

# Industrial High Speed Overlock Sewing Machine Auto-trimming System

## 工业高速包缝机 自动剪线系统

### User Manual

### 用户手册

为了安全地使用本产品，请您在使用前仔细阅读本说明书。

**In order to operate this product safely,  
please make sure to read this manual carefully before use.**

# Foreword

Welcome to use the company's products, the right investment choice for the clothing industry! This manual is a new reference manual of the "suction line" product developed by our company. Please read this manual carefully to make better use of our products!

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## ● Please read the following requirements before reading this instruction:

1. The user must be reliably grounded before use (ground resistance  $<4 \Omega$ ) to ensure personal safety!
2. Non-professionals should not disassemble the control box;
3. Please use at room temperature  $5^{\circ}\text{C}\sim 45^{\circ}\text{C}$ ;
4. Please operate in 30% ~ 90% relatively humid environment;
5. 220V electric control: rated voltage  $220\text{V} \pm 10\%$ , frequency 50 / 60HZ;  
110V electrical control: rated voltage  $110\text{V} \pm 10\%$ , frequency 50 / 60HZ;  
Please input the corresponding voltage according to the corresponding model.
6. Use a soft cotton cloth to clean the upper and lower light eyes before daily use;

## ● Safety instructions:

1. Please do not put your feet on the foot pedal when the electric control power is on;
2. Please install and debug this product for professionals;
3. Never open the control box while power is on;
4. Turn off the power when changing needles, threading or changing the bottom thread;
5. Please turn off the power when installing, disassembling and repairing;
6. Turn off the power when lifting the sewing machine;
7. Please use this product away from high-frequency electromagnetic waves, radio wave transmitters, etc., so as to prevent the electromagnetic waves generated from interfering with the servo driver and causing incorrect action.

## ● Warranty policy:

1. Any quality problem except man-made damage during the warranty period can be repaired free of charge;
2. Disassembly without the company's consent, damage caused by modification will not be given warranty;
3. If there is any problem that cannot be solved, please contact the company;
4. The company has the final interpretation of this manual.

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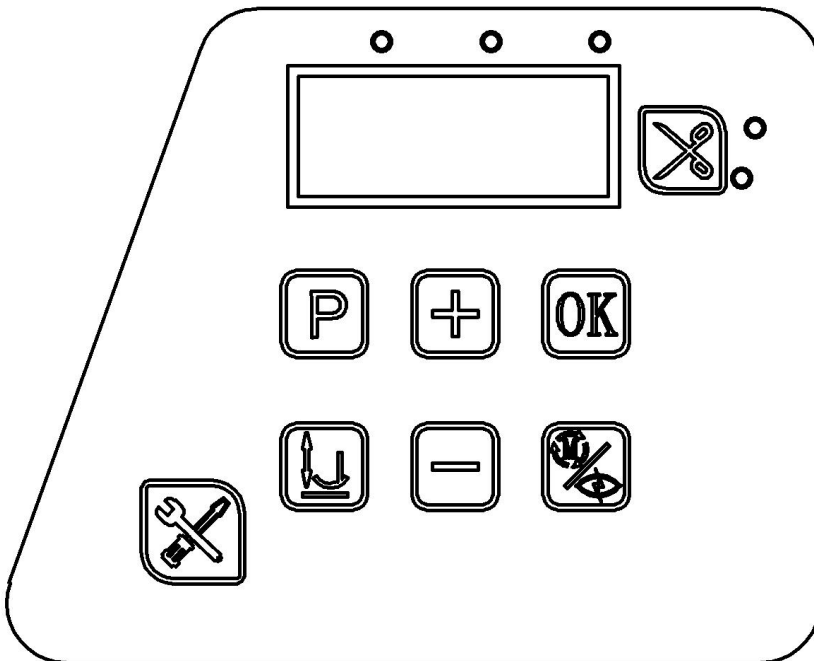
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**1: Introduction to common operations on the display**



Serial number	Icon	Function description
1		<p>Key combination:  Short press: switch the current sewing mode; "N--0 / 1/2" is displayed, one-to-one corresponding to full manual, free sewing, semi-automatic.</p> <p>Long press: enter the sensitivity adjustment of light eye, short press () again, select thin material "C--S" or constant the scale type "C--H", after the selection is completed, <b>you must press and hold the () key for automatic dimming. "SUC" will be displayed when auto adjustment is successful.</b></p> <p>Password interface: right shift key;</p>
3		<p>Presser foot function keys:  Short press: "F--0 / 1/2/3" is displayed, corresponding to closing, lifting forward, lifting backward, lifting the presser foot forward or backward;  Long press: enter cloth recognition mode;  It shows that "F--" is in the automatic calibration state, you need to wait 4 seconds to 10 seconds;  Display "F--" waiting for user release status;  "F ---" is displayed waiting for the user to move, and "SUC" is displayed when the recognition is successful. For the failure, see the optical eye fault code table.</p> <p>Password interface: left shift key;</p>
4		<p>Scissor function key: Select the scissors mode when sewing. Press continuously to select the front cutting thread, the rear cutting thread, the front and rear cutting thread, and close. Front and rear trimming status is indicated by 2 indicators;  Long press: enter trimming parameter adjustment;</p>
9		<p>Menu:  Short press: enter and exit user parameters;  Long press: enter system parameters (password required);</p>
10		<p>Enter:  Short press: parameter confirmation key;  Long press: switch on / off the sewing lamp;</p>










11		Value adjustment key: add key when modifying data;	
12		Value adjustment key: Minus key when modifying data;	
15		<p>Maintenance key: When the machine needs to be adjusted if it is abnormal, press this key briefly or turn off the power for maintenance;</p> <p>Short press: enter maintenance mode, display "rEPR", short press again to exit maintenance mode;</p> <p><b>Long press: Enter the factory reset parameter interface, display "rES.", Short press "OK" to confirm the factory reset, short press "P" to cancel the factory reset;</b></p>	
16	<b>F-SENSOR</b>	Front light indicator	The F-SENSOR light is on when the front light is blocked by fabric, otherwise it is off.
17	<b>M-SENSOR</b>	Medium light indicator	The M-SENSOR light is on when the middle light is blocked by fabric, otherwise the light is off.
18	<b>B-SENSOR</b>	Rear light indicator	The B-SENSOR light is on when the back light is blocked by fabric, otherwise it is off.

**Light eye fault code table:**

Light eye state	F-SENSOR	M-SENSOR	B-SENSOR
<b>Malfunction</b>	<b>F</b>	<b>∩</b>	<b>B</b>
<b>Normal</b>	-	-	-

For example: the digital tube of the middle-light eye failure should show: E-∩-

## 2: Enter parameters and modify parameters

System parameter entering analysis: long press (  ) key for more than 1 second to enter the "system parameter" list (password required). The (  ) and (  ) keys will select the parameter number, press (  ) to return to the main interface, and press (  ) to enter the parameter value. After entering the parameter value, press (  ) or (  ) to modify the current parameter value. After the modification is complete, you need to press the (  ) key again to save the parameter. The (  ) key exits without saving the current parameter.

## 3: Operation parameter description table

### 3.1 Technician system parameter list:

N0.	Instruction	Defaults	Range	Parameter Description
S02	Number of front light detection pins	20	1~50	Set the number of stitches between two light eyes
S03	Number of stitches for front trimming delay	4	0~50	Number of stitches detected by mid-light eye
S04	Post trimming delay stitches	0	0~50	Number of stitches for delayed thread trimming after leaving the rear eye
S05	Number of front suction opening needles	2	1~50	After the front light eye senses, inhale from the first needle
S06	Number of front inspiratory closure needles	14	1~50	After opening, count a few stitches and turn off the inspiration

S07	Post-inspiratory opening needles	2	1~50	After leaving the eye, the first few needles start to inhale
S08	Post-inspiratory closure delay	200	50~5000	After leaving the light eye, turn off the inspiration after counting a few milliseconds(ms)
S12	Number of parking delay stitches	2	1~99	How many stitches will stop automatically after cutting the thread
S13	Middle inspiratory opening needles	50	1~247	How many needles to inhale after leaving the front light eye
S14	Middle inspiratory closing needles	20	1~100	Middle inspiratory closing needles
S15	Post-cut eye delay stitches	25	1~100	After leaving the light in eyes for how many needle not detected the third eye light signal to begin to cut the line
S17	Front light eye emission intensity	-	50~950	In order to adapt to different fabrics, set the penetration strength of the front light. The larger the value, the stronger the penetrating power.
S18	Middle light eye emission intensity	-	50~950	In order to adapt to different fabrics, set the penetration strength of the Medium light. The larger the value, the stronger the penetrating power.
S19	Pre-lifter retention time	220	100~2000	Lifting foot duration (ms)
S21	Presser foot protection time	4	1~120	How long does the manual presser lift after closing (seconds)
S22	Presser foot protection time	20	20~800	Presser foot time (ms)
S23	Continuous feed suction cutting line	0	0~1	0: Off 1: On

S24	Manual trimmer switch	1	0~1	0: Manual thread trimming without cutting when the motor is running, 1: can cut
S25	Safety switch	1	0~1	0: off 1: open
S26	Scissors retention time	35	10~1000	Cutter action time (basically no adjustment required)(ms)
S27	Interface recovery time	20	5~99	How long does the control panel jump back to the main interface after entering the menu
S31	Presser foot full time	180	10~990	Time when the presser foot works at full power(ms)
S32	Presser foot full power	100	20~100%	presser foot start action, instantaneous power output
S33	Presser foot keep power	39	10~90%	presser foot lift after maintain power(no more than 50%)
S34	Back eye light emission intensity	-	50~950	In order to adapt to different fabric setting back light eye through cloth strength, the greater the value the stronger air-penetration
S35	Back cut light eyes	1	0~1	0: close 1: open
S38	Maximum speed lock	5000	300~8000	Limit the maximum adjustable speed of the motor
S39	Restore factory parameters	0	0~1	Adjusted to 1 and long press OK key to reset valid
S58	Front light eye sensitivity		1000~4000	Front light eye threshold
S59	Middle light eye sensitivity		1000~4000	Middle light eye threshold
S60	Back eye light sensitivity		1000~4000	Back eye light eye threshold

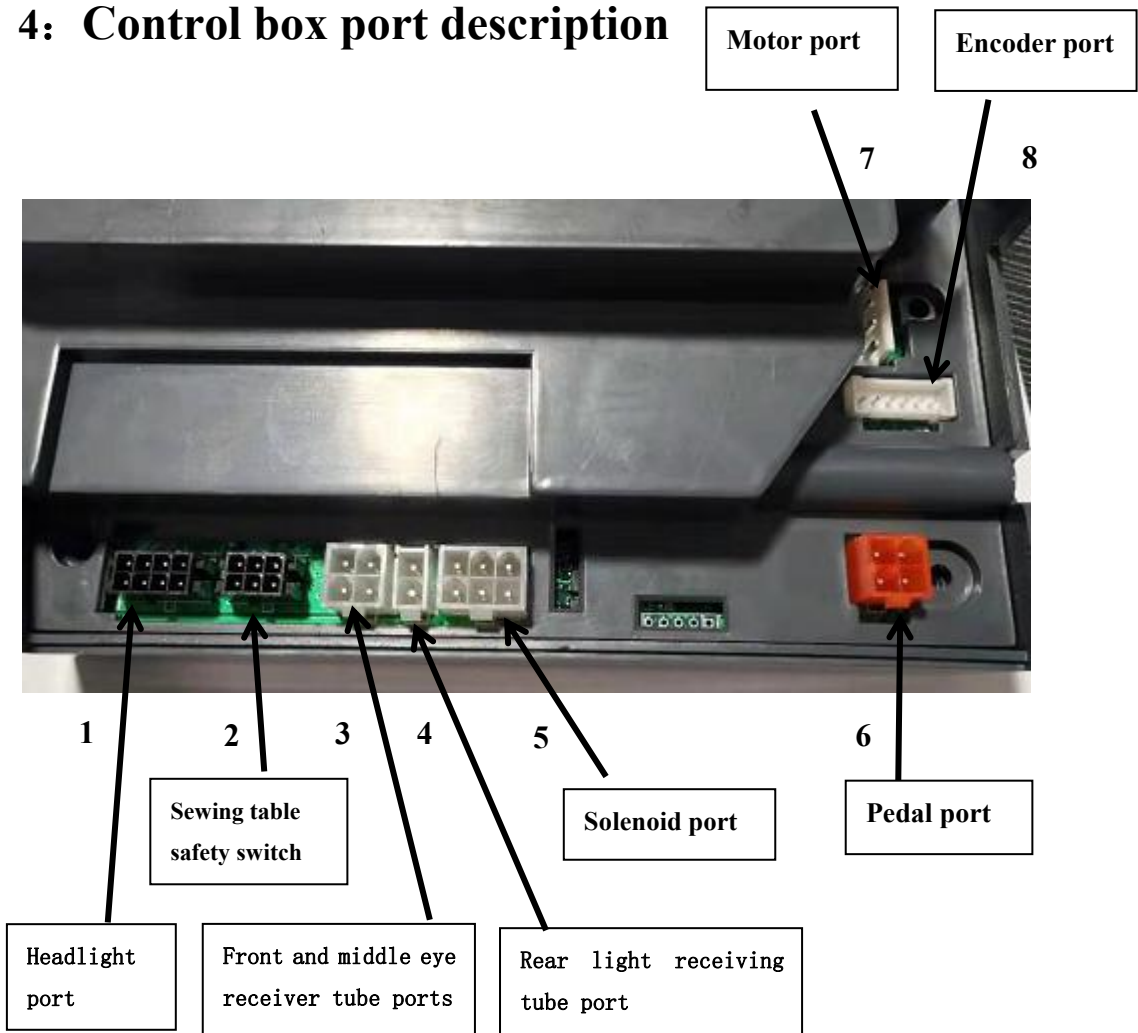


### 3.2 User parameter list ( press to enter )

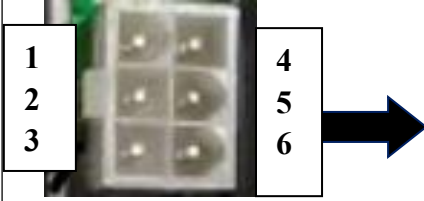
Serial number	Function	Defaults	Parameter range	Parameter Description
P-01	Operator schema	0	0~2	0: full manual 1: free sewing 2: semi-automatic
P-02	Infrared sensor switch	0	0~1	0: Off 1: On
P-03	Cutting line	3	0~3	0: Off 1: Front cutting line 2: Rear cutting line 3: Front and rear cutting line
P-04	Forward	3	0~3	0: Close 1: Inhale forward 2: Inhale backward 3: Inhale forward and backward
P-06	Presser foot	3	0~3	0:no presser foot 1:front presser foot 2:back presser foot 3:front and back presser foot
P-07	Start speed mode	1	0~1	0: Automatic 1: Foot pedal
P-08	Needle stop position	1	0~1	0: Upper needle position 1: Lower needle position
P-09	Automatic foot lift when parking	0	0~1	0: Off 1: On
P-10	Manual inhalation	1	0~1	0: Off 1: On
P-11	Sewing speed	5000	300~6500	
P-12	Maximum speed	5000	300~6500	
P-13	Work light brightness	2	0~2	0: off 1: weak light 2: strong light
P-15	Continuous stitching	0	0~1	0: Off 1: On
P-16	Semi-automatic constant speed cutting line	0	0~1	0: Off 1: On
P-17	Front presser foot	0	0~1	0: automatic mode 1: manual mode
P-18	Foot control trimming	1	0~1	0: Closed 1: Fully Manual
P-19	Medium suction	1	0~1	0: Off 1: On

P-20	Press the presser foot halfway	0	0~1	0: Off 1: On
P-21	Raise the presser foot after trimming	0	0~1	0: Off 1: On
P-22	Lift the presser foot after closing	0	0~1	0: Back pedal effective 1: Back pedal invalid
P-23	Free seam open	0	0~1	0: Off 1: On
P-24	Post-Cut eye delay detection	1	0~1	0: Off 1: On
P-25	Mesh pattern stitches	0	0-10	Adjust the appropriate number of stitches according to the size of the mesh
P-26	Running-in switch	0	0~1	0: Off 1: On
P-27	Running-in time	8	8~30	Time unit: 0.5 seconds
P-28	Run-in pause time	2	2~20	Time unit: 0.5 seconds
P-29	Electronic version	V1.XX		
P-30	Display version	V1.XX		
P-34	Thin material adjustment factor	80	60-90	Optical coefficient setting during thin material adjustment
P-35	Front light current data			
P-36	Middle light eye current data			
P-37	Back light eye current data			

## 4: Control box port description



The port number	The name of the device port
1	Headlight port
2	Connecting the sewing table safety switch
3	Front and middle eye receiver tube ports
4	Rear light receiving tube port

5	Solenoid port		1,4: Trimming solenoid
			2,5: Suction solenoid or solenoid valve
6	Pedal port		
7	Motor port		
8	Encoder port		

## 5: Fault code analysis

Error Code	Fault description	Fault reason	Solutions
ER-01	Needle stop signal error	<p>1: Poor contact of Hall wire during needle stop</p> <p>2: Reverse or demagnetize the permanent magnet on the hand wheel</p>	<p>1: Check the needle stop hall line</p> <p>2: Check whether the permanent magnet is installed</p> <p>3: Replace the hand wheel</p> <p>3: restart the machine</p>
ER-02	The signal of the speed controller is wrong	<p>1: didn't plug the speed controller in when the machine is on.</p> <p>2: the speed controller is plugged in at the wrong position.</p> <p>3: the speed controller is disconnected.</p> <p>4: the speed controller is broken</p>	<p>1: check the signal line of the speed controller</p> <p>2: change the speed controller</p> <p>3: change the controller</p>

ER-03	Motor signal error	<p>1: Bad plug contact</p> <p>2: There is a large deviation between the Hall and the rotor when the motor is installed</p> <p>3: Motor Hall is broken</p>	<p>1: Open the rubber cover on the motor to see if the motor rotor and stator are on the same plane through the hole, and ensure that the error does not exceed 1mm</p> <p>2: Replace the motor</p> <p>3: Replace the controller</p>
ER-04	Motor stalled	<p>1: The sewing machine is too heavy or blocked</p> <p>2: Motor overload</p> <p>3: The 4-wire drive line of the motor is not connected or plugged in</p>	<p>1: Check the motor 4P line</p> <p>2: Check if the sewing machine is too heavy</p> <p>3: Replace the controller</p>
ER-05	Hardware over current	<p>1: The sewing machine is too heavy or blocked</p> <p>2: Motor overload</p>	<p>1: Check if the sewing machine is too heavy</p> <p>2: Replace the controller</p> <p>3: restart the machine</p>
ER-07	Communication timeout	<p>1: poor connection of the display board to the motherboard cable</p> <p>2: The motherboard chip is damaged</p>	<p>1: poor connection of the display board to the motherboard cable</p> <p>2: The motherboard chip is damaged</p>
ER-11	Safety switch 1 is off	<p>1: The presser foot safety switch mechanism does not return to the correct position</p> <p>2: Poor contact of presser foot safety switch cable</p> <p>3: Hall element of safety switch for presser foot lift is damaged</p>	<p>1: Check if the presser foot safety switch connection cable is abnormal</p> <p>2: Check whether the magnet corresponding to the presser foot safety switch returns to the correct position</p> <p>3: Replace Hall components</p>
ER-09	Memory error	<p>1: No program is written or the program is missing</p> <p>2: Defective memory chip</p>	<p>1: re-procedure</p> <p>2: Replace 24C16 and detect peripheral circuits</p>