

△ Safety Instruction

- Users are required to read the operation manual completely and carefully before installation or operation.
 - The product should be installed and pre-operated by well trained persons.
 - All the instruction marked with sign △ must be observed or executed; otherwise, bodily injuries might occur.
 - 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 0°C.
 - Please avoid operating near the heater at dew area or at the humidity below 10% or above 90%.
 - 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 conductions and terminals. This connection should be fixed permanently.
 - All the moving portions must be prevented to be exposed by the parts provided.
 - Turing 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. Button Displays and operating instructions

1.1 Key Description

| | | |
|-----------------------------------|--|---|
| Function key enter parameter area | | Under normal mode, press the [P] key to enter the user parameter mode Press and hold the [P] key to boot into parameter mode Technician |
| Enter and determine \ save button | | Enter parameter values such items and their contents change after adjustment, need to press the [S] key to save the confirmation. Note: The parameters are saved directly by the [S] key. |
| On the adjustment key | | 1. Choose the region parameter items incrementing key 2. Parameter setting value incrementing key 3. Select the shortcut needle position |
| Under the adjustment key | | 1. Choose the region parameter items of diminishing key 2. Is decremented key parameter settings 3. Slow play seam selection shortcuts |

2 User Parameter & Technician Parameter

| Parameter | Parameter Function | Range | Default | Description |
|------------------------------------|--|----------|---------|--|
| In the normal screen, press [P] | | | | |
| P01 | Maximum Sewing Speed (rpm) | 100-3000 | 2800 | Maximum speed of machine sewing |
| P02 | Speed Curve Adjustment (%) | 10-100 | 80 | The Lager the value, the faster to increase speed |
| P03 | Needle UP/ DOWN | 0-1 | 1 | 0 : Needle Stops at Up Position 1 : Needle Stops at Down Position |
| P07 | Soft Start Speed (rpm) | 200-1500 | 400 | Soft Start Speed Adjustment |
| P08 | Stitch Numbers for Soft Start | 0-99 | 2 | Soft Start Stitches Setting (one unit = half stitch) |
| P14 | Soft Start | 0-1 | 0 | 1 : Slow start feature is turned on. 0 : Slow start function off. |
| P15 | Make up pin mode | 0-4 | 2 | 0: half needle 1: a needle 2: continuous half-pin 3: continuous fill a needle 4: continuous fill needle, fast stop |
| P24 | Foot pedal reverse voltage | 30-1000 | 110 | |
| P30 | Thick material angle | 0-100 | 10 | The greater the value, the excessive adjustment may cause the motor to be abnormal |
| P42 | Information Display | N01-N07 | | N01 Electrically controlled version serial numbers N02 Selected needle cassette version N03 Speed N04 Pedals AD, N05 Positioning angle (0-359), N06 Under the positioning angle N07 Bus voltage AD |
| P43 | Setting Direction of Motor Rotation | 0-1 | 1 | 1 : Clockwise 0 : Counter Clockwise |
| Press and hold the [P] key to boot | | | | |
| P44 | Brake force | 1-50 | 18 | Efforts to stop the machine when selecting |
| P48 | Low (Positioning) Speed (rpm) | 100-500 | 210 | Setting Positioning Speed |
| P56 | Needles Goes Up Automatically as Power turned on | 0-2 | 1 | 0: always not to find a position 1: : always looking for positioning 2: If the motor is positioned on the no longer find location (only with magnet motor) |
| P58 | Up Position Adjustment | 0-1440 | 40 | Up Position Adjustment The needle will advance stop when the value decreased. The needle will delay stop when the value increased. |

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|--|------------------------------------|----------|------|---|
| P59 | Down Position Adjustment | 0-1440 | 650 | Down Position Adjustment The needle will advance stop when the value decreased. The needle will delay stop when the value increased. |
| P60 | Testing Speed (rpm) | 200-5000 | 2200 | Setting testing speed. |
| P61 | Testing A | 0-1 | 0 | Option of Testing A, after setting press 【 P60 】 to set the speed keep running. |
| P62 | Testing B | 0-1 | 0 | Option of Testing B, after setting press 【 P60 】 to set the speed execute the cycle of Start - Sewing - Stop - Trimming |
| P63 | Testing C | 0-1 | 0 | Option of Testing C, after setting press【 P60 】 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 | Stop Time of Testing B and C | 1-250 | 20 | Setting stop time of testing B and C |
| P66 | Machine Protection Switch Testing | 0-2 | 1 | 0: Disable. 1: Testing zero signal. 2: Testing positive signal |
| P67 | Trimming Protection Switch Testing | 0-1 | 0 | 0 : Disable 1 : Enable |
| Press and hold the [P], [S] key while the boot | | | | |
| P70 | The factory Type Selection | 1-10 | 4 | |
| P72 | The needle position correction | 0-1440 | | Hand rotation manual to the appropriate position, press S key to save |
| P73 | Under needle position correction | 0-1440 | | Hand rotation manual to the appropriate position, press S key to save |
| P84 | Thick start angle | 0-359 | 9 | |
| P85 | The thick end angle | 0-359 | 57 | |
| P92 | Encoder start angle | | 160 | Read the encoder starting angle, the factory has been set, do not arbitrarily change (parameter values can not be manually changed, random changes will lead to control box, the motor abnormal or damaged) |

3 Error Code List

| Error Code | Problem | Strategies |
|------------|---|---|
| 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) When power ON, detected main voltage 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 exceed the rated voltage) 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 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 | Speed control unit connection is abnormal | Turn off the system power supply, please check the speed control unit connector if loose or fall off. Will resume normal after the restart system If you still can not work normally, please replace the speed control unit and notify the manufacturer. |

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| E07 | a) Motor plug wiring contact is not transferred b) Lock head or motor belt foreign body in the card die c) The machine is too thick, the motor torque is not enough. d) Module driven output exception | Rotating head motor hand wheel observation is stuck/stuck, the first rule out mechanical failure Such as rotation normal Check the motor encoder connector and motor power cable joints are loose If there is a loose please revise Such as good contact Check the supply voltage of the power supply voltage is too high or If you have to adjust As normal, please replace the control box and notify the manufacturer. |
| E09 E11 | Synchronizer signal error. | Power off system Check the motor encoder interface is loose or off Will resume normal after the restart system If you still can not work normally, please inform the factory and replace the motor. |
| E14 | Encoder signal exception | Turn off the system power Check the motor encoder interface is loose or off Will resume normal after the restart system If you still can not work normally, please replace the motor and notify the manufacturer. |
| E15 | Power module is not normal overcurrent protection | Turn off the system power, and then restart If you still can not work normally, please inform the factory and replace the motor. |
| E17 | Head protection switch is not in the correct position | Turn off the system power, check the nose is opened, the head switch is damaged. |
| E20 | Power On motor drive fail | Turn off the system power supply please check motor encoder come clear and motor power interface if loose or fall off. fener to normal then restart system If still not work, please replace the motof and notify the mamfactife. |

4. Port Outline Diagram

- LED lights
- 4P speed controller

