shaking water bath with double over-temperature protection

Shaking water bath is a kind of laboratory equipment that combines the function of constant temperature water bath and reciprocating oscillation, which can carry out homogeneous and efficient sample mixing and culture processing in the set temperature environment.

Shaking Water Bath

The stable temperature control system of the shaking water bath with the precise mechanical oscillation platform makes it a key equipment in the experiments of molecular biology, cell engineering, biochemical reaction, microbial fermentation and so on, which is widely used in the fields of scientific research, medicine, food, environmental protection and so on.

Features of Shaking Water Bath

1. **Suspended seismic structure:** the use of shock absorption buffer system, effectively eliminating mechanical resonance caused by oscillation, low noise and no vibration during operation, to protect the experimental accuracy.

2. **Intelligent LCD display interface:** large backlit LCD screen simultaneously displays the set temperature, actual temperature, oscillation frequency and remaining time, intuitive and convenient operation.
3. **Power failure memory and recovery function:** in the case of sudden power failure, the equipment can be automatically restored to the original set state after power on, to ensure the continuity of the experiment.
4. **Data protection mechanism:** with parameter encryption and memory function, to prevent misoperation and repeated settings, improve the efficiency of use.
5. **Ultra-long timer function:** built-in timer up to 500 hours, to the point of automatic stop and sound and light alarm prompts.
6. **High-performance brushless motor:** DC brushless motor drive, low maintenance, long life, stable speed without drift.
7. **Slow start technology:** built-in flexible acceleration circuit, the oscillation platform smooth start and stop, to avoid sample splash or damage.
8. **Multi-specification fixture support:** support for flask clamps, test tube racks, plate clamps and other fixtures, suitable for a variety of experimental vessels.
9. **Can be connected to the external cooling system:** support access to the circulating cooling water system, for experiments with lower temperature requirements.
10. **All stainless steel sink and accessories:** corrosion resistance, easy to clean, suitable for long-term operation.

11. **Double over-temperature protection:** automatically cut off the power supply when the water level is too low or the sample temperature is too high, preventing dry burning and sample damage.

Advantages

1. **Multi-functional:** the integration of constant temperature water bath and oscillation mixing function, saving the experimental space and equipment investment.
2. **Precise temperature control and uniform heating:** the use of water's high specific heat capacity to achieve uniform temperature propagation, can reach 0.1 °C precision and stability, to avoid local overheating, suitable for heat-sensitive samples.
3. **High stability operation:** even under the condition of long time high-speed oscillation, it can still keep the amplitude consistent and temperature control stable.
4. **High experimental safety:** with temperature over-limit protection, power failure recovery, start-up delay and other multiple safety protection mechanisms.
5. **Easy maintenance, flexible use:** easy to drain the water tank, brushless motor without maintenance, multi-clamp adaptation can realize rapid replacement.

Working Principle

The core principle of the shaking water bath is to combine the constant temperature water bath with mechanical oscillation, the water in the water bath is heated to the set temperature through the electric heating element, and real-time monitoring and feedback adjustment is carried out by the high-sensitivity temperature probe and the PID algorithm controller to ensure the constant temperature state.
Meanwhile, the oscillation mechanism is driven by a brushless motor and drives the platform for reciprocating motion through the eccentric shaft. Suspended buffer structure can effectively isolate the vibration source from the casing to prevent energy leakage and improve the smoothness of operation.
The liquid in the tank realizes the uniform distribution of temperature between different samples through natural convection and heat conduction, while the oscillating motion speeds up the process of heat exchange and material transfer between the liquid and the samples, which improves the efficiency of the reaction and the quality of the culture.

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Model	**SW30**	**SW50**
Volume	30L	50L
Temperature range	ambient+5°C to 99.9°C	
Temperature resolution	0.1°C	

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Model	**SW30**	**SW50**
Temperature accuracy	±0.1°C	
Temperature uniformity	±0.2°C at 37°C	
Gable lid included	yes	
Oscillation mode	reciprocating	
Shaking stroke	16mm(Default setting), 24mm	
Shaking speed	20rpm to 180rpm	
Speed increments	1rpm	
Number of triangular flasks	15x100ml or 11x250ml or 6x500ml	24x100ml or 15x250ml or 11x500ml or 6x1L
Platform dimensions	434x256mm	494x316mm
Timer	1 minute to 500hours	

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Model	**SW30**	**SW50**
Internal dimensions	510x300x200mm	570x360x250mm
External dimensions	796x360x380mm	856x420x430mm
Weight	29kg	33kg
Power	1600W	2000W
Power supply	220Vac, 50-60Hz	