

multiple parallel glass fermenter bioreactor system

Multiple parallel glass fermenter bioreactor system is a highly efficient fermentation equipment for small and medium test, as well as production stage, which is suitable for microbial fermentation, cell culture and enzyme engineering research.

Multiple Parallel Glass Fermenter Bioreactor System

The multiple parallel glass fermenter bioreactor system features high-quality silicon boron glass tanks (0.5–15L each), enabling simultaneous, independent fermentation experiments. Its transparent, high-temperature and corrosion-resistant design, combined with advanced automation and multi-parameter control, delivers reliable results for research and production in pharma, biotech, food, energy, agriculture, and environmental fields.

Main Features

1. **High-Performance Glass Tanks:** Silicon boron glass, resistant to high temperature and corrosion, mirror-polished ($<0.4\mu\text{m}$) for durability, easy cleaning, and disinfection.
2. **Multi-Function Control System:** Intelligent PID control for temperature, pH, DO, aeration, replenishment; supports data logging, remote management, and formulation programming.



3. **Precise Temperature Control:** 20–65°C range, jacketed water bath electric heating, automatic control and over-temperature protection.
4. **Efficient Aeration & Replenishment:** 0.2µm sterile filter, peristaltic pumps with DO/pH-linked auto adjustment, for optimal cell and bacterial growth.
5. **Multi-Channel Automatic Replenishment:** 4 independent peristaltic pumps, 20-segment programmable control, accurate flow measurement for flexible nutrient dosing.
6. **Flexible Gas & Foam Control:** Precision flow meter plus PID for accurate aeration; foam sensor and antifoam pump linkage for safe, stable operation.

Working Principle

1. Stable fermentation environment via top mechanical stirring and precise temperature control (20–65°C, electric heating & water bath).
2. Real-time online monitoring (pH, DO) with PLC/PID closed-loop adjustment—automatic control of air flow, stirring, and replenishment for optimal conditions.
3. Dynamic replenishment and foam management: peristaltic pumps adjust dosing per growth curve and sensor data; foam detection auto-regulates antifoam agent.
4. Sterile aeration: 0.2µm filter ensures contamination-free gas supply; PID-controlled flow meter for dissolved oxygen management.

Application Areas

1. **Pharmaceutical:** Bacterial/cell fermentation, antibiotics, vaccines, protein drugs, enzyme engineering.
2. **Food & Beverage:** Yeast, lactic/acetic acid bacteria, product consistency and quality control.
3. **Biotech & Research:** Genetic/metabolic engineering, enzyme production, multi-parameter experimental platforms for universities and institutes.
4. **Agriculture & Environment:** Biopesticide, fertilizer fermentation, organic waste biodegradation, wastewater/sludge treatment.
5. **Energy & Chemical:** Bioethanol and bioenergy production, organic chemical synthesis, biodegradable plastics, natural product fermentation.