

Operation Instructions of the Full-automatic High Suction All-in-one Machine V1.2

1. Safety Precautions

- Before use, please read carefully both the technical data and the operation instructions of the corresponding sewing machine for proper operation.
- 1.1 (1) Power supply voltage and working frequency: please follow the specification of the motor and the nameplate of control cabinet.
- (2) Electromagnetic wave interference: please keep the machine away from the high frequency magnetic wave machine or radio transmitters, etc., in order to avoid malfunctions caused by the electromagnetic interference to the driving gear.
- (3) GND: To prevent noise interference or the electric leakage accident, please ensure proper earthing (including the sewing machine, motor, control box, and locator).
- 1.2 Before tearing down the motor or control box, make sure the plug is not charged; to avoid the dangerous high voltage in the control box, only more than 1 minute after the power is off can the cover be opened.
- 1.3 To guarantee personal safety, make sure the power is off when repairing the machinery or needling work is on.
- 1.4 ⚠ This symbol signifies that in the machine installation any mistakes could cause harm to human body or damage to the machine.
- ⚡ This symbol, which can be seen in places of electrical dangers, is a warning of such dangers as high voltage.
- 1.5 The warranty period will be one year if the machine is working under normal condition and not mistakenly operated.

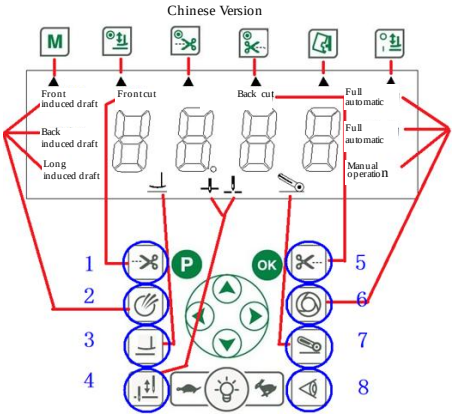
2. System Parameter Table:

Serial number	Function parameter	Default	Range	Step	Parameter specification	Grade
1	Operation Mode Selection	0	0~2	1	0: semi-automatic 1: manual 2: Full-automatic (valid for version 3S)	I
2	Front cut needle count	0	0~50	1	0: front cut invalid 1~50: set pin number for back cut after the front cut sensor	I
3	Back cut needle count	3	0~50	1	0: back cut invalid 1: needle initiation after the front cut sensor 2~50: set pin number for back cut after the back cut sensor set count-1	I
4	Front suction selection	1	0~1	1	0: no front suction 1: front suction on	I
5	Back suction selection	1	0~1	1	0: no back suction 1: back suction on	I
6	Long suction selection	0	0,100,150,200,250, and on	/	0: long suction invalid 100~250: interval suction (display *10) on: always valid	I
7	Holding time for back suction or interval suction	500	100~5000(ms)	100		I
13	Front cut photoelectric strength	70	0~100	1		II
14	Front cut sensitivity	40	0~100	1		II
15	Back cut photoelectric strength	70	0~100	1		II
16	Back cut sensitivity	40	0~100	1		II
19	Presser foot function	1	0~1	1	0: invalid 1: valid	I
20	Presser foot lifting function selection	1	1~3	1	1: Automatic presser feet of cloth 2: Automatic presser after cutting 3: On automatic presser foot cloth and after cutting	I (TP-3)
21	Needle position selection	0	0~1	1	0: upper needle position 1: lower needle position	I
22	Power on to find the above needle position	0	0~1	1	0: invalid 1: valid	I
23	Needle bar lamp brightness	3	0~5	1	0: no brightness 5: high brightness	I
25	Presser foot safety switch	1	0~2	1	0: normally on 1: normally off 2: cancel	I
26	Bedplate safety switch	1	0~2	1	0: normally on 1: normally off 2: cancel	I
27	Safety switch delay time	2	0~5(s)	1	0: no delay	I
31	Automatic mop wheel function	0	0~1	1	0: invalid 1: valid	I
35	Back-step cut selection	1	0~1	1	0: invalid 1: valid	I
39	Small cloth seam selection	0	0~1	1	0: invalid 1: valid	I (TP-3)
40	Soft start pin number	0	0~9	1	0: no soft start 1~9: soft start pin number	I
41	Soft start speed	800	200~3000(rpm)	100	Soft start speed	I
42	Low-speed speed	300	200~400(rpm)	100	Minimum sewing speed	I
43	Front cut speed limit	3500	200~ P50 (rpm)	100	Front cut speed limit	I
44	Sewing speed	4000	200~ P50 (rpm)	100	Actual sewing speed setting	I
49	Restore to factory parameter	0	0~15	1	5: restore the current level factory parameters 8: restore the current level and sewing factory parameter set According to S button, select yes, then press the S key execution	I
50	maximum sewing speed	4500	300~6500(rpm)	100	Maximum sewing speed	II
52	Sensor interval	20	1~50	1		II
53	cutingCutting hold time	50	10~1000(ms)	5		II
54	Presser foot lift time	500	100~2000(ms)	10		II
55	Presser foot confirmation time	80	10~300(ms)	10		II
56	pPresser foot electromagnet full pressure time	150	0~800(ms)	10	output time of total pressure of pressor foot lifting	II
57	Presser foot electromagnet duty ratio	40	0~100%	1	output duty cycle of pressor foot lifting forced shut-down after hold time of pressor foot lifting	II
58	Presser foot electromagnet hold time	12	1~60(s)	1	output duty cycle of pressor foot lifting	II
60	Pedal curve selection	0	0~2	1	0: normal 1: slow down increasingly 2: speed up increasingly	II
61	Pedal neutral position	0	-15~15	1	Trimming the neutral position of the pedal	II
62	Start pedal stroke	25	10~50	1	Pedal position upon start Travel relative to medium pedal	II
63	Accelerate pedal stroke	50	10~100	1	Pedal position upon start acceleration Travel relative to medium pedal	II
64	High-speed pedal stroke	110	10~150	1	Pedal position at highest rotating speed Travel relative to medium pedal	II
65	Presser foot up stroke	-30	-100~-10	1	Pedal position upon pedal lift Travel relative to medium pedal	II
66	Presser foot down stroke	10	5~50	1	Pedal travel from presser foot lowering position to neutral position Travel relative to medium pedal	II
67	Back step stroke1	-30	-100~-10	1		II
68	Back step stroke2	-60	-100~-10	1		II
69	Lower stop needle angle	175	120~240 (degrees)	1	To adjust down needle position	II
71	Stop delay pin number	0	0~100 (stitches)	1		II
75	Nose benchmark position	120	0~240	1	Needle position adjustment	II
76	Raab round magnet full pressure time	150	0~800(ms)	10		II
77	Raab round magnet duty ratio	25	0~100%	1		II
78	Raab round magnet hold time	12	1~60(s)	1		II
79	Medium Raab initiate needle	15	0~50 (stitches)	1		II
80	Rear Raab initiate needle	12	0~50 (stitches)	1		II
81	Raab closed pin number	10	0~50 (stitches)	1		II
90	Chinese/English selection	0	0~1	1	0: Chinese 1: English	II

3. System Monitoring State

In the default mode of the operation panel, normally, when the p key combined with  mode key are pressed, the monitoring state will be activated. Then, pressing the up or down arrow key will make you known to the relevant monitoring parameter. Enter the System monitoring state. Press the + or - key to choose the item you want to view and key S to enter or return the selected item. If you want to exit the monitoring interface, press the P key.

Display No.	Project Name	Unit		Display No.	Project Name	Unit
U1	Motor speed	rpm		U6	Initial motor angle	degrees
U2	Motor current	0.01A		D1	DSP version	
U3	Busbar voltage	V		D2	DSP model	
U4	Pedal voltage	0.01V		H1	HMI version	
U5	Nose mechanical angle	Degrees		H2	HMI model	



4. Setting of hotkeys:

As shown in the figure above, there are 8 hotkeys available, marked by blue circle;

Hotkey 1: Front cut hotkey set

Press this key under standby mode to enter the setting interface, and prohibit motor running; the screen shows “FT04” which means the number of front cut needle is 4. Now you can press left and right key (same with original design, right and left key to change parameter, up and down key to change serial number, similarly hereinafter) to change the number of needle, then press “OK” key to save, and “P” to go back to standby mode. At this moment, pressing “hotkey 2” can change to the back cut needle setting.

On the parameter interface, pressing this hotkey will immediately jump to the part of number of P2 front cut needle.

Hotkey 2: induced draft hotkey

Press this key in standby state to enter the setting interface, and prohibit motor running; the screen shows “FE01” which means front induced draft is effective. Change the setting through left and right key, if set 0 as ineffective, when it is ineffective, the left side of LCD doesn't display “front induced draft” icon.

Press this hotkey again, the screen shows “bF01” which indicates back induced draft is effective. Change the setting through left and right key, if set 0 as ineffective, when it is ineffective, the left side of LCD doesn't display “back induced draft” icon. And press again, the screen will display “LF00”. Press left and right key to change the value to 0, 10, 15, 20, 25, and on.

In parameter interface, pressing this hotkey can jump to P4 front induced draft choose immediately, and if continue, it will change circularly between P4, P5 and P6.

Hotkey 3: Presser foot set

If the icon of presser foot lift is effective, the enable presser foot lift is effective (P19=1). If no icon, no enable presser foot lift (P19=0).

Hotkey 4: Needle stop position choosing

Press this key, the position of needle can be changed between up-stop needle and down-stop needle, and take into effective immediately.

Hotkey 5: Back cut hotkey setting

Press this key in standby mode to enter the setting interface, and prohibit motor running; the screen shows “bT01” which means back cut cuts line immediately. Now you can press left and right key to change the needle number value, then press “OK” key to save, and “P” to go back to standby mode. Press “hotkey 1” can change to front cut needle number setting.

In parameter mode, pressing this key jump to P3 back cut neele number setting immediately.

Note: Setting of hotkey 1 and 2: due to the use of four keys: up, down, left, and right, so it can't be similar as platform wagon operation box, the number of needle is corresponded with up and down key. Therefore, it adopts hotkeys to change parameters. It will immediately show the corresponding needle number. But the left and right key can't change the number of needle immediately.

When number of the front and back cut needle is 0, the front and back cut are ineffective, but the icons of front and back cut are still displayed.

Hotkey 6: Model setting

In 2S mode, pressing this key can change between the modes of semi-automation and automation, and take into effect immediately.

In 3S mode, pressing this key can change between the modes of semi-automation, full manual and full automation, and take into effect immediately.

Hotkey 7: Cloth-pulling wheels setting

Press this key in standby state and change the function icon state of cloth-pulling wheels. If the icon is on, the P31=1 cloth-pulling wheels are effective, or else they are not effective.

Pressing this key in parameter interface can change circularly between (P79) cloth-pulling starting needle, (P80) back cloth-pulling starting needle and (P81) cloth-pulling close needle.

Hotkey 8: Photoelectric sensor

Pressing this key in standby interface can adjust to achieve the real value of photoelectric intensity of front and back sensor. Its range is 0-99. When shows “FL95”, it indicates the intensity of front cut sensor is 95, nearly no obstacle. “bL96” indicates the intensity of back cut sensor is 96. If the sensor is blocked, we can see the intensity changes approach to 0.

Pressing this key in technical interface enables the change between intensity of P13 front cut photoelectric sensor and intensity of P16 back cut photoelectric sensor.

5. Failure code

Failure Indication	Failure:	Possible Causes	Checking Items and Handling
E011 E012 E013 E014	Electrical signal failure	Sensor signal failure in motor position	Whether the motor plug connects well. Whether electrical signal detection device is damaged Whether handwheel of the sewing machine is well installed.
E021 E023	Motor overload	Motor stalling Motor overload	Whether the motor plug connects well. Whether sewed material is thicker than that of the standard one. Whether current detection signal is normal
E101	Hardware drive failure	Abnormal current detection Driving device direct connection	Whether circuit for detecting system current works normally Whether drive device is damaged
E111 E112 E113	System voltage is too high	Actual voltage is higher Braking circuit fault Something wrong with voltage	Whether system inlet wire voltage is too high Whether braking resistor works normally Whether system voltage detection circuit works normally
E121 E122	System voltage is too low	Actual voltage is lower Something wrong with voltage	Whether system inlet wire voltage is too low Whether system voltage detection circuit works normally
E131	Current detection circuit malfunction	Abnormal current detection	Whether circuit for detecting system current works normally
E141	System data read/write failure	Abnormal system data reading/writing	Whether system data read circuit works normally Whether data chip is damaged
E201	Motor current is too large	Abnormal current detection Abnormal motor running	Whether circuit for detecting system current works normally Whether electrical signal is normal
E211 E212	Abnormal motor running	Abnormal motor running	Whether the motor plug connects well. Whether electrical signal is correct
E301	Operation box communicates not well	Loss of head operation box communication data	Whether operation box plug connects well Whether operation box is damaged
E302	Operation box saves wrong data	Operation box saves wrong data	Check whether storage chip of operation box is damaged
E403	Pedal zero position correction failure	Pedal zero position correction beyond the scope	Pedal damages or correcting when pedal is not in the stop state
E501	Bedplate safety switch failure		
E502	Presser foot safety switch failure		
E503	Space limitation error (Number of needle between two sensors must be smaller than certain value)		Check whether the material is stuck

- Note:** 1. Sewing motion abnormal (Orientation abnormal, and electromagnet abnormal); enter the control interface to check whether the machine model is right.
2. When occurs failure E501: Check whether switch detection is normal; change P-28 technical data for temporary use.
3. If the above failure can't be ruled out according to failure detection items, please ask for technical support.

6. Accessories included

Serial number	Product name	Qty:	Specifications	Confirmation	Remark
1	Electric cabinet	1			
2	Ball rod string	1			
3	Foot Plates	1	PL-302		Including stents
4	Pedal set screw	3	M5 ×25		Hex flange tapping screws
5	Specification	1			