MCj03463170000[1]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 MCj03463170000[1] 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 ±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.

1. Repairs and high level maintenance work should only be carried out by electronic technicians with appropriate training.
2. All the spare parts for repair must be provided or approved by the manufacturer.
3. 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 | 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 | 1. Press it can switch thread trimming off, front trimming on, back trimming on, and front and back trimming on successively.  2. Long press it to enter thread trimming setting interface. |
| 8 |  | Mode selection | If you click, the following 4 modes will be switched in a loop:  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.  Long press it to enter mode setting interface. |
| 9 |  | Auto-suction | 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 | 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 | 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 |  | Cloth identification | Long press in the main interface to enter the fabric recognition mode. |
| 13 |  | Reset | In the normal mode interface, long press this key for 3 seconds to restore the factory settings. |
| 14 | Indicator light | ①F-SENSOR  ②M-SENSOR  ③B-SENSOR  ④STATE | 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. |

**2. Special function operation definition**

|  |  |  |
| --- | --- | --- |
| No. | Function name | Function description |
| 1 | Up position adjustment | Step 1: Long press the "" 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 "" to save the current value. |
| 2 | Down position adjustment | Step 1: Long press the "" 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 "" to save the current value. |
| 3 | 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 "";  Step 3: After selecting the fabric recognition mode, press ""; the setting is complete. (There are prompts on the interface) |
| 4 | Piece counting function | In the main interface, press "" and "" at the same time to enter the piece counting interface. |
| 5 | Quick operation interface | In the main interface, long press “” to enter the shortcut interface: 1. One-key test; 2. Running-in with function; 3. Upper positioning adjustment; 4. Power on to find upper positioning; 5. Sewing table protection; 6. Presser foot protection. |

**3. System parameter setting definition**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No | Function parameters | Range | Default | Description |
| P-01 | Sewing speed (r/min) | 200-7000 | 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) | 200-7000 | 5200 | 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: Semi-automatic (foot control mode)  1: Automatic (match with P-04 use) |
| 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 | 0 | 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 sewing | 0-1 | 0 | (Valid for full-manual and semi-automatic mode)  0: OFF  1: ON (presser foot lifting automatically after stop) |
| P-12 | Presser foot lifting after trimming | 0-1 | 0 | 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 | Continuous sewing switch | 0-1 | 0 | 0: OFF  1: ON |
| P-18 | Constant speed thread trimming switch | 0-1 | 0 | 0: OFF (it will not execute P-03 speed before back trimming)  1: ON (the speed of front and back trimming is fixed to the speed of P-03) |
| P-20 | Needle stop position selection after trimming | 0-1 | 1 | 0: Down position  1: Up position |
| P-22 | Front Receiver E# switch | 0-1 | 1 | 0: OFF (turn off front sensor, pedal directly activated)  1: ON (turn on front sensor, sensor signal + pedal activated) |
| P-23 | Intermittent suction opening time(×100ms) | 1-600 | 20 | The more value the more time. |
| P-24 | Intermittent 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 | 0-50 | 3 | The smaller value the more in advance, thread will retain longer (mid-sensor trigger). |
| P-28 | The delayed stitches number of back trimming | 0-50 | 3 | The small value the more in advance, the short of end-thread (back-sensor trigger). |
| P-30 | The delayed time of front suction off | 0-2000 | 100 | The smaller the value, the faster the shutdown. |
| P-31 | The delayed time after trimming suction | 100-5000 | 200 | The smaller the value, the faster the shutdown. |
| P-35 | The delayed stitches number before the machine stops | 1-99 | 1 | 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 | 0-990 | 50 | The small value the response is fast, the large value the response is slow. |
| P-37 | The sensitivity of front sensor | 10-900 | 300 | In order to adapt different cloth material setting front sensor receive strength. |
| P-38 | The sensitivity of middle sensor | 10-900 | 215 | 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 | 120 | 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 | 10-990 | 100 | 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 | 30 | 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 | 1 | 0: OFF  1: ON |
| P-50 | Up needle position adjustment | 0-2399 | 4 | Same as P-72. |
| P-51 | Down position adjustment | 0-2399 | 14 | Same as P-73. |
| P-52 | Test speed | 200-6000 | 5000 |  |
| P-53 | Test working time (×100ms) | 1-250 | 50 |  |
| P-54 | Test stop time (×100ms) | 1-250 | 50 |  |
| 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 | 1 | 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 | 375 | 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 | 1200 | Through hand-wheel direction, clockwise turn hand-wheel to up position press "" to save the current value. |
| P-73 | Manually down positioning adjustment | 0-2399 | 1200 | Through hand-wheel direction, clockwise turn hand-wheel to down position then press "" 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 | Agent use: After modification, ordinary users can't enter advanced parameters and modify advanced parameters. |
| P-77 | Zero point angle setting |  | 0000 |  |
| P-78 | Suction bucket type | 0-2 | 0 | 0: With brush  1: Without brush  2: Valve |
| P-79 | One-click test | 0-1 | 0 | 0: OFF  1: ON |
| 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 | 0-9999 | 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 | 4 |  |
| P-87 | Voice broadcast selection | 0-1 | 1 | 0: OFF  1: ON |
| P-88 | User model |  | 2 |  |
| 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 | 0 |  |
| P-94 | Thin material light transmission | 1-800 | 20 |  |
| 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 pro**te**ction | 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 | 38 |  |
| P-106 | Back pedal trimming times | 0-1 | 0 |  |
| P-107 | Specification selection | 1-2 | 1 | When the value is 1 (thin material, medium and thick material), the range of item P71 (maximum speed limit) is changed to 200-7000, and when the value is 2 (thick material), the range of item P71 is automatically changed to 200-6500. |

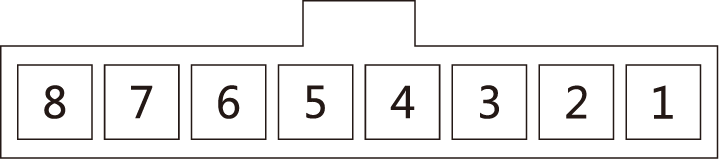
Note: the initial value of parameters is for reference only, and the actual value of parameters is subject to the real object.

**4. Error code list**

|  |  |  |
| --- | --- | --- |
| Error Code | Problem | Solution |
| 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. |
| E01 | High voltage | 1. Whether the grid voltage is higher than AC260V.  2. If it is self-generated power supply, please reduce the generator power.  3. If it still does not work normally, please replace the control box and notify the after-sales service. |
| E02 | Low voltage | 1. Whether to connect to low voltage.  2. Reset.  3. If it still does not work normally, please replace the control box and notify the after-sales service. |
| E05 | Speed controller contact abnormal | 1. Check whether the pedal connector is loose or fall off, and restart the system after returning it to normal.  2. If it still does not work normally, please replace the control box or speed controller and notify the after-sales service. |
| E07 | Motor stalling | 1. Turn off the power and check whether the handwheel can be turned smoothly (turn the handwheel by hand), if it cannot be turned, please check the machine.  2. Turn off the power, check whether the motor power connector is loose, plug it in and restart it.  3. Check whether the upper needle stop position is correct, if not, please adjust the upper positioning position.  4. If it still does not work normally, please replace the control box or spindle motor and notify the after-sales service. |
| E11 | Abnormal positioning signal | 1. Turn off the system power, check whether main shaft motor encoder connector is loose or fall off, restore it to normal and restart the system.  2. Check whether the motor zero point correction setting is correct; Reset the motor zero point correction; Whether there is oil on the encoder code plate, please clean it if there is any.  3. If it still does not work normally, please replace the control box or main shaft motor and notify the after-sales service. |
| E14 | The encoder signal is abnormal | 1. Turn off the system power, check whether the main shaft motor encoder connector is loose or fall off, restore it to normal and restart the system.  2. Check whether the grating is installed correctly (whether the grating screws are tightened and whether the grating is in the center of the encoder).  3. Check whether there is oil on the encoder code plate, if there is, please clean it up, and restart the system after recovery.  4. If it still does not work normally, please replace the control box or main shaft motor and notify the after-sales service. |
| E15 | Power module abnormal overcurrent protection | 1. Please check whether the motor power cord has bad contact.  2. Please check whether the motor power cord is crushed.  3. Please replace the control box or main shaft motor and notify the after-sales service. |
| 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. |

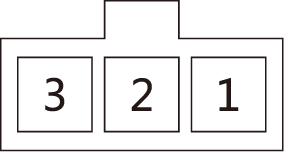
**5. Port diagram**

**8A white port (LED, launcher)**



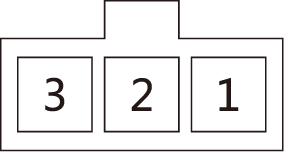
1: LED-, 2: +5V, 3: GND, 4: Manual trimming, 5: Middle launcher, 6: Back launcher, 7: Front Launcher, 8: +5V

**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**

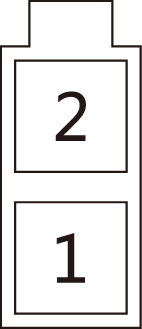


1. Thread trimming electromagnet: 1 (+32V), 6 (signal)

2. Thread chain suction: 2 (+32V), 4 (signal)

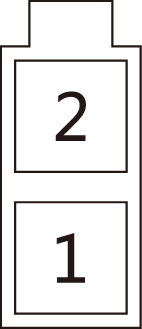
3. Cloth suction: 3 (+32V), 5 (signal)

**2P yellow port**



1. Presser foot lifting electromagnet: 1 (+32V), 2 (signal)

**2P white port (reserved)**



1. Air blowing: 1 (+32V), 2 (signal)