

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 Button displays and operating instructions

Name	key	Indicate
Function parameter edit		In the free sewing mode, If click, enter or exit the user parameter setting interface. In the constant stitch sewing mode, If click, enter or exit constant stitch sewing B parameter setting interface.
Save		For the content of the selected parameters check and save: after select parameter press this key to check and modify operation, after modified parameter value press this key to exit and save the parameter.
Parameter increase		Increase parameter or speed.
Parameter decrease		Decrease parameter or speed.
Trimming setting		If click, set to use or cancel trimming function. Indicator light is on: trimming is used; indicator light is off: trimming is canceled.
Constant stitch sewing		If click, set to use or cancel constant stitch sewing mode. Indicator light is on: constant stitch sewing mode; indicator light is off: free sewing mode.

2 Auxiliary function

2.1 Upper and lower needle stop position switching setting

In the main interface, long press the P key to switch the upper and lower stopping positions, and the corresponding indicator light is on.

1.2.2 Version number search

In the main interface, press the S key to display the version number interface and the indicator light is on, press any key to exit.

1.2.3 Speed controller AD value query

In the main interface, long press the S key to display the speed controller AD value interface, press the S key to exit.

3 Parameter list

3.1 Parameter list

No.	Items	Range	Default	Description
P01	Maximum speed (rpm)	100-4500	3700	Maximum speed of machine sewing.
P02	Set accelerated curve (%)	10-100	80	Set the acceleration slope. The greater the slope value, the steeper the speed; the smaller the slope value, the slower the speed.
P03	Needle UP/ DOWN	UP/DN	DN	UP: Upper needle stop position DN: Lower needle stop position
P07	Soft start speed (rpm)	200-1500	400	
P08	Stitch numbers for soft start	1-9	2	
P09	Automatic constant-stitch sewing speed (rpm)	200-4500	3000	Speed adjustment for automatic constant-stitch sewing.
P14	Soft start function selection	ON/OFF	OFF	

No.	Items	Range	Default	Description
P15	Darning stitch mode	0-4	2	0: OFF 1: One stitch 2: Continuous half stitch 3: Continuous one stitch 4: Continuous darning stitch, quick stop
P21	The position of the pedal for accelerating	30-1000	520	
P22	The position of the pedal for the stop	30-1000	420	
P24	The position of the pedal for thread trimming	30-1000	130	
P27-N06	Automatic piece counting selection	0-50	1	0: P41 trimming counter does not count automatically. 1-50: Trimming counting times setting
P27-N13	Piece counting mode selection	0-1	0	0: Incremental piecework mode 1: Diminishing piecework mode
P29	Stopping strength after thread trimming	1-45	32	
P34	Constant-stitch sewing running mode selection	A/M	A	A: Touch the foot pedal to automatically execute constant-stitch sewing action. M: Controlled by foot pedal, can be stopped and started at will.
P38	Automatic thread trimming function selection	ON/OFF	ON	
P41	Thread trimming counter display	0-9999	0	Display the quantity of finished sewing piece. Long-press “-” key to clear the count.
P42-N01	The control system version number			
P42-N02	The panel version number			
P42-N03	Speed			
P42-N04	The pedal AD			
P42-N05	The mechanical angle(upper position)			
P42-N06	The mechanical angle(lower position)			
P42-N07	Bus bar voltage AD			
P43	Motor rotation direction setting	CCW/CW	CCW	CW: Clockwise CCW: Counter clock wise
P44	Normal stopping strength	1-45	30	
P46	Motor stop with a reverse angle after trimming function	ON/OFF	OFF	
P47	Adjust the reverse angle when motor stop after trimming	10-300	40	Start from the upper needle position and adjust the angle of the needle lift in reverse operation after trimming.
P48	The minimum speed (positioning speed) (rpm)	100-500	210	Adjust the minimum speed.
P49	Thread trimming speed (rpm)	100-500	300	Adjust the motor speed during trimming.
P54	Thread trimming action time (ms)	10-990	200	

No.	Items	Range	Default	Description
P56	Power on and positioning	0-2	0	0: always do not find the upper positioning 1: Always find the upper positioning 2: If the motor is already in the upper position, do not find the upper position.
P58	Upper positioning adjustment	0-1440	40	Upper positioning adjustment, the needle will advance stop when the value decreased, the needle will delay stop when the value increased.
P59	Lower positioning adjustment	0-1440	220	Lower positioning adjustment, the needle will advance stop when the value decreased, the needle will delay stop when the value increased.
P60	Testing speed (rpm)	200-4500	3500	
P61	Testing A	ON/OFF	OFF	Continuous running testing.
P62	Testing B	ON/OFF	OFF	Start and stop testing with all functions.
P63	Testing C	ON/OFF	OFF	Start and stop testing without all function.
P64	Test run time	1-250	30	
P65	Test stop time	1-250	10	
P66	Machine protection switch selection	0-2	1	0: Disable 1: Detection of zero signal 2: Detection of positive signal
P68	Maximum speed limit	200-4500	3700	
P69	Motor model selection	0-50	0	
P70	Model selection		3	
P72	Upper positioning quick adjustment	0-360		Adjust upper needle stop position, the displayed value will change with the position of the handwheel, press "S" key to save the current position (value) as up needle position.
P73	Lower positioning quick adjustment	0-360		Adjust lower needle stop position, the displayed value will change with the position of the handwheel, press "S" key to save the current position (value) as down needle position.
P80	Trimming engage angle	5-359	18	Trimming engage angle setting (lower positioning is calculated as 0°).
P82	Trimming retract angle	5-359	172	
P84	Trimming full output time (ms)	10-990	60	
P85	Periodic signal of trimming output (*10%)	1-10	6	
P86	Upper and lower positioning distance	15-345	180	Upper and lower positioning distance angle (1 degree for every 4 values).
P89	AC overvoltage setting	500-1023	880	
P92	Correct the electrical angle of motor		160	Reading the initial Angle of encoder, the factory default was set, please do not change the values

No.	Items	Range	Default	Description
				(parameter value cannot be changed manually, random change it will result the control box and motor abnormal or damaged).
P110	Trimming back time (ms)	60-990	80	
P119	Electromagnet overcurrent protection detection switch	0-1	1	0: No alarm, shutdown output 1: Alarm and shutdown

3.2 B Parameter list

No.	Items	Range	Default	Description
B50	Number of segments for Constant stitch sewing	1-15	1	
B51	1st stitch number	1-999	12	
B52	2nd stitch number	1-999	12	
B53	3rd stitch number	1-999	12	
B54	4th stitch number	1-999	12	
B55	5th stitch number	1-999	12	
B56	6th stitch number	1-999	12	
B57	7th stitch number	1-999	12	
B58	8th stitch number	1-999	12	
B59	9th stitch number	1-999	12	
B60	10th stitch number	1-999	12	
B61	11th stitch number	1-999	12	
B62	12th stitch number	1-999	12	
B63	13th stitch number	1-999	12	
B64	14th stitch number	1-999	12	
B65	15th stitch number	1-999	12	

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

4 Error code list

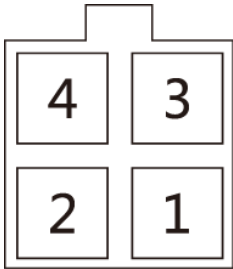
Error Code	Problem description	Solutions
E01	High voltage	1. Whether the grid voltage is higher than AC260V. 2. If it is self-generated power supply, please reduce the generator power. 3. If it still does not work normally, please replace the control box and notify the after-sales service.
E02	Low voltage	1. Whether to connect to low voltage. 2. Reset. 3. If it still does not work normally, please replace the control box and notify the after-sales service.
E03	CPU communication abnormal	1. Turn off the system power and check whether the connection of the display screen is loose or disconnected, restart the system after returning it to normal. 2. Turn off the system power, remove the control box and only plug in the power cord to power on, whether alarm E03, if it still alarms E03, replace the control box and notify the after-sales service.
E05	Pedal signal abnormal	1. Check whether the pedal connector is loose or fall off, and restart the system after returning it to normal.

		2. If it still does not work normally, please replace the control box or speed controller and notify the after-sales service.
E07	Main shaft motor locked-rotor	1. Turn off the power and check whether the handwheel can be turned smoothly (turn the handwheel by hand), if it cannot be turned, please check the machine. 2. Turn off the power, check whether the motor power connector is loose, plug it in and restart it. 3. Check whether the upper needle stop position is correct, if not, please adjust the upper positioning position. 4. If it still does not work normally, please replace the control box or spindle motor and notify the after-sales service.
E10	Electromagnet overcurrent	1. Unplug the solenoid connector, if alarm E10, replace the control box and notify the after-sales service. 2. If there is no alarm after removing the solenoid connector, please plug it back in. 1) Step on the front pedal and back pedal to let the sewing machine perform thread trimming, if alarms, please replace trimming electromagnet.
E09 E11	The positioning signal of main shaft motor encoder is abnormal	1. Turn off the system power, check whether main shaft motor encoder connector is loose or fall off, restore it to normal and restart the system. 2. Check whether the motor zero point correction setting is correct; Reset the motor zero point correction; Whether there is oil on the encoder code plate, please clean it if there is any. 3. If it still does not work normally, please replace the control box or main shaft motor and notify the after-sales service.
E14	Main shaft motor encoder signal is abnormal	1. Turn off the system power, check whether the main shaft motor encoder connector is loose or fall off, restore it to normal and restart the system. 2. Check whether the grating is installed correctly (whether the grating screws are tightened and whether the grating is in the center of the encoder). 3. Check whether there is oil on the encoder code plate, if there is, please clean it up, and restart the system after recovery. 4. If it still does not work normally, please replace the control box or main shaft motor and notify the after-sales service.
E15	Main shaft motor drive overcurrent	1. Please check whether the motor power cord has bad contact. 2. Please check whether the motor power cord is crushed. 3. Please replace the control box or main shaft motor and notify the after-sales service.
E17	Machine overturned	1. Turn off the system power and check if the machine is overturned. 2. Check whether the machine protection switch detection setting is correct. 3. If it still does not work normally, please replace the control box or panel and notify the after-sales service.
E20	Main shaft motor failed to start	1. Turn off the system power, check whether main shaft motor power cord connector and encoder connector are loose or fall off, restore them to

		normal and restart the system. 2. Check whether the motor zero point correction setting is correct, reset the motor zero point correction 3. If it still does not work normally, please replace the control box or main shaft motor and notify the after-sales service.
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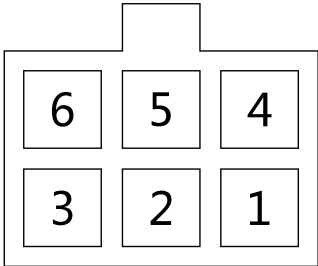
5 Port diagram

5.1 4P function port description



- 1. Pedal signal output port
- 2. Null
- 3. GND
- 4. 5V

5.2 6P function port description



- 1. Darning stitch: 1 (signal), 4 (GND)
- 2. Trimming electromagnet: 2, 5 (+32V)
- 3. LED lights: 3, 6 (+5V)