anaerobic workstation with hypoxic function for inoculation

The anaerobic hypoxic workstation creates a hypoxic or anaerobic environment similar to that of human tissue or natural ecosystem by strictly regulating the gas composition and humidity in the chamber to meet the demand for special atmosphere in the fields of microbiology, clinical testing, food fermentation and so on.

Anaerobic Hypoxic Workstation

The anaerobic hypoxic workstation supports simultaneous cultivation of multiple strains of bacteria, facilitating scientific research and industrial applications.

Features

1. **Accurate gas regulation:** Precisely adjusts oxygen and carbon dioxide concentrations, simulating low-oxygen states for microaerophilic and anaerobic bacteria growth.
2. **Automatic humidity control:** Built-in system dynamically manages chamber humidity, preventing media from becoming too dry or too wet.

3. **Flexible operation mode:** Supports free switching between anaerobic and low oxygen modes to suit experimental needs.
4. **Various operating interfaces:** Provides sleeveless and traditional sleeve operation for different lab habits and safety requirements.
5. **High-efficiency air filtration:** Optional HEPA system prevents airborne particles and impurities from entering the chamber.

Core Advantages

1. **Multi-species applicability:** Supports national standard microbial culture needs, including Shigella (anaerobic, 41.5°C), Campylobacter jejuni (aerobic, 25°C), Clostridium perfringens (anaerobic, 36°C), Clostridium botulinum (anaerobic, 35°C), and Lactobacillus (anaerobic, 36°C).
2. **Stable atmosphere:** Catalyst and regulator maintain oxygen content within a reasonable range for reliable microorganism growth.
3. **Safe, convenient operation:** Sleeveless system reduces glove breakage risk, improves flexibility, and operator safety.
4. **Energy saving, eco-friendly:** Low power consumption with intelligent control for gas and humidity allocation.

Working Principle

1. **Gas replacement:** Built-in vacuum pump removes air, then fills the chamber with preset nitrogen, hydrogen, and CO_2 mixture for low-oxygen or anaerobic environments.
2. **Catalytic deoxidization:** Hydrogen and residual oxygen react with palladium catalyst, forming water and reducing oxygen concentration.
3. **Automatic humidity adjustment:** Humidification device and sensor monitor and maintain optimal humidity.
4. **Gas monitoring and feedback:** Sensors detect O_2 and CO_2 in real time, software adjusts input for stable parameter control.

Application Fields

1. **Microbiology research:** Cultivation of pathogenic, probiotic, and environmental bacteria needing special oxygen conditions.
2. **Clinical testing:** Accurate culture for pathogen identification, drug sensitivity, and medical diagnostics.
3. **Food & fermentation industry:** Efficient growth of probiotics and fermentation strains, process optimization, and quality improvement.
4. **Environmental science & ecology:** Simulates low-oxygen soil/sediment conditions for ecological studies.
5. **Drug development & toxicology:** Simulates body's low oxygen environment to evaluate drug effects and advance precision medicine.

Technical Parameters & Configuration List

- Power supply: 220V, 50/60Hz
- Power: ~4A
- Ambient temperature: 25°C
- Relative humidity: <90%
- Configuration includes:
    - 1 main unit
    - 1 set sleeveless in/out system
    - 8 Petri dish racks
    - 1 fluorescent lamp
    - 1 UV lamp
    - 1 bag catalyst (600g)
    - 1 bag decontamination (600g)
    - 1 bottle lubrication powder

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- 1 set anaerobic indicator pump (A/B liquid)
- 1 set single-dish transfer system
- 1 internal power socket
- 1 power cord
- 1 operation manual
- 1 set installation & debugging tools