


Safety Instruction

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

Guarantee Time

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

Warranty Detail

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

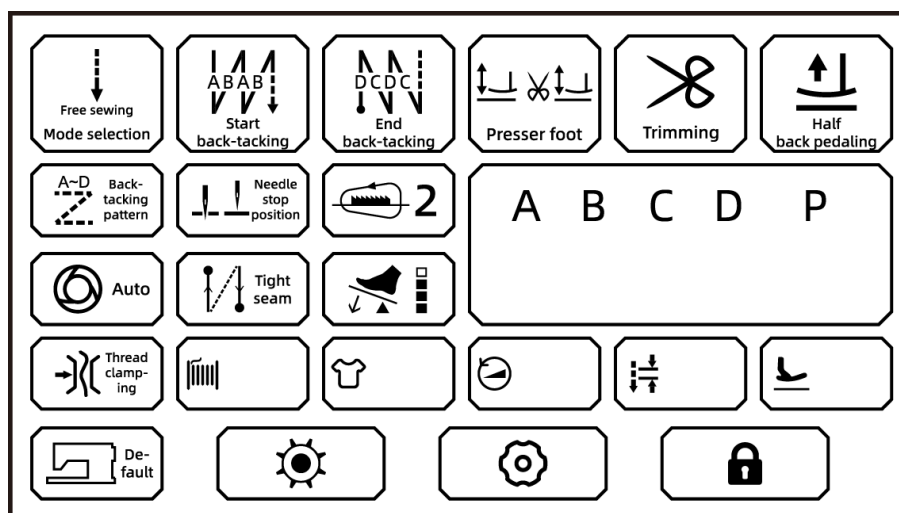
1. Inappropriate use, including: wrong connecting high voltage, wrong application, disassemble, repair, modification by incompetent personnel, or operation without the precaution, or operation out of its specification range, or inserting other objects or liquids into the product.
2. Damage by fire, Earth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




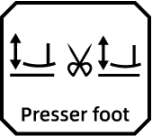


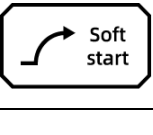
* We make our best effort to test and manufacture the product for assuring the quality.

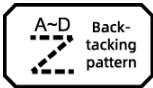
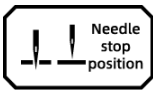


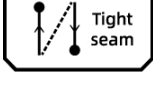

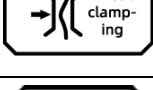

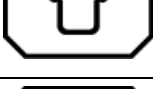

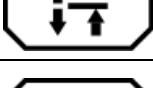

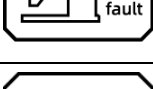

However, it is possible that this product can be damaged due to external magnetic interference and electronic static or noise or unstable power source more than expected; therefore the grounding system of operate area must guarantee the good earth and it's also recommended to install a failsafe device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



1 Interface instructions

1.1 Main interface instructions

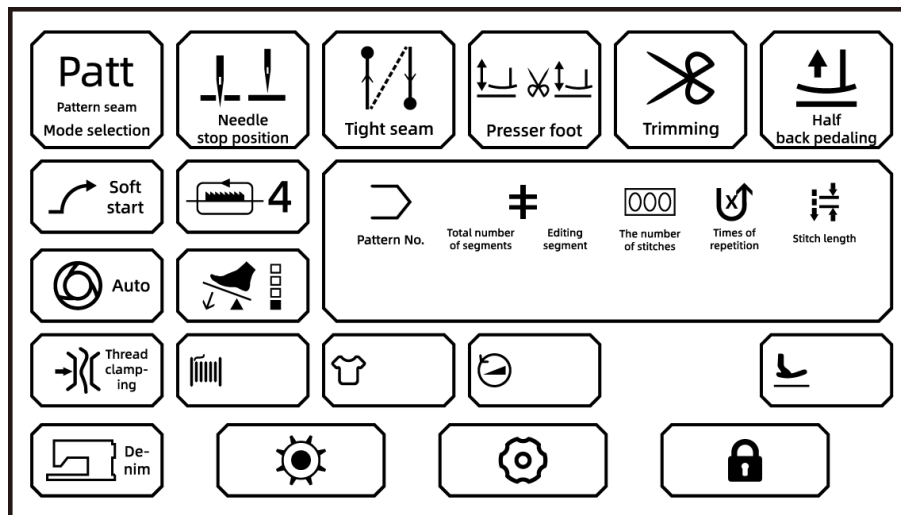



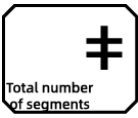

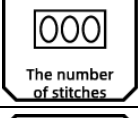

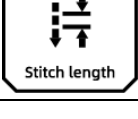
Name	Key	Indicate
Mode selection		If press, switch free sewing, W sewing, constant stitch sewing and pattern seam successively.
Start back-tacking		If press, switch AB start back-tacking → ABAB start back-tacking → function off → B start back-tacking successively. If long-press, switch to back-tacking setting interface.
End back-tacking		If press, switch CD end back-tacking → CDCD end back-tacking → function off → C end back-tacking successively. If long-press, switch to back-tacking setting interface.
Presser foot		If press, switch function off → automatic presser foot lifting after trimming → automatic presser foot lifting when pause → full function successively.
Thread trimming		If press, set to use or cancel thread trimming function.
Half back pedaling		If press, set to use or cancel presser foot of half back pedaling function.
Soft start		If press, set to use or cancel soft start function.

Back-tacking pattern		If press, set to use or cancel back-tacking pattern function.
Needle stop position selection		If press, the position of needle after sewing is switched (upper position / lower position).
Feeding track		If press, feeding track can be switched.
Autorun		If press, set to use or cancel autorun function in constant stitch sewing mode.
Tight seam		If press, switch starting tight seam → ending tight seam → full function → function off successively. If long-press, switch to tight seam mode setting interface.
Pedal sensitivity		If press, pedal sensitivity can be adjusted.
Thread clamping		If press, set to use or cancel thread clamping function.
Counting of bobbin thread		If the count reaches the set value, error E51 will be reported, click on the error report interface and the count will be restored to the default value.
Counting of thread trimming		If double-click, the counting is cleared.
Speed		If press, this data is selected and can be adjusted.
Stitch length		If press, this data is selected and can be adjusted.
Maximum presser foot height		If press, this data is selected and can be adjusted.
Sewing mode		If press, switch to sewing mode selection interface and you can select 5 sewing modes: thin, thick, d2efault, knit and denim.
Advanced setting		If double-click, switch to advanced setting interface.

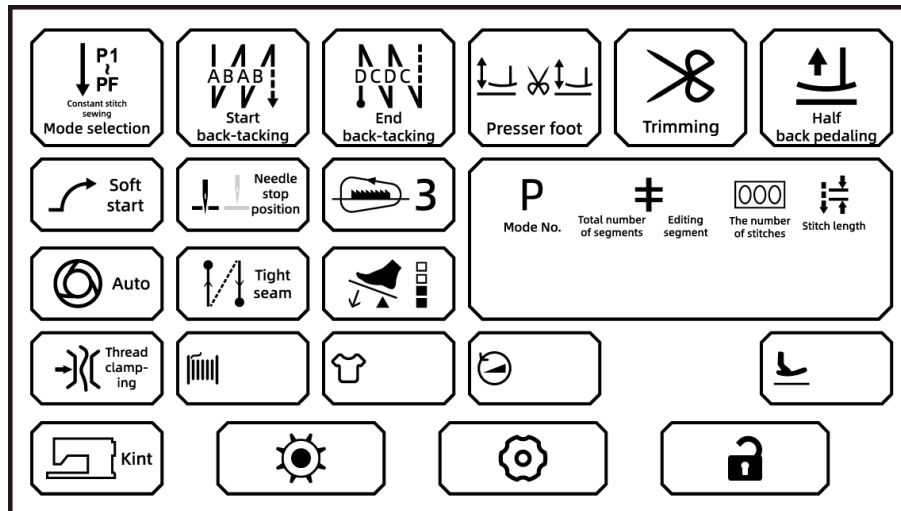
Setting		If press, switch to setting interface.
Lock screen		If press, switch between lock screen or unlock.


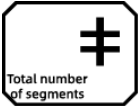


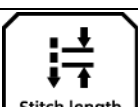
1.2 Pattern seam interface instructions



No.	Items	Range	Default	Description
1	 Pattern No.	1-19	1	If “1” is displayed, it represents pattern number 1.
2	 Total number of segments	1-10	10	If “10” is displayed, it represents the total number of segments is 10. If press, you can select the total number of segments.
3	 Editing segment	1-10	1	If “1” is displayed, it represents first editing segment.
4	 The number of stitches	0-99	1	If “1” is displayed, it represents the number of stitches in the editing segment is 1.
5	 Times of repetition	1-9	5	If “5” is displayed, it represents times of repetition is 5.
6	 Stitch length	0-7.0	4.8	If “4.8” is displayed, it represents stitch length of the editing segment is 4.8.

1.3 Constant stitch sewing interface instructions



No.	Items	Range	Default	Description
1		1-10	1	If “1” is displayed, it represents mode number 1 in constant stitch sewing.
2		1-15	15	If “15” is displayed, it represents the total number of segments is 15. If press, you can select the total number of segments.
3		1-15	1	If “1” is displayed, it represents first editing segment.
4		1-99	10	If “10” is displayed, it represents the number of stitches in the editing segment is 10.
5		0-5.0	3.0	If “3.0” is displayed, it represents stitch length of the editing segment is 3.0.

1.4 Debugging interface instructions




In the main interface, long press 2s to enter the debugging interface.

No.	Items	Range	Default	Description
1	P92 Main shaft motor zero-point correction			
2	P72 Upper positioning quick adjustment			
3	P129 Center point correction of feeding stepping motor	-500~500	0	
4	P74 Tacking stitch length compensation of track 1	-100~100	0	
5	P75 Back-tacking stitch length compensation of track 1	-100~100	0	

6	P144 Tacking stitch length overall compensation in high speed	-100~100	0	
7	P145 Back-tacking stitch length overall compensation in high speed	-100~100	-10	
8	P11 Back-tacking stitch overall compensation	-20~20	0	
9	P244 ([245]-7mm) Back-tacking stitch overall compensation	-20~20	0	

2 Setting interface



Press  to enter the setting interface, the directory is as follows.

No.	Directory
1	Main shaft motor setting
2	Tight seam setting
3	Back-tacking setting
4	Counting setting
5	Soft start setting
6	Machine switch setting
7	Clamping and thread tension releasing setting
8	Interface setting
9	Counting of bobbin thread setting
10	Clamping without any thrum setting
11	Speed limit setting when start sewing
12	Thread trimming setting
13	Presser foot setting
14	Pedal setting
15	Reset

No.	Items	Range	Default	Description
2.1 Main shaft motor setting				
2101	P56 Automatically find the upper position after power-on	0-1	1	0: OFF 1: ON
2.2 Tight seam setting				
2201	P108 The number of stitches for starting tight seam	0-12	2	
2202	P107 Starting tight seam speed	100-3000	1800	
2203	P99 Stitch length of starting tight seam	0-50	5	
2204	P100 Direction of starting tight seam	0-1	0	
2205	P160 The number of stitches for ending tight seam	0-12	1	

2206	P153 Stitch length of ending tight seam	0-50	8	
2207	P154 Ending tight seam speed	100-3000	1500	
2208	P159 Direction of ending tight seam	0-1	0	
2.3 Back-tacking setting				
2301	P04 Start back-tacking speed	200-3000	2000	
2302	P05 End back-tacking speed	200-3000	2000	
2303	P28 Bar-tacking running mode selection	0-1	1	
2304	P10 Automatic end back-tacking sewing after constant-stitch sewing	0-1	1	
2305	P12 Start back-tacking running mode selection	0-1	1	
2306	P13 Ending mode of start back-tacking	0-1	1	
2307	P18 Start back-tacking stitch compensation 1	0-200	0	
2308	P19 Start back-tacking stitch compensation 2	0-200	0	
2309	P25 End back-tacking stitch compensation 3	0-200	0	
2310	P26 End back-tacking stitch compensation 4	0-200	0	
2311	P32 Bar-tacking stitch compensation 5	0-200	0	
2312	P33 Bar-tacking stitch compensation 6	0-200	0	
2.4 Counting setting				
2401	P17-N13 Counting of thread trimming mode selection	0-2	1	0: OFF 1: Incremental counting mode 2: Diminishing counting mode
2402	P41 Counting of thread trimming current value	0-9999	0	The current value is the current actual value, and the set value is the reference value.
2403	P17-N25 Counting setting value	0-9999	9999	
2404	P41 Counting of thread trimming set value	0-50	1	Set the number of trimming times, the count will be increased by one.
2.5 Soft start setting				
2501	P14 Soft start function selection	0-1	0	
2502	P08 The number of stitches for soft start	1-15	2	
2503	P90 The speed of soft start first stitch	200-1500	400	
2504	P91 The speed of soft start second stitch	200-1500	1000	
2505	P07 Speed after second stitch of soft start	200-1500	1500	

2.6 Machine switch setting				
2601	P15 Function selection for manual key A	0-6	5	0: OFF 1: Half stitch 2: One stitch 3: Continuous half stitch 4: Continuous one stitch 5: With back-tacking when machine sewing or pause 6: Tight seam function
2602	P174 Function selection for manual key B	0-6	3	0: OFF 1: Half stitch 2: One stitch 3: Continuous half stitch 4: Continuous one stitch 5: With back-tacking when machine sewing or pause 6: Tight seam function
2603	P175 Function selection for manual key C	0-6	3	0: OFF 1: Half stitch 2: One stitch 3: Continuous half stitch 4: Continuous one stitch 5: With back-tacking when machine sewing or pause 6: Tight seam function
2604	P176 Function selection for manual key D	0-6	3	0: OFF 1: Half stitch 2: One stitch 3: Continuous half stitch 4: Continuous one stitch 5: With back-tacking when machine sewing or pause 6: Tight seam function
2.7 Clamping and thread tension releasing setting				
2701	P35 Thread tension releasing setting when presser foot lifting	1-2	1	
2702	P37 Thread wiping / clamping setting	0-11	8	0 : OFF 1: Thread wiping function 2-11: Thread clamping function, the greater the value, the greater the action strength.
2703	P36 Thread tension releasing setting	0-1	1	
2704	P78 The starting angle of thread clamping	5-359	100	

2705	P79 The stopping angle of thread clamping	5-359	270	
2706	P103 Thread tension releasing strength setting	1-80	28	
2707	P211 First output action periodic signal of thread tension releasing (%)	0-100	40	
2708	P212 First output action time of thread tension releasing	0-100	20	
2.8 Interface setting				
2801	P271 Main interface auto-lock time	10-900	60	
2802	P273 Language	0-3	0	
2803	P270 Brightness	0-80	80	
2804	P274 Lockscreen brightness	0-80	10	
2.9 Counting of bobbin thread setting				
2901	P166 The number of stitch current value of bobbin thread (stitch)*10	0-9999	0	
2902	P165 Counting mode of bobbin thread selection	0-4	4	0: OFF 1: Incremental cycle counting 2: Decreasing cycle counting 3: Incremental counting, alarm after full count, need to click the screen to release the alarm to start counting again. 4: Decrement counting, alarm after full count, need to click the screen to release the alarm to start recounting.
2903	P166 The number of stitch set value of bobbin thread (stitch)*10	0-9999	500	The set value is the reference value.
2.10 Clamping without any thrum setting				
21001	P111 Clamping without any thrum switch	0-1	0	
2.11 Speed limit setting when start sewing				
21101	P205 First stitch speed limit when start sewing	0-9999	0	0 means no speed limit.
21102	P206 Second stitch speed limit when start sewing	0-9999	0	0 means no speed limit.
2.12 Thread trimming setting				
21201	P137 First thread trimming distance	0-400	70	The distance of the first engage can be tested in the pop-up window.
21202	P138 Second thread trimming distance	0-400	120	The distance of the second engage can be tested in the pop-up window.
21203	P134 Third thread trimming distance	0-400	195	The distance of the third engage can be tested in the pop-up window.
21204	P140 Stepping motor return speed of thread trimming	20-400	400	
21205	P142 First thread trimming speed	20-400	250	

21206	P141 Second thread trimming speed	20-400	250	
21207	P54 Thread trimming time	10-990	200	
21208	P80 Thread trimming first engage angle	0-359	65	
21209	P82 Thread trimming second engage angle	0-359	170	
21210	P110 Stepping motor return time of thread trimming	60-990	100	
21211	P49 Main shaft motor speed when trimming	100-500	250	
21212	P81 The stopping angle of thread trimming first engage	1-800	130	
2.13 Presser foot setting				
21301	P52 Presser foot lowering time	10-990	120	
21302	P125 Presser foot height compensation when the pedal returns to center position in sewing	0-300	250	
21303	P136 The highest height of presser foot	0-270	250	
21304	P146 Presser foot speed	20-400	300	
21305	P130 Stepping motor zero-point correction of thread trimming / presser foot	0-100	0	
21306	P150 Presser foot stepping motor holding current	0-30	12	
21307	P152 Presser foot stepping motor maximum current	0-60	45	
21308	P135 The lowest presser foot height of electronic knee-control device	0-270	100	
21309	P126 The highest presser foot height of electronic knee-control device	0-270	250	
21310	P67 Electric wrench function switch	0-1	1	
21311	P232 Electric wrench starting AD value	0-9999	450	
21312	P233 Electric wrench stopping AD value	0-9999	50	
21313	P172 Maximum height limit of presser foot	0-300	270	
21314	P122 Knee-control starting AD value	0-1023	600	
21315	P147 Stepping motor rotation direction of presser foot	0-1	0	
21316	P127 Knee-control function selection	0-2	1	
21317	P148 The highest presser foot height of electronic knee-control in sewing	0-300	100	
2.14 Pedal setting				

21401	P02 Acceleration curve adjustment	10-100	80	
21402	P21 The voltage of front pedaling point	30-1000	520	
21403	P22 The voltage of middle pedaling point	30-1000	420	
21404	P23 The voltage of half back pedaling point	30-1000	270	
21405	P24 The voltage of back pedaling point	30-500	130	
21406	P93 The delayed time of half back pedaling	10-900	100	
21407	P17-N21 Pedal gear	1-4	1	

3 Advanced setting interface



Double-click and enter the correct password to enter the advanced settings interface, the directory is as follows.

No.	Directory
1	Thread clamping setting
2	Thread tension releasing setting
3	Safety protection setting
4	Feeding stepping motor setting
5	Testing mode
6	Status information
7	Main shaft motor setting
8	Clamping without any thrum setting
9	Other settings
10	P parameter
11	System parameter
12	Latch

No.	Items	Range	Default	Description
3.1 Thread clamping setting				
3101	P78 The starting angle of thread clamping	5-359	100	
3102	P79 The stopping angle of thread clamping	5-359	270	
3103	P55 Thread wiping / thread pulling of clamping without any thrum action time	10-990	220	
3204	P109 The delayed time before thread wiping	5-990	5	
3.2 Thread tension releasing setting				
3201	P101 The starting angle of thread tension releasing	1-359	10	
3202	P102 The stopping angle of thread tension releasing	1-359	200	

3203	P211 First output action periodic signal of thread tension releasing (%)	0-100	40	
3204	P212 First output action time of thread tension releasing	0-100	20	
3.3 Safety protection setting				
3301	P66 Machine protection switch	0-2	1	
3302	P120 Low oil level protection	0-1	0	
3303	P89 Input high-voltage protection value setting	500-1023	880	
3304	P57 Electromagnet protection time of thread tension releasing	1-60	2	
3.4 Feeding stepping motor setting				
3401	P131 Normal stitch length	0-50	30	
3402	P129 Center point correction of feeding stepping motor	-500~500	0	
3403	P280 Stitch length compensation value setting			
3404	P250 Feeding inertia of feeding stepping motor	0-9999	420	
3405	P251 Synchronization adjustment between feed dog and needle	0-9999	40	
3406	P253 Synchronization origin of feed dog and needle	0-9999	300	
3407	P243 Stitch length ratio (%)	0-200	102	
3408	P132 Manual tight seam stitch length	0-50	20	
3409	P71 Stitch length of darning stitch for manual button A	0-50	30	
3410	P170 Stitch length of darning stitch for manual button B	0-50	0	
3411	P171 Stitch length of darning stitch for manual button C	0-50	0	
3412	P173 Stitch length of darning stitch for manual button D	0-50	0	
3413	P123 Maximum stitch length limit	0-70	50	
3414	P77 Opportunity point of back-tacking for end back-tacking in high speed in free sewing	20-350	125	
3415	P245 Large stitch length setting	0-70	55	

3416	P246 Speed limit of start back-tacking, end back-tacking and bar-tacking in large stitch length	200-3000	1600	
3417	P249 Feeding stepping motor speed	50-1000	1000	
3.5 Testing mode				
3501	P61 Testing A	0-1	0	Continuous running, no stopping.
3502	P62 Testing B	0-1	0	Performs a cycle of functions such as starting-sewing-stopping-thread trimming at the test speed.
3503	P63 Testing C	0-1	0	Performs a cycle of functions such as starting-sewing-stopping-thread trimming at the test speed without positioning.
3504	Output function single testing			
3505	Testing mode setting			
3.6 Status information				
3601	Software version			
3602	Motor speed			
3603	Upper position angle value			
3604	Pedal AD value			
3605	Busbar voltage AD value			
3606	Lower position angle value			
3607	Knee-control position sensing AD value			
3608	Presser foot height sensing AD value			
3609	Electric wrench AD value			
3.6.1 Software version				
36101	Main software version			M1
36102	Main software version 2			M2
36103	Sub software version			S
36104	Panel software version			P
36105	Stepping driver software version			D1, D2
3.7 Main shaft motor setting				
3701	P68 Main shaft motor maximum speed limit	100-5000	4000	
3702	P92 Main shaft motor zero-point correction			

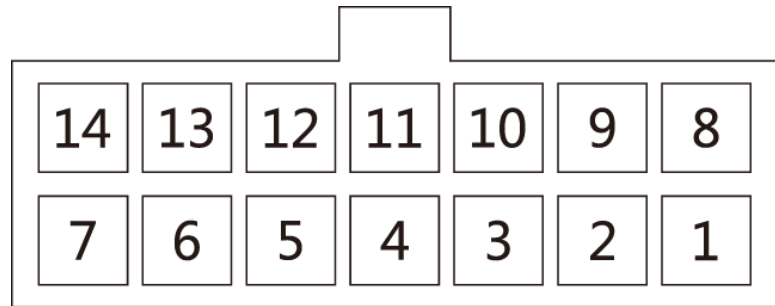
3703	P72 Upper positioning quick adjustment			
3704	P73 Lower positioning quick adjustment			
3705	P16 Speed limit of manual back-tacking	0-3200	0	
3706	P46 After trimming, needle lifting function when main shaft motor rotates in opposite direction	0-1	0	
3707	P47 After trimming, needle lifting angle adjustment when main shaft motor rotates in opposite direction	10-300	40	
3708	P58 Upper positioning adjustment	0-359	130	
3709	P59 Lower positioning adjustment	0-359	300	
3710	P48 The minimum speed (positioning speed)	100-500	200	
3711	P44 Braking strength during pause	1-45	16	
3712	P86 Upper and lower positioning distance	0-359	170	In the upper and lower position quick setting interface, when saving the upper positioning value, the lower positioning value will be calculated automatically according to the upper and lower positioning distance value.
3713	P43 Motor rotation direction setting	0-1	1	
3714	P96 Main shaft motor blocking current (A)	0-20	10	
3715	P106 Main shaft motor normal current (A)	0-20	16	
3.8 Clamping without any thrum setting				
3801	P112 The delayed time before thread hooking of clamping without any thrum	0-990	60	
3802	P113 Thread hooking action time of clamping without any thrum	0-990	70	
3803	P114 Thread hooking return time of clamping without any thrum	0-990	30	
3804	P115 Thread hooking duty cycle of clamping without any thrum	0-100	70	
3805	P116 Suction time of clamping without any thrum	0-5000	500	
3806	P117 Thread pulling duty cycle of clamping without any thrum	0-100	70	
3.9 Other settings				
3901	P70 Model selection	1-200	30	

3902	Startup logo selection	0-1	1	
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Note: the initial value of parameters is for reference only, and the actual value of parameters is subject to the real object.

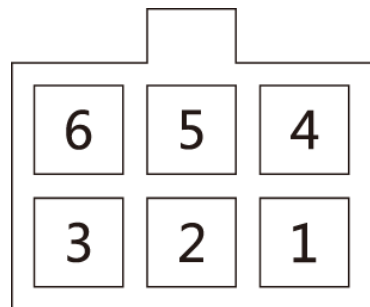
4 Port diagram

14P function port description



1. Thread clamping (thread wiping) electromagnet: 2 (DGND), 9 (+32V)
2. Thread tension releasing electromagnet: 3 (DGND), 10 (+32V)
3. LED Light: 4 (DGND), 11 (+5V)
4. Back-tacking button: 5 (signal)
5. Manual darning stitch button: 7 (signal)
6. 1/2 manual darning stitch button: 14 (signal)
7. 1/4 manual darning stitch button: 12 (signal)

6P function port description



1. Thread pulling for clamping function without any thrum: 1 (+32V), 4 (DGND)
2. Thread hooking for clamping function without any thrum: 2 (+32V), 5 (DGND)
3. Suction for clamping function without any thrum: 3 (+32V), 6 (DGND)