

***ENGLISH***

**M-1C/M-1F  
INSTRUCTION MANUAL  
(Electrical)**

**Original Language:Chinese**

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## 1. General safety instructions

1. Do not place your foot onto the pedal when connecting to the power source
2. Installation and trial-run must be done by skilled person
3. Open control box or motor cover under electrical power is not permitted
4. Make sure the earthing system is working well
5. When doing the following the machine has to be disconnected from the power supply
  - A. When threading machine, replacing needle, bottom thread
  - B. When install, dismantle and repair
  - C. When turn over the sewing machine

## 2. Environmental Requirements

1. Please do not work at damp place
2. The voltage requires being stable (210V~240V)
3. Must be adequately grounded for safety
4. Do not work at high temperature
5. Do not run motor and control system near to ferromagnetic or high-radiance area

## 3. Product instruction

This product by the company independent research and development, distinct personality, truly reflects the concept of mechanical and electrical integration, more energy saving, high efficiency, environmental protection, beautiful assembled in one. It can be widely applied to a variety of sewing equipment.

### 1.component:

The servomotor is composed of control system and motor :

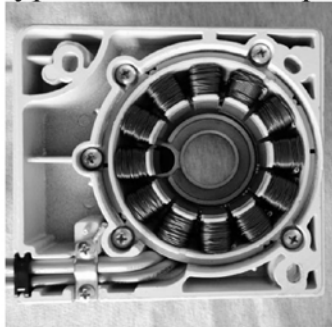


### **A.Control system includes control box and speed controller**

This control system features is easy to use and features in excellent performance, including quick start, quick stop (sewing machine), accurate needle position. Furthermore, the modular circuit has Self-Protection System when against lower voltage, over current, over heat etc. speed controller is realized by the pedal speeder.

### **B. motor:**

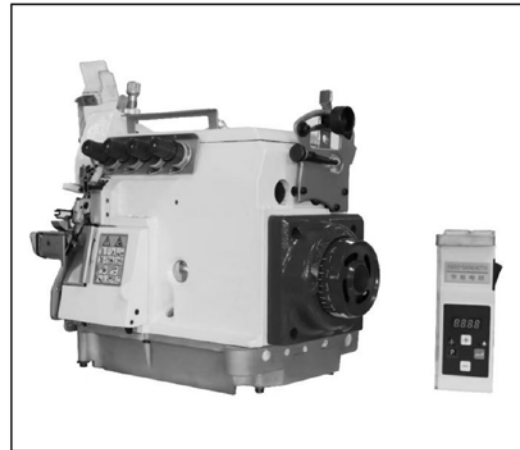
Rotor is made of rare earth permanent magnet, guarantee high power and environmental. Exactly needle UP/DOWN position due to its built-in Hall type sensor and compact design.



### **B.Partial demonstration:**



M-1C



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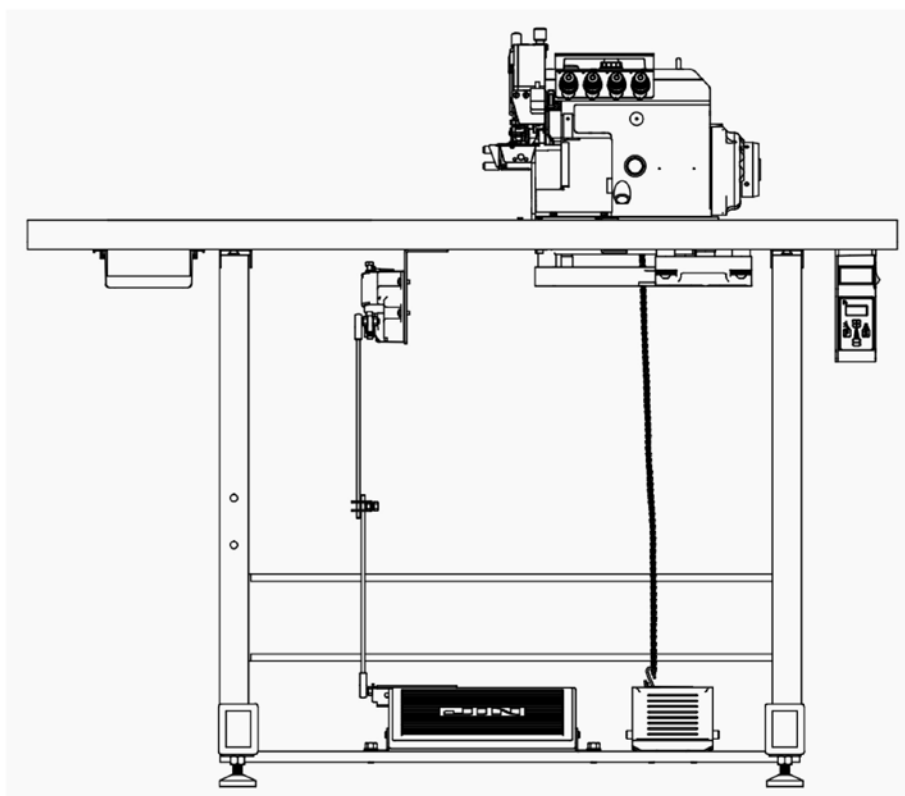
## 2、Specifications

Voltage	220V     2phase
Frequency	50~60HZ
Rating power watt	550W

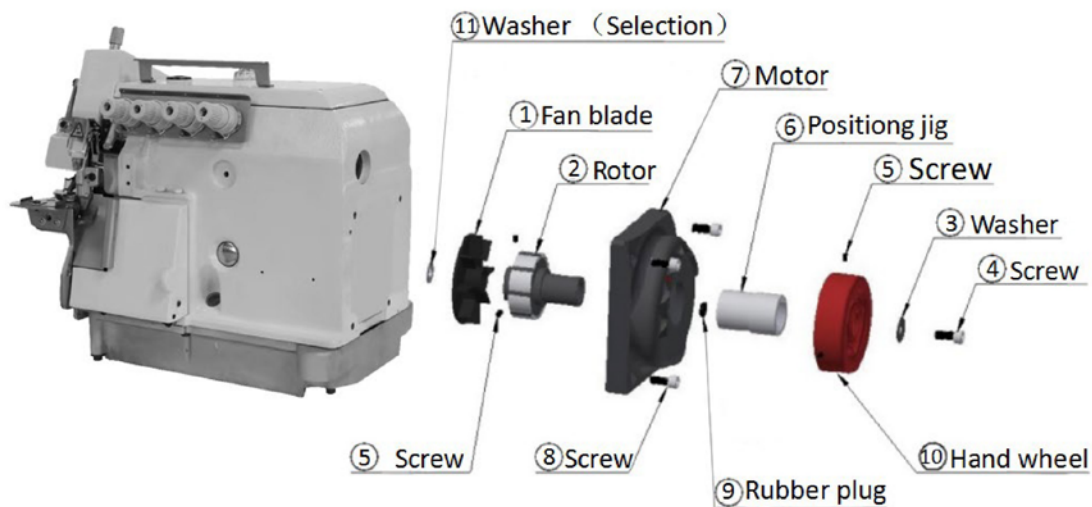
## 4. Installation and trial-run

### 1. Install control box and speed controller as below figure

Using screws, mount the Control Box and speed controller onto sewing table properly.



## 2.Schematic diagram of the installation of direct drive motor:



Motor installation of a total of 5 steps:

### (1) Install rotor:

A) Remove the hand wheel, belt cover and wind blade on the sewing machine.

B) Figure①fan blade and figure②rotor install into the shaft of sewing machine in the picture, fixed rotor and fan with figure③gasket and figure④screw, then fix figure⑤two screws.

Check 1: Clutch rotor with right hand, the left hand turns the fan to have no rotation.

Check 2: Hand rotation of the sewing machine should not increase heavy.

(2) **Install motor:** Using a special plastic locating figure⑥card in the motor map positioning hole whose diameter⑦ is 30, install into sewing machine directed at figure②rotor, then fixed with figure⑧screws, screw down to be able to easily pull out the positioning sleeve.(Notes: The stator into the rotor should pay attention to the magnet suction, carefully clip hand .)

**(3) Check the rotor and the stator is installed**

A) Taking out figure ⑨ rubber hole stopper.

B) Check the plane of the rotor and the stator is flat or not, two surface roughness shall not exceed 1.5mm(See section view A), if more than 1.5mm, to remove the motor and the rotor with figure⑪ gasket to adjust

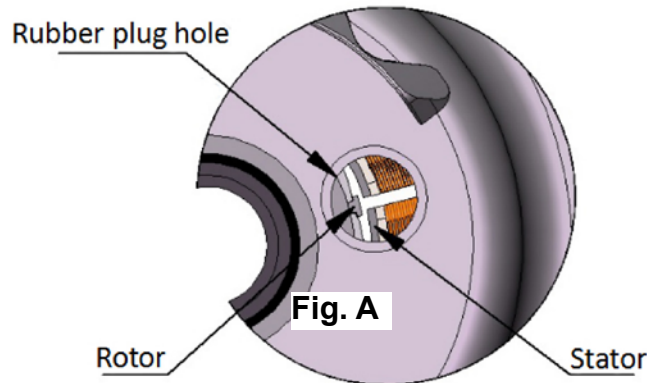


图 A

C) Adjusted to fit back rubber hole stopper.(Notes: The distance between two flat as small as possible, if more than 1.5mm, motor will be calorific value more and torque decreases.)

**(4) Install hand wheel:**

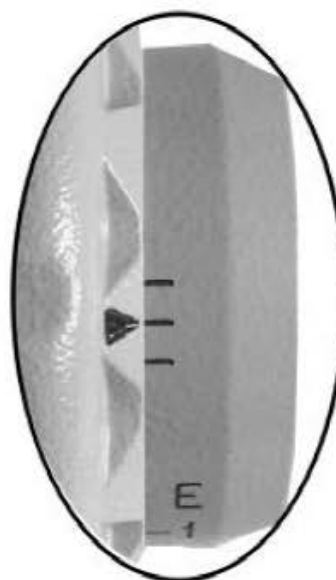
A) Turn the sewing by hand , make the needle stop at the highest level

B) Put the hand wheel in the rotor, .(Notes: The motor of the over'lock sewing machine need aim three little strips on the handwheel (As Pic.C).Tighten two screws of figure ⑤, and keep the clearance of hand wheel and motor 1.5mm~2.5mm (As Pic.B).)

(5) **Check:** Hand wheel hand wheel without card wiping phenomenon, Sewing machine weight does not increase



**Fig. B**



**Fig. C**

## **5. Installation for Control Panel**

### **Each key purpose:**

#### **(1) Function of "P" key:**

First: "P" key for upper and lower stop needle position. Press "P", if up pinhole lamp lights means it's up stop needle, if down pinhole lamp lights means that it is down stop needle, if two lamps off means needle position is freedom.

Second: Function Enter button ( below to enter the parameter method of operation)

#### **(2) Function of "S" key:**

First: "S" button for off or on the head lamp. Press "S" key the lamp lights, if don't do it is turn off.

Second: Function Enter button ( below to enter the parameter method of operation)

#### **(3) Function of "+" 、 "-" key**

These two keys are used to adjust speed and parameter modulation.



## 2. To enter the parameter method of operation:

Example: How to change the motor from clockwise to counterclockwise:

Step one: Open the power;

Step two: Press the "P" key, no leave, and press "+" key, the screen will display the P-00;

Step third: Press "+" key, change the P-00 to P-02, (P-02) is a motor clockwise or counterclockwise parameters (common parameter list has record);

Step four: Now press "P" key (enter into parameters) screen will display "1";

Step fifth: Press "-" key, change "1" to "0"; ("1" for clockwise, "0" for the counter clockwise rotation, commonly used in the parameter table is indicated);

Step six: Press the "S" key to determine the parameters, save and exit the parameter.

## 3. Restore factory settings

Restore factory settings: Press the "P" key, no leave, and press the "+" key, the screen will display the P-00, then press "S" key 3 seconds.

## 4. Commonly used parameter setting

Parameter item	Parameter value	The scope of	Parameter Description
P-00			Restore factory Settings: Hold down the OK key until you return to the main interface
P-01	5000	M-1C: 200-6000 M-1F: 200-5500	Maximum speed lock: The limited user can set the maximum speed
P-02	1	0-1/2-3	Motor rotation direction: 0 is counterclockwise, 1 is clockwise; When parameter P13 is set to 1, the current parameter range is 2-3. 2 is counterclockwise and 3 is clockwise
P-03	12	6-18	Lower stopping Angle: The Angle relative to the upper stopping point
P-04	250	200-800	Seam speed: minimum motor speed
P-05	3000	500-4000	Acceleration speed: internal acceleration coefficient. The

			larger the value, the faster the acceleration will be; the smaller the acceleration will be
P-06	0	0-999	Fixed stitch: Open fixed stitch to display n-1 to n-999
P-07	1100	800-2000	Stop speed: Stop program entry speed
P-09	0	0-1	Reset factory password parameter: Parameter P-17 can be enabled only when it is set to 1
P-10	0	0-1	Automatic operation (running)
P-13	0	0-1	Old lockstitch machine motor support
P-14	260	50-450	Maximum current limit: internal current value
P-15	1	0-1	Whether to detect the upper needle position: 0: no detection; 1: When the detection needle position is set to 1, if there is no positioning sensor, it will alarm ER01; when it is set to 0, it will not alarm
P-16	5200	200-1 Parameter set value	Setting the maximum speed: The user adjusts it by using the + and - keys in the main interface
P-17	1	1-3	Reset factory password: The P-17 parameter appears only after the P-09 parameter is enabled. Set it to 3 and hold down the OK key to restore the factory password
P-18	2013	0000-9999	Set password: can change the password
P-19	0	0-15	Number of soft start stitches: 0 to turn off the function, enable the soft start when 1-15 stitches, and set the number of stitches (valid when the needle is stopped up)
P-20	800	200-3500	Soft starting speed
P-21	1	0-1	Suction function: Open/close the suction function when the motor is running
P-22	30	1-200	Number of inspiratory opening stitches: Number of inspiratory opening stitches (valid when P23 stitches are open)
P-23	0	0-200	Suction closing stitch: The number of suction closing stitch
P-24	120	50-2000	Inspiratory action maintenance time
P-25	120	35-1000	Suction full power time
P-26	100	5-100	Suction power at full power
P-27	80	1-100	Suction sustaining power
P-28	20	0-500	Suction release time
P-29	30	1-120	Suction protection time: Maximum suction time for a single action
P-30	0	0-1	Press foot trigger mode: when it is set to 0, the press foot of the rear step speed controller is lifted, and the press foot of

			the release speed controller is released.
			When it is set to 1, the press foot of the back step speed controller is lifted, and the release foot is maintained. The press foot will not be released until the forward step or protection time is up, and the press foot will be lifted automatically when the motor stops each time
P-31	0	0-2000	Back foot lift start time: back foot delay start press foot time
P-32	160	50-2000	Lift and press foot operation maintenance time: this parameter is not used for the moment
P-33	160	35-1000	Lifting press foot full power time
P-34	100	5-100	Power when lifting full power of presser foot
P-35	80	1-100	Lift press foot to maintain power
P-36	30	0-500	Press foot release time: press foot release time
P-37	10	1-120	Press foot protection time: the maximum maintenance time of a single lift of the press foot
P-38	0	200-6500	Display speed: Displays the actual speed of the current motor
P-39	0	0-1050+3%	Display the current speed controller voltage 0-1024, equivalent to 0-5V, there is a certain error
P-40	0	60-500	Display DC bus voltage: alarm will be generated when the voltage is higher than 395 (DC bus voltage /1.414= AC bus voltage)
P-41	1	0-2	Overvoltage protection switch: set to 0 to close the overvoltage alarm, set to 1 to open the alarm, when the DC bus voltage exceeds 395V, alarm Er16, the motor automatically stops running, after the alarm when the voltage is lower than 385v the motor can run again
P-42	3	0-3	1: Power on to check whether the governor is reset, 2: power failure detection enable, 3: both enabled

## 6. Common faults and treatments

The serial number	Error code	Error content	Several possible error problem
1	Er01	Can't find the needle position	<ol style="list-style-type: none"> <li>1. The hand wheel is not close, clearance within 2.5 mm</li> <li>2. Nine plug contact undesirable</li> <li>3. Motor holzer bad, to replace the motor</li> <li>4. The hand wheel magnet in the loss</li> </ol>
2	Er02	Not detected boot speed regulator	<ol style="list-style-type: none"> <li>1. Speed control device without plug</li> <li>2. Speed wire is broken or contact undesirable</li> </ol>
3	Er03	Motor holzer or phase error	<ol style="list-style-type: none"> <li>1. Nine hole plug contact undesirable</li> <li>2. The motor doesn't pack good</li> <li>3. Holzer is bad</li> </ol>
4	Er04	Locked-rotor protection	<ol style="list-style-type: none"> <li>1. The motor overload</li> <li>2. The motor and the controller connected four hole line contact is not good</li> <li>3. Motor is bad</li> </ol>
5	Er05	Hardware over-current protection	<ol style="list-style-type: none"> <li>1. The motor overload</li> <li>2. Line contact is bad or broken</li> <li>3. Main board is bad</li> </ol>
6	Er07	Serial port communication timeout error	Display to the system board signal is bad or board is bad
7		Screen without electricity Switch with electricity	<ol style="list-style-type: none"> <li>1. Main board is broken</li> <li>2. The display screen and the main board connection line contact is bad</li> </ol>

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