


Safety Instruction

1. Users are required to read the operation manual completely and carefully before installation or operation.
2. This product must be installed or operated by properly trained personnel. All power must be turned off during installation, and remember not to operate with power.
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 power supply cords to power sources, it is necessary to make sure that the power voltage matches the rated voltage $\pm 20\%$ indicated on the motor's name plate.
6. Do not 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. Do not 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

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. Key description

No.	Icon	Name	Function description
1		Function key	<ol style="list-style-type: none"> 1. In the normal mode interface, press it to enter the "User parameter setting" interface. 2. In the normal mode interface, long press it to enter the "Advanced parameter setting" interface. 3. In the parameter setting interface, press it to return to the main interface.
2		Setting parameter check and save	In the parameter setting interface, press it to save setting.
3		Parameter increase	Increase parameters / improve running speed
4		Parameter decrease	Decrease parameters / reduce running speed
5		Left key	Check the previous parameter / decrease the brightness of the LED light.
6		Right key	Check the next parameter / increase the brightness of the LED light.
7		Thread trimming	<p>Press it can switch thread trimming off, front trimming on, back trimming on, and front and back trimming on successively.</p> <p>Long press it to enter thread trimming setting interface.</p>
8		Mode selection	<p>If you click, the following 4 modes will be switched in a loop:</p> <ol style="list-style-type: none"> 1. Fully automatic: start-up is completed by full induction signal. 2. Free sewing 3. Semi-automatic: start the front induction signal + pedal to complete (synchronized with P-05 item). 4. Full manual: start-up is completed by pedal. <p>Long press it to enter mode setting interface.</p>
9		Auto-suction	<ol style="list-style-type: none"> 1. Press it can switch suction off, front suction on, back suction on, and front and back suction on successively. 2. Long press it to enter suction setting interface.
10		Presser foot lifting	<ol style="list-style-type: none"> 1. Press it can switch function off, front presser foot lifting, back presser foot lifting, and front and back presser foot lifting successively. 2. Long press it to enter presser foot lifting setting interface.
11		Sensor	<ol style="list-style-type: none"> 1. Press this key to check the real-time sensing value and current threshold of the sensor. 2. Long press it to enter sensor sensitivity setting interface.
12	Indicator light	<ol style="list-style-type: none"> ①F-SENSOR ②M-SENSOR ③B-SENSOR ④STATE 	<ol style="list-style-type: none"> 1. When the front sensor senses that there is cloth, the F-SENSOR green light is on, and it goes out when there is no cloth. 2. When the middle sensor senses that there is cloth, the green light of M-SENSOR is on, and it goes out when there is no cloth. 3. When the back sensor senses that there is cloth, the B-SENSOR green light is on, and it goes out when there is no cloth. 4. When the sewing machine is abnormal, the red light is on, and it is off when it is normal.

13	布料识别 Cloth Identification	Cloth identification	Long press in the main interface to enter the fabric recognition mode.
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2. Special function operation definition

No.	Function name	Function description
1	Reset	In the main interface, press "←" and "→" at the same time for 2 seconds to display "Restore Factory Settings".
2	Up position adjustment	Step 1: Long press the "P" to enter the "Advanced parameter setting" interface; Step 2: Adjust the parameters to item P-72; Step 3: Look at the direction of the handwheel, turn the handwheel clockwise to the upper position, and press the "S" to save the current value.
3	Down position adjustment	Step 1: Long press the "P" to enter the "Advanced parameter setting" interface; Step 2: Adjust the parameters to item P-73; Step 3: Look at the direction of the handwheel, turn the handwheel clockwise to the upper position, and press the "S" to save the current value.
4	Cloth identification mode	Step 1: Press and hold the cloth recognition button in the main interface to enter the cloth recognition mode interface; Step 2: After removing the cloth from the sensor, press "S"; Step 3: After selecting the fabric recognition mode, press "S"; the setting is complete. (There are prompts on the interface)
5	Main shaft zero angle setting	In the main interface, press "P" and "⊙" at the same time to enter the zero angle setting interface.
6	Piece counting function	In the main interface, press "✂" and "↑↓" at the same time to enter the piece counting interface.

3. System parameter setting definition

No	Function parameters	Range	Default	Description
P-01	Sewing speed(r/min)	200-6000	5000	
P-02	Needle stop positioning selection	0-1	0	0: Up needle position 1: Down needle position
P-03	Start sewing speed(r/min)	200-6000	4500	With trimming function: the speed setting for front sensor trigger start-up and back sensor signal finish (before trimming)
P-04	Start-up mode	0-1	0	(Valid for full-automatic mode) 0: Automatic mode 1: Foot control mode(Start-up by front sensor + front pedal)
P-05	Automatic/semi-automatic mode selection	0-1	1	(P-06 is turn on) 0: Automatic (Match with P-04 use) 1: Semi-automatic (Foot control mode)
P-06	Auto sensing switch	0-1	1	0: OFF (Full manual mode is turn on) 1: ON (It can execute automatic/ semi-automatic mode also)

				match with P-05 use)
P-07	Auto trimming switch	0-3	3	0: OFF 1: Front trimming (Trimming when Mid-sensor receive signal) 2: Back trimming (Trimming after back-sensor receive signal) 3: Front and back trimming
P-08	Auto suction	0-3	3	0: OFF 1: Front trimming suction 2: Back trimming suction 3: Front and back trimming suction
P-09	Automatic cloth feeding	0-2	0	0: OFF 1: Cloth feeding when sewing 2: Cloth feeding after sewing
P-10	Auto presser foot lifting	0-3	3	0: OFF 1: Front presser foot lifting (When front sensor receive signal) 2: Back presser foot lifting (After back sensor receive signal) 3: Front and back presser foot lifting
P-11	Presser foot lifting when stop on the sewing	0-1	0	(Valid for full-manual and semi-automatic mode) 0: OFF 1: ON (when stop on the sewing the presser foot lifting automatically)
P-12	Presser foot lifting after trimming	0-1	1	0: OFF 1: ON
P-13	Presser foot lifting when half back pedal	0-2	0	(Valid for full-manual / semi-automatic mode) 0: Half back & full back 1: OFF 2: Full back
P-14	Manual suction	0-2	1	0: No suction 1: Back suction 2: Front and back suction
P-15	Machine lamp brightness	0-4	3	0: OFF 1→4: the brightness grade, the more value the more brightness.
P-16	Low air pressure mode	0-1	0	0: OFF 1: ON
P-17	Semi-automatic continuous sewing	0-1	1	0: OFF 1: ON
P-18	Semi-automatic constant rate trimming	0-1	0	0: OFF (After finish before trimming not execute P-03 speed) 1: ON The speed of front and back trimming is fixed to the speed of P-03)
P-20	Stop position selection after trimming	0-1	1	0: Down position 1: Up position
P-22	Front Receiver E# switch	0-1	0	0: OFF (Turn off front sensor, pedal directly activated) 1: ON (Turn on front sensor, sensor signal + pedal activated)
P-23	Intermittent suction opening	1-600	20	The more value the more time

	time(×100ms)			
P-24	Intermittent air suction off time (×100ms)	0-600	0	0: For no intermittent air suction Front suction off time (valid when P-46 function setting is 1)
P-25	Synchronous suction (P16=1)	0-2000	200	Synchronous suction time of cloth (Valid for P-16 setting is 1)
P-26	The stitches number between two sensors	1-600	100	Cycle period parameter: In a circle the back sensor receive signal then can continue running, otherwise a cycle stop.
P-27	The delayed stitches number of front trimming (stitches)	0-50	14	The smaller value the more in advance, thread will retain longer. (Mid-sensor trigger)
P-28	The delayed stitches number of back trimming (stitches)	0-50	2	The small value the more in advance, the short of end-thread (Back-sensor trigger)
P-30	The delayed time of front suction off (ms)	0-2000	100	The small value the close is fast.
P-31	The delayed time after trimming suction (ms)	100-5000	200	The small value the close is fast.
P-35	The delayed stitches number before the machine stops (Stitches)	1-99	2	After through cloth back-sensor, the number of stitches when machine stop automatically. (Valid for back-sensor OFF condition)
P-36	The response time of front sensor (ms)	0-990	45	The small value the response is fast, the large value the response is slow
P-37	The sensitivity of front sensor	10-900	380	In order to adapt different cloth material setting front sensor receive strength.
P-38	The sensitivity of middle sensor	10-900	440	In order to adapt different cloth material setting mid-sensor receive strength.
P-39	The holding time of front presser foot lifting (ms)	50-2000	200	(In full automatic / semi-automatic mode) The larger value the longer holding time.
P-40	Back presser foot lifting start time (ms)	0-2000	20	The starting time of back presser foot lifting, the smaller value the faster the response.
P-41	Full-on output time setting of presser foot (ms)	10-990	100	The larger value the higher of foot lifting (Noted: Not too high)
P-42	Periodic signal of presser foot output (%)	10-90	25	When the presser foot is moving, the output is periodically power-saved to prevent the electromagnet from getting hot
P-43	The time for the presser foot laying down (ms)	10-990	30	The action time of presser foot laying down sequence.
P-44	Presser foot protection (s)	1-120	5	Stop on the sewing the presser foot lifting, stop after trimming presser foot lifting, positive closing after heeling pedal for retention time.
P-45	Trimming time (ms)	10-990	25	the longer time, the greater trimming force
P-46	Suction when continuous feeding	0-2	0	0: No suction 1: Long suction 2: Synchronous suction
P-47	Total pieces		0	
P-48	Needle goes up as power on	0-1	0	0: OFF 1: ON

P-50	Up needle position adjustment	0-2399	23	Same as P-72
P-51	Down position adjustment	0-2399	11	Same as P-73
P-52	Test speed (r/min)	200-6000	5500	
P-53	Test working time (×100ms)	1-250	50	
P-54	Test stop time (×100ms)	1-250	20	
P-55	Item A testing: Continuous running	0-1	0	0: OFF 1: ON
P-56	Item B testing: With function running	0-1	0	0: OFF 1: ON
P-57	Item C testing: Start stop operation	0-1	0	0: OFF 1: ON
P-58	Machine plate protection switch	0-1	1	0: OFF 1: ON
P-59	Presser foot protection switch	0-1	1	0: OFF 1: ON
P-60	Electric /Air-powered	0-1	0	0: Electric 1: Air-powered
P-61	Trimming switch by heeling pedal	0-7	0	0: OFF 1: In manual mode 2: In semi-automation 3: In automation 4: In manual mode and semi-automation 5: In semi-automation and automation 6: In manual mode and automation 7: ON
P-63	Language	0-2	1	0: English 1: Chinese 2: Turkish
P-64	The strength of front sensor	0%-100%	80%	Adjustment front sensor strength
P-65	The strength of middle sensor	0%-100%	80%	Adjustment middle sensor strength
P-66	The strength of back sensor	0%-100%	80%	Adjustment back sensor strength
P-67	The sensitivity of back sensor	10-900	440	In order to adapt different cloth material setting back-sensor receive strength.
P-69	Response time of back sensor(ms)	0-3000	0	Response time of back-sensor, when sewing such as mesh cloth can adjust this item, then can achieve you want effects.
P-70	Model selection	0-2	0	0: Horizontal knife type 1: Side knife type 2: Back-tacking type
P-71	Maximum speed limit	200-6500	6000	
P-72	Manually up positioning adjustment	0-2399		Through hand-wheel direction, clockwise turn hand-wheel to up position press "S" to save the current value.

P-73	Manually down positioning adjustment	0-2399		Through hand-wheel direction, clockwise turn hand-wheel to down position then press "S" to save current value.
P-74	Parameter reference	N1-N5		N1: Control box software version N2: Panel software version N3: Rotation N4: Pedal AD N5: Driver software version
P-76	Password setting	0000-9999	0000	
P-77	Zero point angle setting		520	
P-78	Suction bucket type	0-2	0	0: With brush 1: Without brush 2: Valve
P-80	The needle bar shield protection switch	0-1	0	0: OFF 1: ON
P-81	Electromagnet protection	0-1	1	0: OFF 1: ON
P-82	Alarm pieces	0-9990	0	
P-83	The number of standby display pieces	0-1	0	0: OFF 1: ON
P-84	Piece counting mode selection	0-1	0	0: Ascending 1: Descending
P-85	Piece counting trimming times	0-50	1	
P-86	Voice volume	0-5	5	
P-87	Voice broadcast selection	0-1	1	0: OFF 1: ON
P-88	User model		0	
P-90	Voice chip selection	0-4	4	
P-91	Back sensor switch	0-1	1	0: OFF 1: ON
P-92	Start machine voice selection	0-11	2	
P-94	Thin material light transmission	1-800	50	
P-95	Ordinary material light transmission	1-800	200	
P-96	Grid material light transmission	1-800	50	
P-97	Number of special material detection needles	0-50	0	
P-98	Trimming speed switch	0-3	0	0: OFF 1: Front trimming 2: Back trimming 3: ON

P-99	Front trimming protection	0-1	0	0: OFF 1: ON
P-100	Sewing fabric type	0-2	0	0: Thin material 1: Ordinary material 2: Grid material
P-101	Front sensor identification signal difference	0-50	10	
P-102	Middle sensor identification signal difference	0-50	10	
P-103	Back sensor identification signal difference	0-50	10	
P-104	Pedal acceleration slope	1-100	37	
P-106	Back pedal trimming times	0-1	0	
P-129	Stepping motor switch	0-1	1	0: OFF 1: ON
P-130	Stepping motor original point	-4800~4800	0000	Need to close the P131 stepping motor lock
P-131	Stepping motor lock	0-1	0	0: locked 1: Release
P-132	Maximum current of stepping motor	20-60	50	(*100mA) The maximum current when the stepping motor is running
P-133	Steady current of stepping motor	5-30	23	(*100mA) The steady current of stepping motor when the presser foot is raised (that is the steady force of the presser foot)
P-134	First feed speed	5-1500	60	Quickly pass the first half of the empty stroke section of the thread trimming mechanism
P-135	First feed angle	-4800~4800	45	It is not allowed to be greater than P-137 second feed angle
P-136	Second feed speed	5-1500	230	Reduce the speed appropriately and increase the force when thread trimming
P-137	Second feed angle	-4800~4800	265	It is not allowed to be smaller than P-135 first feed angle [decreasing parameters can reduce the metal collision sound of the trimming tool, but at the same time it will also reduce the trimming force]
P-138	Maximum current of trimming	30-55	50	
P-141	First retract speed	5-1500	355	The scissors quickly return to the position through the empty stroke section of the thread trimming mechanism, reducing the impact on the fabric being sewn
P-142	First retract angle	-4800~4800	70	It is not allowed to be smaller than P-144 second retract angle, and it is not allowed to be larger than P137 second feed angle
P-143	Second retract speed	5-1500	355	
P-144	Second retract angle	-4800~4800	0	It is not allowed to be greater than P-142 first retract angle (generally set as the origin of the stepping motor) [control the scissors return position]

P-145	Presser foot first lifting speed	5-1500	200	The gap between the stepping motor mechanism and the presser foot mechanism is stuck at low speed to prevent collision and sound
P-146	Presser foot first lifting angle	-4800~4800	-20	It is not allowed to be smaller than P-148 presser foot second lifting angle
P-147	Presser foot second lifting speed	5-1500	400	
P-148	Presser foot second lifting angle	-4800-4800	-210	It is not allowed to be smaller than P-146 presser foot first lifting angle [control the highest position of the presser foot]
P-149	Presser foot first lowering speed	5-1500	400	
P-150	Presser foot first lowering angle	-4800~4800	-150	It is not allowed to be larger than P-152 presser foot second lowering angle, and not allowed to be smaller than P148 presser foot second lifting angle
P-151	Presser foot second lowering speed	5-1500	150	Return to the origin at low speed to prevent the separation of the stepping motor mechanism and the presser foot mechanism from causing excessive noise
P-152	Presser foot second lowering angle	-4800~4800	0	It is not allowed to be smaller than P-150 presser foot first lowering angle (generally set to the origin of the stepping motor) [control presser foot return position]
P-153	Timing fine-tuning of front trimming	0-100	10	This parameter is used for the consistency of the thread end length of the sewing fabric under the conditions of high speed and low speed of the main shaft motor (cannot be easily modified)

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

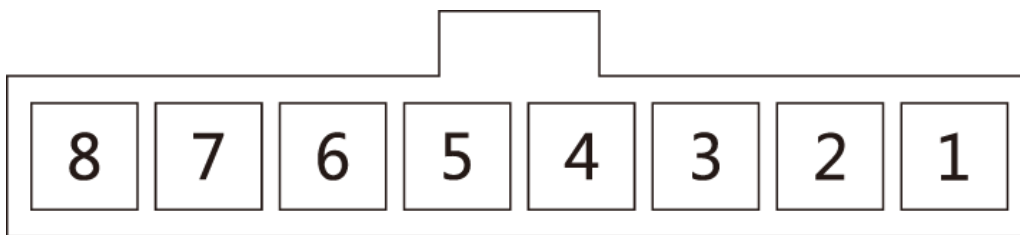
4. Error code list

Error Code	Problem	Solution
E01	System overvoltage	Please cut off the power supply and confirm whether the power supply voltage is correct (or whether it exceeds the rated voltage specified for use).
E02	System undervoltage	Please cut off the power supply and confirm whether the power supply voltage is correct (or is it lower than the rated voltage specified for use).
E05	Speed controller failure	Please cut off the power and confirm whether the speed controller is correctly connected to the control box.
E07	Motor locked-rotor	Please turn the handwheel to confirm whether main shaft motor is locked. Turn the handwheel 45° after the alarm can automatically eliminate the alarm. Please confirm whether the encoder cable or the motor and the power cable of the motor are properly connected.
E11	Unable to find the upper position	Please cut off the power supply, check whether the connection of the positioning signal board on the control box is loose, or whether the handwheel installation location is standardized, restore it to normal and restart the system.
E14	Encoder signal is abnormal	Please cut off the power, check whether the motor encoder connector is loose or fall off, restore it to normal and restart the system.

E15	System overcurrent protection	Please cut off the power, check whether the motor power supply cable is damaged or abnormally connected, and restart after troubleshooting.
E16	Incorrect position of presser foot	Check whether the presser foot is open, whether the presser foot safety switch is damaged, and whether the socket is abnormal.
E17	Incorrect position of sewing table	Check whether the sewing table is open, whether the safety switch of the sewing table is damaged, and whether the socket is abnormal.
E92	Thread trimming (presser foot) stepping motor overcurrent	Turn off the system power and observe whether the thread trimming (presser foot) stepping motor is stuck. If it is stuck, remove the mechanical failure of the machine head first. If it is normal, check if the thread trimmer (presser foot) stepping motor interface is loose or fall off, restore it to normal and restart the system.
E94	Thread trimming (presser foot) stepping motor can't find zero-point	Turn off the system power and observe whether the thread trimming (presser foot) stepping motor is stuck. If it is stuck, remove the mechanical failure of the machine head first. If it is normal, check whether the thread trimming (presser foot) stepping motor encoder interface is loose or falling off, and whether there is oil on the encoder code disk. If there is any oil, please clean it up, restore it to normal and restart the system.
E95	Thread trimming (presser foot) stepping motor encoder signal is abnormal	Turn off the system power, check if the thread trimming (presser foot) stepping motor encoder interface is loose or fall off, restore it to normal and restart the system.
E96	Thread trimming (presser foot) stepping motor is not connected	Turn off the power of the system, check whether the wire trimming (presser foot) stepping motor power cord interface and encoder interface are loose or fall off, and restart the system after returning it to normal.
E97	Thread trimming (presser foot) stepping motor stalling	Turn off the system power and observe whether the thread trimming (presser foot) stepping motor is stuck. If it is stuck, remove the mechanical failure of the machine head first. If it is normal, check whether the wire trimming (presser foot) stepping motor power cord interface and encoder interface are loose or fall off, restore them to normal and restart the system.
NC	Abnormal communication	Turn off the system power and check whether the panel connector is loose or disconnected. After troubleshooting, if the fault persists, check whether the power supply indicator of the main control chip is on. If abnormal, please replace the control box.

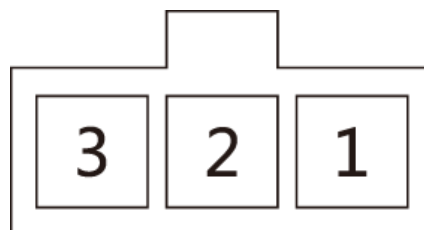
5. Port diagram

8A white port (LED, launcher)



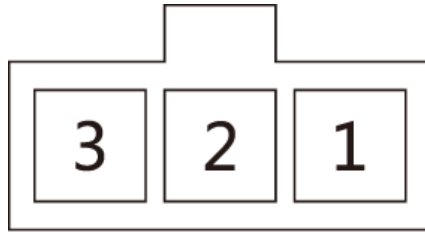
1: LED-, 2: +5V, 3: Manual trimming, 4: GND, 5: Middle launcher, 6: Back launcher, 7: Front Launcher, 8: +5V

3A black port (presser foot position sensing)



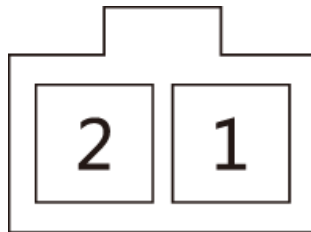
1: GND, 2: signal, 3: +5V

3A red port (sewing table position sensing)



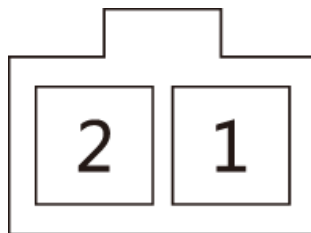
1: GND, 2: signal, 3: +5V

2P black port (front receiving)



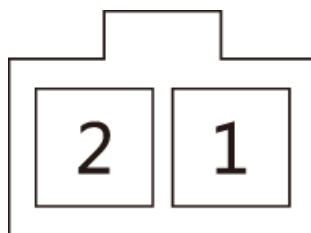
1: Received signal, 2: +5V

2P red port (medium receiving)



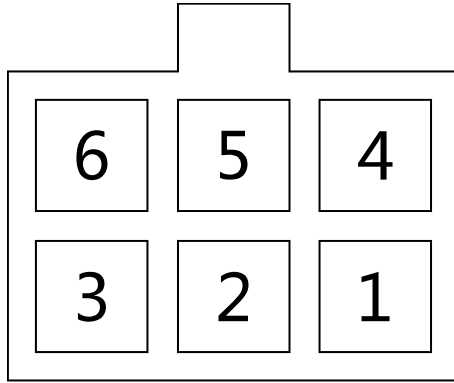
1: Received signal, 2: +5V

2P white port (back receiving)



1: Received signal, 2: +5V

6P white port (suction)



1. Thread chain suction: 1, 4 (+24V)
2. Cloth suction: 2, 5 (+24V)
3. Thread tension release: 3, 6 (+24V)