Laboratory Equipment Manufacturer
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INSTRUCTION MANUAL FOR

Orbital Large Shaking Water Bath

WBT-450

PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION

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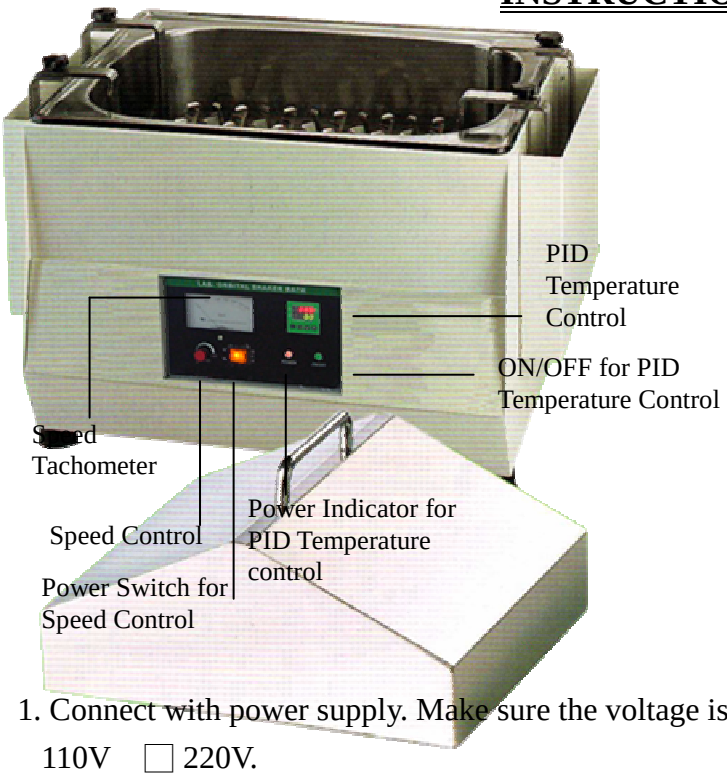
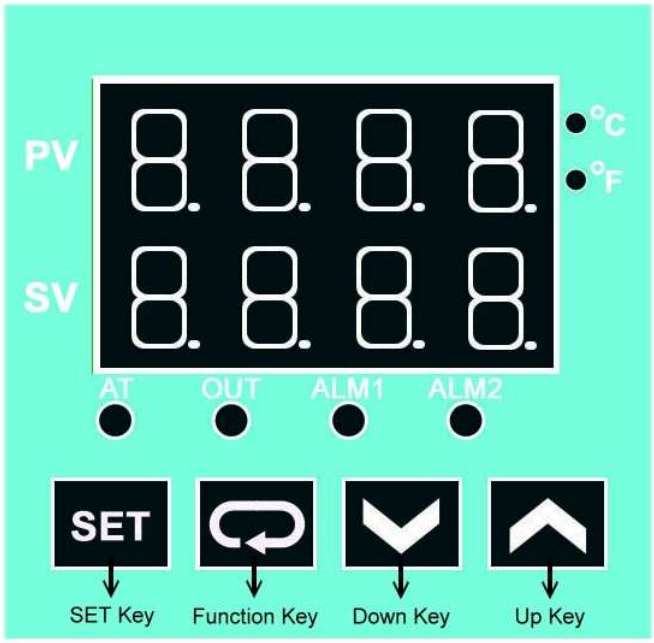
INSTRUCTION MANUAL





1. Connect with power supply. Make sure the voltage is ☐ 110V ☐ 220V.
2. Set you Erlenmeyer flasks with specimen into the water tank.
3. Pour the water into the tank at least over the half height of the flasks.

Setting temperature:

4. Press “ON/OFF for PID temperature control” to turn on the PID (Power Indicator will be illuminated) and wait for about 5 seconds; you can see from PID control panel the present temperature value (PV) in upper row and setting temperature value (SV) in lower row.
5. Press “Up Key” or “ Down Key” to adjust SV value and then press “SET Key” to enter the value.

Setting speed:

6. Turn on “Power switch for speed control”. Adjust the “Speed control” to set speed value. At the same time, the “Speed tachometer” will show the present speed value.
7. After finishing the work, please turn off all “Power switch”.
8. Turn the “ Switch for drains” to drain water from the tank.

Caution:

1. If water level is under the platform, you must pour water into “Tank” until over platform.

Remark:

1. When the “OUT” indicator is sparkling, it means that the instrument is heating.
2. After the PV value reaches to SV value and tends to be stable, the “ALM1” Indicator will light up if the PV value exceeds the SV value by setting point (10℃). In this situation, please turn the power off, open the door and wait for about 30 minutes, and then restart it.

Other functions:

Note: Before executing other functions, please follow “5. Setting lock” to release “LOCK” status.

After executing other functions, please follow “5. Setting lock” to set “LOCK” status.

1. Setting point alarm:
   (1) Setting upper-limit point for alarm: (When the difference between PV abd SV is over upper-limit, the “Alarm Indicator” (ALM1) will sparkle)
      (a) Press ↻ twice. You will see AL 1H in upper row and the setting point in lower row.
      (b) Press ” UP KEY ” or “ DOWN KEY ” to set point, and press SET to enter the value. Press SET again to be back the PV/SV display.
      (c) The inital value is 10.
   (2) Setting lower-limit point for alarm: (When the difference between SV abd PV is over lower-limit, the “Alarm Indicator” (ALM1) will sparkle)
      (a) Press ↻ twice. You will see AL 1L in upper row and the setting point in lower row.
      (b) Press ” UP KEY ” or “ DOWN KEY ” to set point, and press SET to enter the value. Press SET again to be back the PV/SV display.
      (c) The inital value is 10.
2. Setting temperature unit:
   (a) Press SET more than 3 sec.
   (b) Press ↻ once. You will see tPUn in upper row and the setting value in lower row.
   (c) Press ” UP KEY ” or “ DOWN KEY ” to set temperature unit “C” or “F”, and then press SET to enter value. Press SET again to be back PV/SV display.
   (d) The inital value is C.
3. Setting PV shift (offset) value: (If the PV value is not correct, you can use this function to adjust the PV value).
   (a) Press SET less than 3 sec.
   (b) Press ↻ six times. You will see tPoF in upper row and the setting value in lower row.
   (c) Press ” UP KEY ” or “ DOWN KEY ” to set shift value, and press SET to enter the value. Press SET again to be back the PV/SV display.
   (d) The inital value is 0.
4. Setting Auto-tuning function:
   (a) Press ” UP KEY ” or “ DOWN KEY ” to set SV value to be auto-tuning.
   (b) Press SET less than 3 sec.
   (c) You will see AT in upper row and the setting value in lower row.
   (d) Press ” UP KEY ” or “ DOWN KEY ” to choose “ON” to start or “OFF” to close auto-tuning function. When auto-tuning function is on, you can see the “AT” indicator blanking. Once the auto-tuning function finish, the light of “AT” will extinguish.
   (e) The inital value is OFF.
   Note: (Auto-tuning function is that PID controller can depend on the ambient air temperature to find the best way to reach the setting temperature and let the setting temperature keep stable.)
5. Setting lock:
   (a) Press ↻ four times. You will see LoC in upper row and the setting value in lower row.
   (b) Press ” UP KEY ” or “ DOWN KEY ” to select locking status. LoC 1 can lock all settings and LoC2 can lock others than SV; When “oFF” is selected, the lock function will be off. After selecting, press SET to enter the value. Press SET again to be back the PV/SV display.
   (c) If you press ↻ and SET simultaneously, the “Lock” status will be released.
   (d) The initial value is LoC2 .
6. During setting value, you may press SET anytime to be back PV/SV display.

Circuit Diagram