maximum motor motor motor maximum motor motor maximum motor motor maximum motor motor maximum motor motor motor maximum motor maximum motor maximum motor maximum motor maximum motor motor motor maximum motor maximum motor maximum motor maximum motor motor motor motor motor motor motor motor maximum motor motor motor maximum motor motor motor motor motor motor maximum motor motor maximum motor motor motor motor motor motor maximum motor motor motor maximum motor motor motor motor motor maximum motor	number((Step drive version number((Control box version number((Control box version number0.50003700Main shaft motor maximum geed limit0.50003700Main shaft motor zero-point correction((Down position quick adjustment((Down position quick adjustment((Preverse angle function selection after trimming(0.5200Down position quick adjustment((Preverse angle function selection after trimming(0.500Down position value(0.5390Down position value(0.5390Down position value(0.500210Down position value(0.500210Down position value(0.359100Down position value(0.359100Low (positioning) speed11.650200100It was the prevision of the upper and lower stops, when the upper positioning value is saved, the lower positioning value is saved, the lower position distance values.Main shaft motor crutation Main shaft motor maximum to exerce normalization calculated based on the upper and lower positioning value will be automatically calculated based on the upper and lower positioning value will be automatically calculated based on the upper and lower positioning distance values.Main shaft motor maximum <b< td=""></b<>				

	function without any thrum						
31104	Duty cycle for hook thread with clamp function without any thrum	0-100	70				
31105	The suction time for clamp function without any thrum	0-5000	500				
31106	Duty cycle for pull thread with clamp function without any thrum	0-100	70				
		3	.12 Layer sea	m setting			
31201	Layer seam mode rotation speed over thick	200-3700	2000				
31202	Fabric thickness sensor AD value	0-1023	530				
31203	Layer seam proportion	1-100	10				
31204	Layer seam stitch length limit	0-5.0	4.0				
			3.13 Other	setting			
31301	Type selection	1-50	35		P70		
	3.14 Speed limit setting of main shaft motor start sewing						
31401	First stitch speed limit of start sewing	0-1500	0	It is invalid when the parameter value is 0.	P205		
31402	Second stitch speed limit of start sewing	0-2000	0	It is invalid when the parameter value is 0.	P206		

### 4. Port diagram 10P function port description



1. Suction with clamp function without any thrum: 1, 6(+24V)

2. Hook thread with clamp function without any thrum: 2, 7(+24V)

3. Thread clamping (thread wiping)/ Pull thread with clamp function

without any thrum: 3, 8(+32V)

4. Thread tension release: 4, 9(+32V)

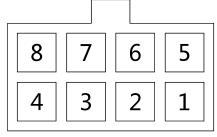
5. Trimming: 5, 10(+32V)

#### 6P function port description

6	5	4
3	2	1

- 1. Manual button A: 1
- 2. Manual button B: 2
- 3. Manual button C: 3
- 4. LED light: 4(+5V), 6(DGND)
- 5. Manual button D: 5

## 8P function port description



- 1. LOGO light: 1, 5(+S5V)
- 2. Oil level sensor: 2, 6(+S5V)
- 3. GND: 3, 7
- 4. Presser foot sensor: 4, 8(+S5V)