

# BIO-RHP Air jacket CO<sub>2</sub> incubator touch screen type

## Intelligent touch screen controller

- Replace traditional button operation to touch screen interface.
- It can display on time performance curve. You can check the temp., humidity (option) and CO<sub>2</sub> concentration three group curves changes at the same time. And abnormal alarm and door open or close message.
- When parameters are set, the controller will lock the screen automatically, it avoid unauthorized person wrong operation on the machine.
- 72 hours machine performance inquiry, it is convenient for user to check abnormal situation and track historical running information.
- RS-485 communication port as options can be remote control on computer for monitoring the running and start or close the machine.



## CO<sub>2</sub> concentration sensor

- You may need to open door frequently during experiment, infrared sensor is the best choice under this circumstances. Our infrared sensor is very sensitive to CO<sub>2</sub> concentration varies and it will be not affected by inside of incubator chamber conditions, measured accurately. It doesn't like traditional thermal probe that will be sensitive to chamber temp., and humidity that lead to incorrect CO<sub>2</sub> concentration data.
- If open the door for 30s and close the door, within 3 min the CO<sub>2</sub> concentration can resume to the set value 5%. Even if there are many people use the same machine and frequently open and close door, the inside chamber can still maintain CO<sub>2</sub> concentration stable and uniform.

## Temperature control and monitoring system

### A. Incubator temperature control system

- PT100 temp. sensor keeps inside chamber temperature accurate. It can adjust the heating power according to the temp. differences between actual temp. in the chamber and set temp. to make sure temp. in the chamber is accurate. It can resume experiment temp. in 3 min after user open and close door to take samples.

### B. Door heating system

- Outer door ring has heating function. The temperature of door ring will be a little bit higher than temp. in the chamber to prevent condensed water coming from the inner glass door. It facilitates observe the experiment process, also it avoid the biological pollution possibility due to the condensed water from the inner glass door.

### C. Environment temp. detect system

- Independent environment temp. detector, it can automatically adjust the CO<sub>2</sub> incubator heating system according to experiment environment temp. varies, in this case, over temp. in the chamber will not happen.

### D. Over temp. protection system

- It is an independent backup temp. control system besides the CO<sub>2</sub> incubator temp. control system. When the incubator temp. control system failed and caused temp. lose control, the chamber temp. reaches to the over temp. limiter set value, over temp. protection system will cut down the heating and alarm audible with light.

### E. Power off alarm system

- Detect the power supply real time. When power off, the incubator will alarm audible with light to avoid any loss due to power shortages.



## Sterilization system

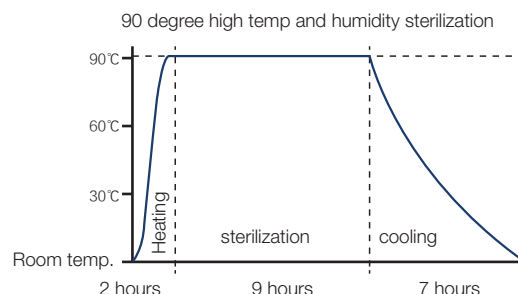
### Ultraviolet sterilization(Optional)

- The ultraviolet lamp is placed at the back top of the chamber. It can sterilize the chamber regularly. It kills chamber recycle air bacteria and float bacteria from water tray or slop water in the bottom, effectively prevent pollution during cell culture period.

## Sterilization system

A.90 degree high temp. high humidity sterilization system (RHP)

- It can thoroughly sterilize the chamber (Including temp. sensor, CO<sub>2</sub> concentration sensor, fan, shelves and brackets etc) with high temp and high humidity. It eliminates bacteria, mold, mycoplasma etc microbiology those will pollute the microorganisms cell culture and provides a safe experiment environment.
- Simple operation: The user just press the sterilization start button on the control panel, the sterilization system starts to thoroughly sterilize the chamber (Including temp. sensor, CO<sub>2</sub> concentration sensor, fan, shelves and brackets etc)
- The whole sterilization cycle is shorten to 18 hours.



## Safe Functions

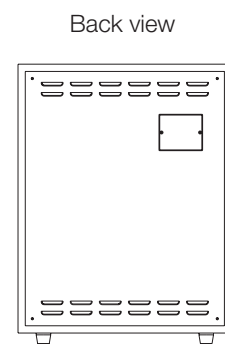
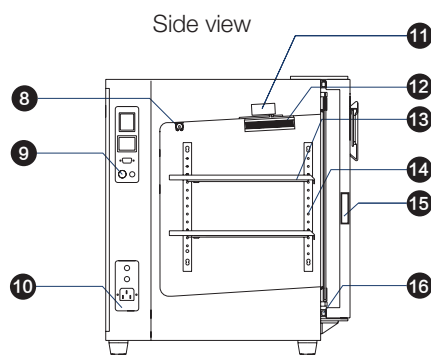
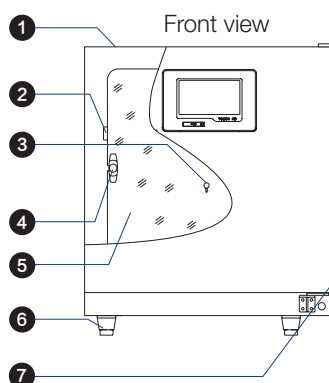
- High and low temp. and over temp. alarm
- Door open too long alarm
- Door temp. sensor failure alarm
- Chamber sensor failure alarm
- CO<sub>2</sub> condensation too high or too low alarm
- Disinfection and sterilization status reminder
- Independent temp. limiter alarm
- Power off alarm
- Over temp sensor failure alarm

## Technical parameter

| Model                            | BIO-150RHP                                                              | BIO-190RHP   | BIO-240RHP  |
|----------------------------------|-------------------------------------------------------------------------|--------------|-------------|
| Electrical requirement           | AC220V/50Hz                                                             |              |             |
| Input power                      | 750W                                                                    | 750W         | 950W        |
| Heating power                    | Air jacket micro computer PID control                                   |              |             |
| Temp. control range              | RT+3 - 50°C                                                             |              |             |
| Work environment temp            | +5 - 30°C                                                               |              |             |
| Temp. accuracy                   | ±0.1°C                                                                  |              |             |
| CO <sub>2</sub> control range    | 0 - 20%                                                                 |              |             |
| CO <sub>2</sub> control accuracy | ±0.1% (IR sensor)                                                       |              |             |
| CO <sub>2</sub> restore time     | (Door open 30s, recovery to 5%) ≤ 3min                                  |              |             |
| Temp. restore time               | (Door open 30s, recovery to 37°C) ≤ 8min                                |              |             |
| Related humidity                 | Nature vaporate > 95% (Can equip with related humidity digital display) |              |             |
| Volume                           | 155L                                                                    | 190L         | 240L        |
| Chamber size W×D×H(mm)           | 480×530×610                                                             | 520×530×690  | 600×630×670 |
| Overall size W×D×H(mm)           | 670×767×880                                                             | 708×710×1030 | 788×837×940 |
| Standard shelves qty             | 3 pcs                                                                   |              |             |
| Sterilization                    | 90 degree centigrade and UV sterilization + HEPA high efficient filter  |              |             |

Nature evaporate>95%

## CO<sub>2</sub> incubator structure



1. Outer 2. Door switch 3. Test hole 4. Glass door knob 5. Glass door 6. Adjustable feet 7. Door open collision block 8. Ultraviolet lamp  
9. CO<sub>2</sub> switch box 10. Main power input 11. Fan 12. HEPA 13. Shelves 14. Adjustable shelf holder 15. Door handle 16. Magnetic door seal