

⚠ 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 is lower than 250 VAC and matches the rated voltage indicated on the motor's name plate.
⚠ ※ Attention: If the Control Box is AC 220V system, please don't connect the Control Box to AC 380V power outlet. Otherwise, the error will occur and motor will not work. If that happens, please turn off the power immediately and check the power voltage.
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.
14. All the spare parts for repair must be provided or approved by the manufacturer.
15. 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.

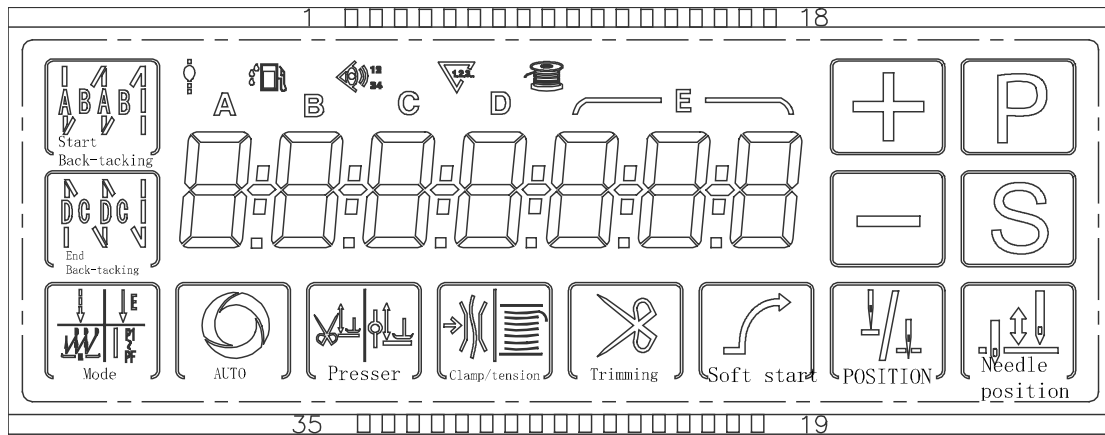
Warranty Detail:

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, lightning, 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



1.1.Key Description

名称	按键	注明
Function key enter parameter area		Under normal mode, press the [P] key to enter the user parameter mode
Enter and determine \ save button		Enter parameter values such items and their contents change after adjustment, need to press the [S] key to save the confirmation.
Set value increment / parameter increment key		<ol style="list-style-type: none"> 1. A、B、C、D、E、F、G、H section, increase the number of setting stitch . 2. Increase the parameter in Parameter selection. 3. Increase the setting value in Parameter value.
Set value decrement / decrement key parameters		<ol style="list-style-type: none"> 1. A、B、C、D、E、F、G、H decrease the number of setting stitch 2. Decrease the parameter in Parameter selection. 3. Decrease the setting value in Parameter value.
Start/End Back-Tacking Selection		Execution starting back seam B segment or execution starting back seam (A, B segment) 1 Execution starting back seam (A, B segment) 2 times
		Execution terminates back seam C segment or execution terminates back seam (C, D segment) 1 Execution terminates back seam (C, D segment) 2 times
Freedom sewing shortcuts		As the treadle is toed down, machine will start sewing. Once the treadle returns to neutral, machine will stop immediately. As the treadle is heeled back, machine will automatically start trimming cycle.
Some fixed stitch shortcuts		The implementation of paragraph E set needle function, when the display shows the icon, activate the E section of the needle function.
Continuous back seam shortcuts		Once the treadle is toed down, all the seams of Bar-Tacking will be completed with D times, and then the thread will automatically be trimmed. Note: When the Bar-Tacking Sewing starts, will not stop until the trimming cycle finished, except for the treadle heeled back to cancel

		the action.
Multi-section set needle shortcuts		Line multi-section stitching function, when the display shows the icon, the activation of multi-section needle stitch function.
Automatically trigger button		<ol style="list-style-type: none"> 1. In Free sewing: One touch of this key makes beep sound without any function also LED does not light up. 2. In Constant-Stitch Sewing: One shot to the pedal, stitches number of E, F, G or H will be automatically performed. Toe down the pedal again and again to finish the rest sections until it finish pattern.
Press the lift foot shortcuts		<ol style="list-style-type: none"> 1、When the icon is on, the presser foot is automatically lifted after cutting. 2、When the icon is on, the presser foot automatically lifts when the motor stops in the sewing. 3、When both icons are on, the presser foot is automatically lifted when the motor is stopped and the thread is cut. 4、 When the 2 icon is off, there is no automatic presser foot function.
Thread clamping function / lifting the foot when the loose line function shortcut keys		<ol style="list-style-type: none"> 1, the corresponding icon is on, the thread clamp function is turned on. 2, the corresponding icon does not shine, no clamp function.
Shortcut function		<ol style="list-style-type: none"> 1. Set the use or cancel tangent function. 2. When the corresponding icon is off, it means that the corresponding function is disabled.
Slow play seam shortcuts		<ol style="list-style-type: none"> 1. The corresponding icon lights, slow starting sewing open. 2. The corresponding icon is not lit, no slow-starting sewing function.
Stop the needle position switch key		<ol style="list-style-type: none"> 1: The icon lights up to indicate the stop position at stop 2: The icon indicates that the needle stops at the next stop
Fill the needle button		If you click, you can make a needle

2 User Parameter & Technician Parameter

Parameter	Parameter Function	Range	Default	Description
P01	Maximum Sewing Speed (rpm)	100-3700	3700	Maximum speed of machine sewing

Parameter	Parameter Function	Range	Default	Description
P02	Speed Curve Adjustment (%)	10-100	80	The Lager the value, the faster to increase speed
P03	Needle UP/ DOWN	UP/DN	DN	UP: Needle Stops at Up Position DN: Needle Stops at Down Position
P04	Start Back-Tacking Speed (rpm)	200-3200	1800	Start Back-Tacking Speed Adjustment
P05	End Back-Tacking Speed (rpm)	200-3200	1800	End Back-Tacking Speed Adjustment
P06	Bar-Tacking Speed (rpm)	200-3200	1800	Repeat Bar-Tacking Speed Adjustment
P07	Soft Start Speed (rpm)	200-1500	400	Soft Start Speed Adjustment
P08	Stitch Numbers for Soft Start	0-99	2	Soft Start Stitches Setting (one unit = half stitch)
P09	Automatic Constant-Stitch Sewing Speed (rpm)	200-4000	3700	Constant-Stitch sewing speed【034.SMP】 is set at A(or when one shot signal is active)
P10	Automatic End Back-Tacking Sewing(Can invalidate the stitch correction function)	ON/OFF	ON	The Stitch-Correction is valid in sewing stop. Note: Valid only when the【0.11.RVM】must set on B ON: Invalid (Constant-Stitch sewing, it can automatic continue action as CD function) OFF: Valid (Can't continue execute CD function)
P11	Back-Tacking Mode Selection	J/B	J	J: JUKI Mode (In the middle of the car to stop the middle of the time to stop when the inverted seam) B: BROTHER Mode (That is, in the vehicle to perform the reverse operation of the seam, in the end of the time to stop the needle
P12	Start Back-Tacking Mode Selection	0-1	1	A: One shot to pedal, it will automatic execute Start Back-Tacking. M: Pedal-controlled and motor can stop arbitrarily
P13	Mode Selection at the end of Start Back-Tacking	CON/STP	CON	CON: At the end of Start Back-Tacking, machine continues sewing if pedal pressed or START signal on (standing operation) STP: At the end of Start Back-Tacking, machine stops
P14	Soft Start	ON/OFF	ON	ON: Slow start feature is turned on. OFF: Slow start function off.
P15	Make up pin mode	0-4	2	0: Semi-pin; 1: a pin 2: Continuous filling half needle 3: Continuous injection
P18	Stitch Balance for Start Back-Tacking 1	0-200	131	A starting back seam segment stitches compensation 0-200 movement gradually lag; the larger the value, A short last longer needle, B section of the first needle is shorter
P19	Stitch Balance for Start Back-Tacking 2	0-200	165	Starting back seam B segment stitches compensation 0-200 movement gradually lag; the larger the value, paragraph B last longer needle
P20	Mode Selection for End Back-Tacking	0-2	1	A: Pedal full heeling ,it will automatic execute end Back-Tacking
P24	Foot pedal reverse voltage	30-500	110	

Parameter	Parameter Function	Range	Default	Description
P25	Stitch Balance for End Back-Tacking 3	0-200	131	Starting back seam segment stitches compensation C, 0-200 movement gradually lag; the larger the value, the shorter the C section of the first pin
P26	Stitch Balance for End Back-Tacking 4	0-200	165	D starting back seam segment stitches compensation 0-200 movement gradually lag; the larger the value, C section last a longer needle, the first needle is shorter segment D
P28	Mode Selection for Bar-Tacking	0-2	1	Continuous back seam segment, rewind solenoid operation timing: 0: controlled by the pedal can be arbitrarily stopping and starting; 1: Touch the pedal, automatically performs back-tacking action; 2: pause mode
P29	Tangent after braking force	1-45	20	
P30	Thick material angle	0-100	0	The larger the value the greater the intensity, the adjustment is too large may cause the motor abnormalities.
P31	Cutting angle	0-100	30	The larger the value the greater the intensity, the adjustment is too large may cause the motor abnormalities.
P32	Stitch Balance for Bar-Tacking 5	0-200	121	Start back-tacking A (C) paragraph stitch compensation, 0-200 movement gradually lag; the larger the value, A (C) the last paragraph of a needle longer; B (D) of the first paragraph, the shorter pin
P33	Stitch Balance for Bar-Tacking 6	0-200	165	Starting back seam B (D) segment stitch compensation, 0-200 movement gradually lag; the larger the value, B (D) last paragraph a longer needle, C section of the first needle is shorter
P34	Mode Selection for Constant-Stitch Sewing	A/M	A	A: One shot to pedal, it will automatic execute Constant-Stitch M: Pedal-controlled and motor can stop arbitrarily
P36	Slack line output function setting(loose line power set)	0-11	5	0: no loose wire operation 1 to 11 and gradually increases the intensity of loose wire
P37	Wiper Function Selection or Thread Clamp Pressure Setting	0-11	8	0 : No Action 1: Wiper Action 2-11: Thread Clamp action and the pressure gradually increased)
P38	Trimmer Function Selection	ON/OFF	ON	ON: Trimmer Valid OFF: Trimmer Invalid
P39	Presser Foot UP / Down at intermediate stop	UP/DN	DN	UP: Presser foot goes up automatically DN: Presser foot keeps down (Controlled by heeling pedal)
P40	Presser Foot UP / Down after Trimming	UP/DN	DN	UP: Presser foot goes up automatically DN: Presser foot keeps down (Controlled by heeling pedal)
P41	Display the sewing finished quantity		0	Counting the finished-sewing quantity

Parameter	Parameter Function	Range	Default	Description
P42	Information Display			NO1 Electrically controlled version serial numbers NO2 Selected needle cassette version NO3 Speed NO4 Pedals AD, NO5 Positioning angle NO6 Under the positioning angle NO7 Bus voltage AD N12 Knee position sensor AD
P43	Setting Direction of Motor Rotation	CCW/CW	CCW	CW: Clockwise CCW: Counter Clockwise
P44	Parking efforts	1-45	16	Efforts to stop the machine when selecting
P45	Back-seam operation duty cycle (%)	1-50	25	Back-seam action to periodic power output
P46	Motor stops with a reverse angle after trimming	ON/OFF	OFF	ON: It will automatic as reverse function after trimming (angle adjustment according to the parameter 【047.TR8】 OFF: No Function
P47	Adjustment of reverse angles after trimming	50-200	160	Adjusting at reverse direction after trimming
P48	Low (Positioning) Speed (rpm)	100-500	210	Setting Positioning Speed
P49	Trimming Speed (rpm)	100-500	300	Adjusting trimming speed
P50	The time of Foot lifting	10-990	250	Adjustment of foot lifting action
P51	Lift foot full force time (%)	1-50	25	Adjustment for Duty-Cycle of Foot Lifter / Back-Tacking (Fine tuning can reduce the over-heating)
P52	The time of Foot down	10-990	120	Delay starting motor, ensure that the foot is put down.
P53	Cancel Foot Lifting when Half-Heeling the Pedal	ON/OFF	OFF	ON: Pedal half heeling without foot lifting function. OFF: Pedal half heeling with foot lifting function
P54	Trimming Time (ms)	10-990	200	Trimming sequence time setting
P55	Setting Wiper Timing	10-990	30	Wiper sequence setting
P56	Needles Goes Up Automatically as Power turned on	0-2	1	0: always not to find a position 1: : always looking for positioning 2: If the motor is positioned on the no longer find location (only with magnet motor)
P57	Protection time for foot lifter(S)	1-60	10	It will automatic come down when foot lifter keep lift over the setting time.
P58	Up Position Adjustment	0-1439	1120	Up Position Adjustment The needle will advance stop when the value decreased. The needle will delay stop when the value increased.
P59	Down Position Adjustment	0-1439	360	Down Position Adjustment The needle will advance stop when the value decreased. The needle will delay stop when the value increased.
P60	Testing Speed (rpm)	100-3700	2000	Setting testing speed.

Parameter	Parameter Function	Range	Default	Description
P61	Testing A	ON/OFF	OFF	Option of Testing A, after setting press 【060. TV】 to set the speed keep running.
P62	Testing B	ON/OFF	OFF	Option of Testing B, after setting press 【060. TV】to set the speed execute the cycle of Start – Sewing –Stop - Trimming
P63	Testing C	ON/OFF	OFF	Option of Testing C, after setting press 【060. TV】to set the speed execute the cycle of Start – Sewing –Stop without positioning function
P64	Running Time of Testing B and C	1-250	20	Setting running time of testing B and C
P65	Stop Time of Testing B and C	1-250	20	Setting stop time of testing B and C
P66	Machine Protection Switch Testing	0-2	1	0: Disable, 1: Testing zero signal, 2: Testing positive signal
P67	Trimming Protection Switch Testing	ON/OFF	OFF	OFF: Disable ON: Enable
P70	The factory Type Selection		20	
P71	Presser foot release buffer duty cycle (%)	0-50	2	Efforts to ease foot pressure release time
P72	The needle position correction	0-1439	0	Hand rotation manual to the appropriate position, press S key to save
P73	Under needle position correction	0-1439	0	Hand rotation manual to the appropriate position, press S key to save
P76	Backstitch output of full time (ms)	10-990	250	
P77	Freedom sew back seam even terminate pause time (ms)	20-200	75	
P78	The Thread Clamp release angle	10-150	100	The positioning angle of starting clamp
P79	Clamp start action angle	160-359	270	The positioning angle of release
P80	Shear line infeed is angle	5-359	18	Shear line infeed is angle setting (under defined as 0 °)
P81	Cut the line start angle	5-359	140	Afterburner trimming angle setting
P82	Retract angle cut line	5-359	172	Afterburner trimming angle setting
P84	Thick start angle	0-330	9	
P85	The thick end angle	0-330	57	
P92	Encoder start angle		160	
P101	Loose line starting angle	1-359	30	Song line start angle (defined as 0 ° under calculation)
P102	Loose end angle	1-359	180	Loose wire end angle (defined as 0 ° under calculation)
P117	Release the presser foot buffer delay time (ms)	0-990	12	
P120	Oil alarm switch detects	0-1	0	0: Not detected 1: detected
P121	Trimming needle selection mode	0-3	2	0: Normal mode 1: cut thread mode

Parameter	Parameter Function	Range	Default	Description
				2: off thread trimming defense mode 3: Reserved
P122	Timing off thread trimming defense mode, before trimming back tack action	0-1439	1000	A needle before the needle parameter values greater the distance the greater the cut line
P123	Cut the thread mode, trimming back tack during operation timing	0-100	0	
P125	Knee by inductor value AD 1	0-1023	25	Effect lifter effect

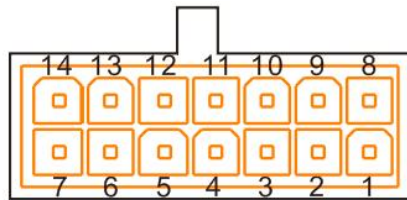
3 Error Code List

Error Code	Problem	Strategies
E1	Power Module is faulty. Abnormal over current or voltage. Resistor is damaged or F1 fuse is blown.	System will be shut down until the power resets on. Please check the power board in detail.
E2	1) When power on, detected main voltage too low 2) Connect the wrong voltage, too low.	Moto and machine will be shutting down. Please check the AC power. (Too low) Please check the main pc board.
E3	Operation Box linked to CPU interface had communication error.	Motor and machine will be shutting down. Please check the operation box.
E5	The connection of the Foot Pedal error	Motor and machine will be shutting down. Please check the connection of the Foot Pedal or the problem of it
E7	a) Bad connection at the motor connector. b) Machine locked or object stuck in the motor pulley. c) Sewing material is too thick. d) Module output is abnormal.	Head rotation motor handwheel see if stuck. As the first rule nose stuck mechanical failure. As normal rotation, check the motor and motor encoder connector power cord connector is loose. Please correct if loose. As good contact, check the power supply voltage is abnormal or speed is set too high. If yes, please adjust. As normal, replace the control box and inform the manufacturer.
E8	Manual Back-Tacking lasts for 15 sec.	Reverse stitching solenoid pull too long, you can restart the product. If the product or reported after the restart E-08, check the manual back tack switch is damaged.
E09 E11	Positioning signal error	Power off the system, check the motor encoder interface is loose or fall off, it was back to normal after restarting the system. If it still does not work, replace the motor and inform the manufacturer
E14	Encoder signal error	Power off the system, check the motor encoder interface is loose or fall off, it was back to normal after restarting the system. If it still does not work, replace the motor and inform the manufacturer.
E15	Power module abnormal over-current protection	Power off the system, then on again. If it still does not work, replace the control box and inform the manufacturer.

E17	Head protection switch is not in the correct position	Power off the system and check whether the nose open, ball switch control box whether displaced or damaged.
E20	Power motor failed to start	Power off the system, check the motor encoder interface and motor power connector is loose or fall off, it was back to normal after restarting the system. If it still does not work, replace the control box and inform the manufacturer.
oil	Sewing machine oil is too low	Turn off the power and check the oil pan sewing machine oil is too low, after the oil fill reboot the system. If it still does not work, replace the oil level sensor and inform the manufacturer.

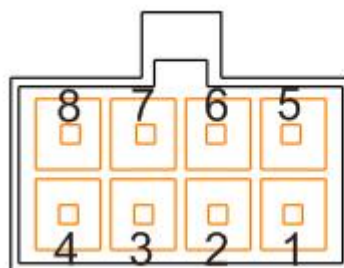
4. Port Outline Diagram

4.1 14P function port table illustration



- ① Trimming electromagnet: 1、8
- ② Wiper/clamp solenoid: 2、9
- ③ Loose wire electromagnet: 3、10
- ④ 5V sewing machine lamp: 4、11
- ⑤ Manual backstitch: 5、12
- ⑥ Backstich solenoid: 6、13
- ⑦ Needle switch: 7、14

8P function port table illustration



- ① The level of induction: 5(+5V)、
6 (signal ground)、2 (Induction signal)
- ② Foot pressure sensing: 1(+5V)、
7 (signal ground)、3 (Induction signal)
- ③ Foot pressure electromagnet: 4、8

4.2 Port Name

