

# Digital control thermostatic water bath

## Operating manual

### Brief instruction

Digital control thermostat circulating water bath can be used to drying, condense, distillation, soakage chemical reagents, soakage medicine and biochemical products . It also can be used to water bath heat and the other temperature experiment. It is a necessary tool for biology, genetic, virus, marine lives, environmental protection, medicine, hygiene, biochemical experiment and the education research. Main features: 1) The water tank is stainless steel, are good corrosion resistance.2) Accurate temp control, Digital control, Automatic temp control. 3) Easy, simple and safe to handle.4) Stirrer control , to make thermostatic fastly (HH-1 and HH-2 has not this funcation) .

### Technical specification

Item \ Model	HH-1	HH-2	HH-4	HH-6	HH-8
Holes	1hole	2holes	4holes two way	6holes two way	8holes two way
Heat Power	300W	400W	800W	1000W	1200W
Fuse Tube	4A	6A	8A	10A	10A
Temperature control range	RT-100°C				
Temperature undulation	±1°C				
Average Ramp Up Rate	From Normal temperature to 100°C ≤ 70Min				
Stirrer Watt	6W( HH-1and HH-2 without this function )				
Power Supply	AC220V 50Hz/AC110V 60Hz				
Environmental Conditions	5°C--40°C; Relative humidity ≤ 80%				

### Safety warning

1. Please read instruction manual in detail before using machine.
2. Please use clear water and the heating pipe should be under the water surface 5cm.
3. Please immit suitable amount water, while the water surface under the lowest waterline.
4. The user should use suitability socket which voltage data should be bigger than be machine's and it has well grounded line.
5. While machine working, please don't touch up parts of machine to avoid to cause scald.
6. The using condition should with good aeration. Please ask the technical to solve the problem.
7. Before changing the fuel, please make sure the power is off.
8. Immit suitable amount clear water into tank.
9. Take care of it while machine working, avoid to cause heater damage by no enough water in tank.
10. If never use machine for a long time, please keep tank dryness.

## Operation description

1. Connect power and turn on power switch.
2. Press SET key to switch to the temperature setting mode. the digit twinkles indicate you could change the value by pressing up key "▲" to increase or down key "▼" to decrease. Press down constantly to increase or decrease continuously to the value you need. Press the SET Key to exit the setting mode when finish setting.
3. Parameter Setting (Use the following method to adjust when the system temperature control is imprecise.)  
Sc: press down the SET key for 3 seconds to switch into the inner parameter setting mode. It displays the Sc means the error between the measured value and the actual value. Press the setting key it shows the twinkling default value 0.0, you could change the value by press up or down key (the same operation as below rang:-9.9~9.0)  
E: After setting Sc value press SET key to adjust the next parameter E. it means the lead of breakpoint control (take effect when the P value is zero) the default value is 0.5.  
P: Press the SET key again switch to the third parameter P. it means the P parameter of PID control. It means the control TEMP=setting TEMPE-(10/P). When you set 50 degree and the P value is 10 it means the PID will begin control at 49 degree, and when then P value is 4 it will begin control at 47.5 degree. If the overshoot it too big please decrease the P value and if the temperature increases too slowly or couldn't reach the setting temperature please increase the P value.  
Note: when the P value is zero, the PID will be disabled. It will use the breakpoint control. It begins to control when the temperature is low than (setting temperature-E value).  
C: press SET key to the last parameter c setting this is the reserved parameter. don't change its value and the default is 20.0
4. After setting press SET key to switch to normal working mode.

## Notice

1. Don't using machine under blazing or direct sun.
2. Do not move machine while it working.
3. Do not impinge machine.
4. Children are forbidden to touch the machine.
5. Must cut off power before change fuse.
6. Use the soft cloth with cleaning solution to clear the machine.
7. The voltage of power supply must be steady.

## Trouble and solution

No.	Trouble	Solution
1	No digital show	Check whether the connection of power plug are good, or check the fuse if it bum down.
2	Digital show ok, no heat	Check heater are ok, or check relay for control heating if bum down. If so please change it.
3	Digital show levity	Check control board if be damped

## Conveyance and imbursement

- 1.The machine should be put lightly during the conveyance to protect its inner structure.
- 2.The layer height of the machine can not be over Four.
- 3.The warehouse should keep dry and air through.