

△Safety Instruction

- Users are required to read the operation manual completely and carefully before installation or operation.
- All the instruction marked with sign **△** must be observed or executed; otherwise, bodily injuries might occur.
- The product should be installed and pre-operated by well trained persons.
- For perfect operation and safety, it is prohibited that using extension cable with multi-outlet for power connection.
- 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.
- Don't operate in direct sun light, outdoors area and where the room temperature is over 45°C or below 5°C.
- Please avoid operating near the heater at dew area or at the humidity below 30% or above 95%.
- Don't operate in area with heavy dust, corrosive substance or volatile gas.
- Avoid power cord being applied by heavy objects or excessive force, or over bend.
- The earth wire of power cord must be connected to the system ground of the production plant by proper size of conduction and terminals. This connection should be fixed permanently.
- All the moving portions must be prevented to be exposed by the parts provided.
- Turning on the machine in the first time, operate the sewing machine at low speed and check the correct rotation direction.
- Turn off the power before the following operation:
 - Connecting or disconnecting any connectors on the control box or motor.
 - Threading needle.
 - Raising the machine head.
 - Repairing or doing any mechanical adjustment.
 - Machines idling.
- Repairs and high level maintenance work should only be carried out by electronic technicians with appropriate training.
- All the spare parts for repair must be provided or approved by the manufacturer.
- 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:

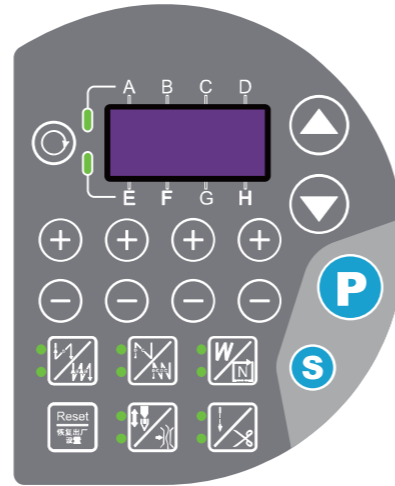
Any trouble found within warranty period under normal operation, it will be repaired free of charge. However, maintenance cost will be charged in the following cases even if within warranty period:

- 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.
- 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.
- 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 Operation Panel

1.1 Operation Panel diagram



2 Parameter definition

2.1 User parameter (turn on the machine longpress P key 3 sec to enter)

No.	Function parameter	Range	Default	Description
P01	Maximum Sewing Speed (r/S)	200-5000	3500	Maximum sewing speed setting
P02	Speed Curve Adjustment (%)	10-100	80	The speed controller climbing slope setting. The large of slope value = the fast of the speed. The small of slope value = the slow of the speed.
P03	Needle UP / DOWN Selection	DN/UP	DN	UP: Needle Stops at Up Position DN: Needle Stops at Down Position
P04	Start Back-Tacking Speed(r/S)	200-3200	1800	Speed setting of Front-end back tacking (start back tacking)
P05	End Back-Tacking Speed(r/S)	200-3200	1800	Speed setting of rear-end back tacking (End back tacking)
P06	Bar-Tacking Speed (r/S)	200-3200	1800	Speed setting of Bar-tacking
P07	Soft Start Speed (r/S)	200-4000	800	Soft Start Speed Adjustment
P08	Stitch Numbers for Soft Start (SLS)	0-99	1	Soft Start Stitches Setting (one unit = half stitch)
P09	Automatic Constant-Stitch Sewing Speed (r/S)	200-4000	3500	Constant-Stitch sewing speed [034.SMP] is set at A(or when AUTO signal is active)

1.2 Keys illustrations

Name	Key	Description
Enter to parameter area function key	P	1. Under the normal mode press P key enter to user parameter setting mode 2. In the shut-off condition, press P to turn on the machine enter to the technician parameter mode.
Parameter check and save key	S	To check and save the parameter item contents: after select parameter item then press this key can check and modify operation, after modified the parameter value press this key to exit and save the value.
Up adjustment key	+	1. In the parameter selection area parameter item increment key 2. In the parameter contents area setting value increment key
Down adjustment key	-	1. In the parameter selection area parameter item decrement key 2. In the parameter contents area setting value decrement key
Acceleration speed	▲	If click, it will acceleration speed
Deceleration speed	▼	If click, it will deceleration speed.
Parameter display shift key	○	If click, shift ABCD section or EFGH section windows and stitches setting.
Start back-tacking mode shift	↺	If click, shift start back-tacking (A,B section) once, start back-tacking (A,B section) twice or close.
End back-tacking mode shift	↻	If click, shift end back-tacking (C,D section) once, end back-tacking (C,D section) twice or close.
W seam / multisection seam	W	If click, shift to W seam mode or multi section constant sewing mode
Free sewing / trimming	↻	If long-press, shift to auto trimming action. (ON = LED ON/ OFF = LED OFF)
Up down needle position / clamp	↕	If click, shift needle position after sewing. (up position = LED ON/ down position / LED OFF) If long-press, shift to auto clamp action (ON = LED ON / OFF = LED OFF)
Restore factory setting	Reset	Long press 2 sec restore factory setting

No.	Function parameter	Range	Default	Description
P10	Automatic End Back-Tacking Sewing after constant sewing (Can invalidate the stitch compensation function)	ON/OFF	ON	ON: It will automatic execute end back-tacking action after finish last section of constant sewing. Note: if under any sewing mode, invalidate for stitch compensation function. OFF: It can't automatic execute end back-tacking function after finish last section of constant sewing. You should forward step pedal or full heeling the pedal.
P11	Function Mode Selection when manually push Back-Tacking	J/B	J	Manually push Back-Tacking switch action: J: JUKI Mode(During sewing or stop sewing both have this action) B: BROTHER Mode (Only acts during sewing)
P12	Start Back-Tacking Mode Selection	A/M	A	Start Back-Tacking, reverse solenoid action: 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: Soft start function is turn on. OFF: Soft start function is turn off.
P15	Stitch Compensation Mode	0-2	2	0: Fill half needle, 1: Fill a needle 2: Continuous half needle;
P16	First needle speed of soft start	200-4000	600	
P18	Start back tacking compensation 1	0-200	128	0-200 The action gradually delay
P19	Start back tacking compensation 2	0-200	148	0-200 The action gradually delay
P20	End Back-Tacking Mode Selection	1	1	1: Pedal full heeling ,it will automatic execute end Back-Tacking
P21	The voltage of step prior to the pedal	30-1000	520	
P22	The voltage of half step prior to pedal	30-1000	480	
P23	The voltage of half heeling to pedal	30-1000	240	
P24	The voltage of reversing pedal	30-500	130	
P25	Stitch compensation for End Back-Tacking 3	0-200	128	0-200 The action gradually delay
P26	Stitch compensation for End Back-Tacking 4	0-200	148	0-200 The action gradually delay
P28	Bar-tacking sewing Mode Selection	A-M	A	Bar-Tacking, reverse solenoid action: A: One shot to pedal, it will automatic execute Bar-Tacking. M: Pedal-controlled and motor can stop arbitrarily
P29	Brake pressure after trimming	1-50	30	

P32	Stitch compensation for Bar-Tacking 5	0-200	128	0-200 The action gradually delay
P33	Stitch compensation for Bar-Tacking 6	0-200	148	0-200 The action gradually delay
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
P37	Wiper Function Selection (Pressure setting of the Thread Clamp Device)	0-11	8	0: No Action 1: Wiper action 2-11: Clamp action, the action pressure gradually increased
P38	Trimmer Output Function Selection	ON/OFF	ON	ON: Trimmer Valid OFF: Trimmer Invalid
P41	Display the sewing finished quantity	0-9999	0	Counting the finished-sewing quantity
P42	Information display	N01-N07	N01	N01 Control Box Version No. N02 Panel Version No. N03 Rotational Speed N04 Pedal AD N05 Up Position Angle N06 Down Position Angle N07 Busbar Voltage AD
P43	Setting Direction of Motor Rotation (Clockwise/ Counter Clockwise)	CCW/CW	CCW	CW : Clockwise CCW : Counter Clockwise

3.2 Technician parameter contents list (Press P key to turn on the machine access)

No.	Function Parameter	Range	Default	Description
P44	Brake efforts	1-50	25	Adjustment of efforts while machine stop
P46	Inversion of the needle angle of choice after trimming	ON/OFF	OFF	ON: motor automatic running after trimming(needle angle decided by the setting of [P47.TR8] OFF: inaction
P47	Adjustment of reverse angles after trimming	50-200	160	Reverse running is subject to the adjustment of needle angle after trimming
P48	low(positioning)speed (r/S)	100-500	210	Setting positioning speed
P49	Trimming speed (r/S)	100-500	250	Adjustment of motor running speed while trimming proceeding
P54	Trimming time (ms)	10-990	240	Setting time trimming sequence required
P56	Automatically find UP position	0-2	1	0: Never look for needle up position 1: Always look for needle up position 2: If in the needle up position, do not look for the position again

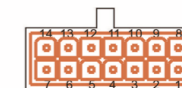
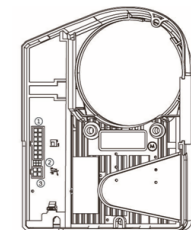
P58	Up Position Adjustment	0-1799	1125	Needle stops ahead of time with value decrease; Needle delayed stopping with value increase
P59	Down Position Adjustment	0-1799	225	Needle stops ahead of time with value decrease; Needle delayed stopping with value increase
P60	Testing Speed (r/s)	100-4000	2000	Testing speed setting
P61	Testing A	ON/OFF	OFF	After setting A, continuous running at the speed of [p60.TV]
P62	Testing B	ON/OFF	OFF	Option of Testing B, after setting press [p60.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 [p60.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	Stopping time of Testing B and C	1-250	20	Setting time of Testing B and C
P66	Machine protection switch Testing	0-2	1	0: Disable 1: Testing zero signal 2: Testing positive signal
P72	UP needle position adjustment		0	
P73	DOWN needle position adjustment		0	
P76	The time of backstitch full output	10-990	200	The time of backstitch full output when backstitch starts.
P78	Starting clip angle of thread clamp	10-150	100	Positioning angle when start clipping
P79	Stopping clip angle of thread clamp	160-359	330	Positioning angle when finish clipping
P80	Feeding angle of thread trimming	5-359	18	Feeding angle of thread trimming setting(Down position as 0°)
P81	Torque angle of thread trimming	5-359	110	Torque angle of thread trimming setting(Down position as 0°)
P82	Feeder back angle of thread trimming	5-359	175	Feeder back angle of thread trimming setting Down position as 0°)
P84	Starting torque angle of Thick material machine	0-359	9	
P85	Stopping torque angle of Thick material machine	0-359	57	
P92	Encoder start angle			Press cramping key to read the starting angle encoder. Don't change the factory settings. Freely change will lead to the control box, motor abnormal or damaged

3 Error Code List

No.	Problem	STATUS/ MEASUREMENT
E01	1) Power ON, the main voltage detection is too high 2) When the supply voltage is too high	Turn off the system power supply, and detect whether the supply voltage is correct. (Or exceed the rated voltage specified in use.) If correct, please replace the control box and inform the factory
E02	1) Power ON, the main voltage detection is too low 2) When the supply voltage is too low	Turn off the system power supply, and detect whether the supply voltage is correct. (Or under the rated voltage specified in use.) If correct, please replace the control box and inform the factory
E03	Operation panel and CPU transmission communication exception	Turn off the system power, check if the operation panel interface is loose If contact is good, please change the operation panel. If it is not operated, the control box is damaged, please change
E05	Abnormal contact of speed controller (pedal)	Off the system power supply, check if the connector is loose or fall off. Make the connector normal situation and restart the system. If it still can not work normally, please replace the speed controller and notify the manufacturer.
E07	a) Abnorma l contact of motor plug b) Lock head or motor belt foreign body involved in c) The material is too thick, the motor torque is not enough. d) Output exception of module driven	Rotating the hand wheel of head motor and check if stuck. If it is stuck, there is no mechanical failure of motor head. If the rotation is normal, check if the motor encoder connector and motor power cable joints are loose or not. If any connector is loose, fix it. If connection is good ,check if the supply voltage of the power is too high. If it is too high, adjust it. If it is normal, please replace the control box and notify the manufacturer.
E08	Continuous manual pour over 15 seconds	Restart the control box.
E10	Electromagnet over current protection	Power off the system. Check the solenoid (solenoid valve) connection line or if the solenoid (solenoid valve) is damaged.
E09	Abnormal locating signal	Power off the system. Check if the motor encoder interface is loose or fall off. Fix it and restart system. If it still can not work normally, please replace the motor and notify the manufacturer.
E14	Abnormal Encoder signal	Power off the system. Check if the encoder interface is loose or fall off. Fix it and restart system. If it still can not work

4 Connector diagram
4.1 Each port illustration

- Functional interface
- Programmer interface
- Pedal interface



- Trimmer : 1, 8
- Wiper/Thread clamp : 2, 9
- LED/SV : 4, 11
- Manual back tack : 5, 12
- Electromagnet of backstitch : 6, 13
- Fill needle : 7, 14