

# ***HJ-3A***

## ***STABLE TEMPERATURE***

## ***MAGNETIC STIRRER***

### ***OPERATION    MANUAL***

### ***MAINTENANCE   INSTRUCTIONS***

#### **I .   Features**

HJ-3A   Stable Temperature Magnetic Stirrer has functions of heating,timing, stable temperature ,digital display temperature.

It has High stable-temperature sensitivity, and makes chemical stirring experiment towards automation. It is also an ideal instrument for all kinds of   analytical instruments to stirring solutions.

#### **II .   Technical Data**

- A. Power supply: Single-phase 220V±10%   50Hz
- B. Motor power: 25W
- C. Heating power:120W
- D. Speed range: start up 0-1600rpm (stepless speed regulation)
- E. Stable temperature:RT-100℃.
- F. Time range: 0-120 min

#### **III.   How to use**

- A. Firstly check if the spare parts are complete before using, then fix clamp in order.
- B. Put beaker containing solution which you need stirring in the center of heating plate, then put mixer in the center of the solution, and connect stable temperature sensor and insert into the solution.
- C. Connect the power supply, turn on the switch and the indicator is light.

D. Screw clockwise the knob to begin mixing, that is from low

speed to high speed clockwise slowly. It is forbidden to start up to high speed directly, which can cause the mixer jumping.

E. Setting temperature: Press “set” key can set or examine the temperature. Press “set” key, digital control characters start flashing, which meaning the Instrument is setting state. Press  $\triangle$  Key meaning increase settings value,  $\nabla$  key meaning reduce settings value. press  $\nabla$  or  $\triangle$  key for a long time, data will change rapidly. Press “SET” again, the instrument will return to the normal working state, then temperature setting is over.

F. Intelligent controlling parameter setting: Press “set” for 3seconds to in the state of interior parameter setting.

- In this parameter ‘P = 0’ is the advance amount of stop heating. When  $P \neq 0$ , the mode of instrument working is diligent PID, and then ‘E’ parameter no meaning.

- When  $P \neq 0$ , It is the proportional band, which also is proportional control value, the instrument take setting value as center and the value of P distributes in both sides of setting-point. The instrument works as PID mode in the range of P value.

- When  $P \neq 0$ , It is heating output cycle period, which also is relay work cycle period. T value small, but its control has good effect. And If T value is too small, the relay will be reduced longevity because of frequent work. Generally setting T for 20-60 seconds.

In order to simplify the operation, the instrument of integral time(I) and rate time (D) are designed as hidden parameter, and their windows default are  $I = 180$ ,  $D = 45$ .

1. Error correction: You can correct the value after you make certain the value displayed by the instrument is not the right measured value. Press ‘SET’ key for 3 seconds into inner menu, the first appearing & flashing parameters E00, which is advance amount. Press ‘set’ key again, appearing a parameter is error correction parameter, which may modify this parameter by  $\triangle$  or  $\nabla$  key. Error correction in the range of  $-9.9^{\circ}\text{C}$  to  $+9.9^{\circ}\text{C}$ . withdraw from the ‘SET’ key after completion of amendments by pressing keys. The value of instrument out of factory is 0.0. It should be paid attention not to modify the instrument of displayed right to be wrong one.

## 2. Exception and treatment

NO.	Phenomena	May exist in fault	Solution
1	Show normally but no heating	Setting value lower than actual measuring temperature.	Check setting value
2	Heat indicator is light but no heating up	Heating pipe breaks or the output of relay damages	Check and exclude
3	Display LLL and flash	The measuring temperature lower than $-5^{\circ}\text{C}$ or temperature probe breaks	Check and exclude
4	Display 99.9 and flash	The measuring liquid temperature is higher than instrument measuring upper limit	Check and exclude
5	Display temperature is higher than actual value	temperature probe get into water	Dry temperature probe
6	Display normal temperature lose control	The line of controlling heating is short-circuit or open circuit	Check and exclude
7	The displayed data is dim and shaking	Low voltage	Check working voltage

## **I . Features**

HJ-3A Stable Temperature Magnetic Stirrer has functions of heating,timing, stable temperature ,digital display temperature.

It has High stable-temperature sensitivity, and makes chemical stirring experiment towards automation. It is also an ideal instrument for all kinds of analytical instruments to stirring solutions.

## **II . Technical Data**

A. Power supply: Single-phase 220V $\pm$ 10% 50Hz

B. Motor power: 25W

C. Heating power:120W

D. Speed range: start up 0-1600rpm (stepless speed regulation)

E. Stable temperature:RT-100℃.

F. Time range: 0-120 min

## **III. How to use**

A. Firstly check if the spare parts are complete before using, then fix clamp in order.

B. Put beaker containing solution which you need stirring in the center of heating plate, then put mixer in the center of the solution, and connect stable temperature sensor and insert into the solution.

C. Connect the power supply, turn on the switch and the indicator is light.

## **IV. Pay Attention**

A. Please cut off power if you find the mixer stopped or jumping, checking whether the mixer and the beaker are in the middle of the hot plate. Then switch on the mixer , adjust the speed slowly. And on the other hand, please have a check that the voltage whether is between 220V $\pm$ 10%.If not, which can find above phenomena.

B. Please cut off power immediately and have a check, if you find leakage electricity after Heating.