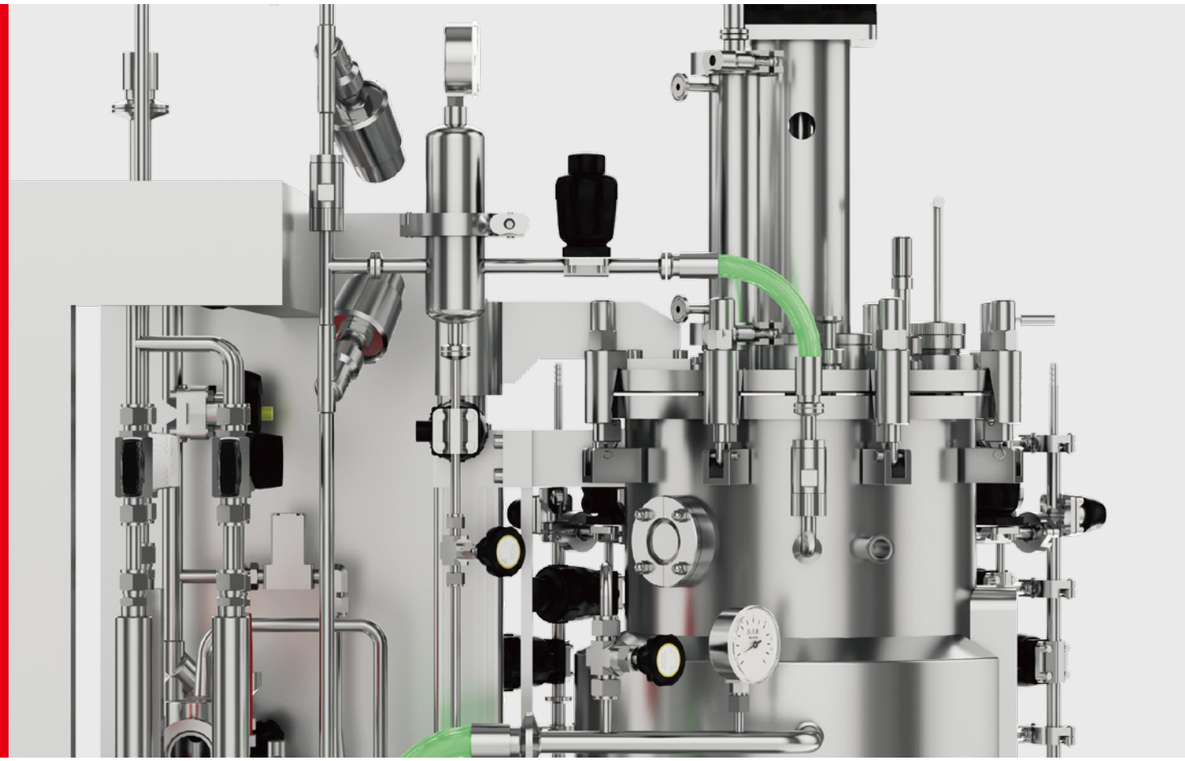
BioVita S

Stainless Steel Bioreactor
Optimizing Progress with Flexibility



BioMatrix Life Science
Tel: +86 532 87890032
Email: info@biomatrix.info

Company Overview

BioMatrix is a leading provider of innovative fermentation solutions with a focus on efficiency and precision. With years of expertise in biotechnology and a commitment to sustainable production, we deliver cutting-edge systems that meet the diverse needs of industries such as pharmaceuticals, food & beverage, and environmental engineering.

Technical Expertise

Our state-of-the-art fermentation tanks are engineered for optimal performance, offering advanced features like precise temperature control, real-time monitoring, and energy-efficient operation. Our team of skilled engineers and scientists are dedicated to delivering customized solutions that drive production success.

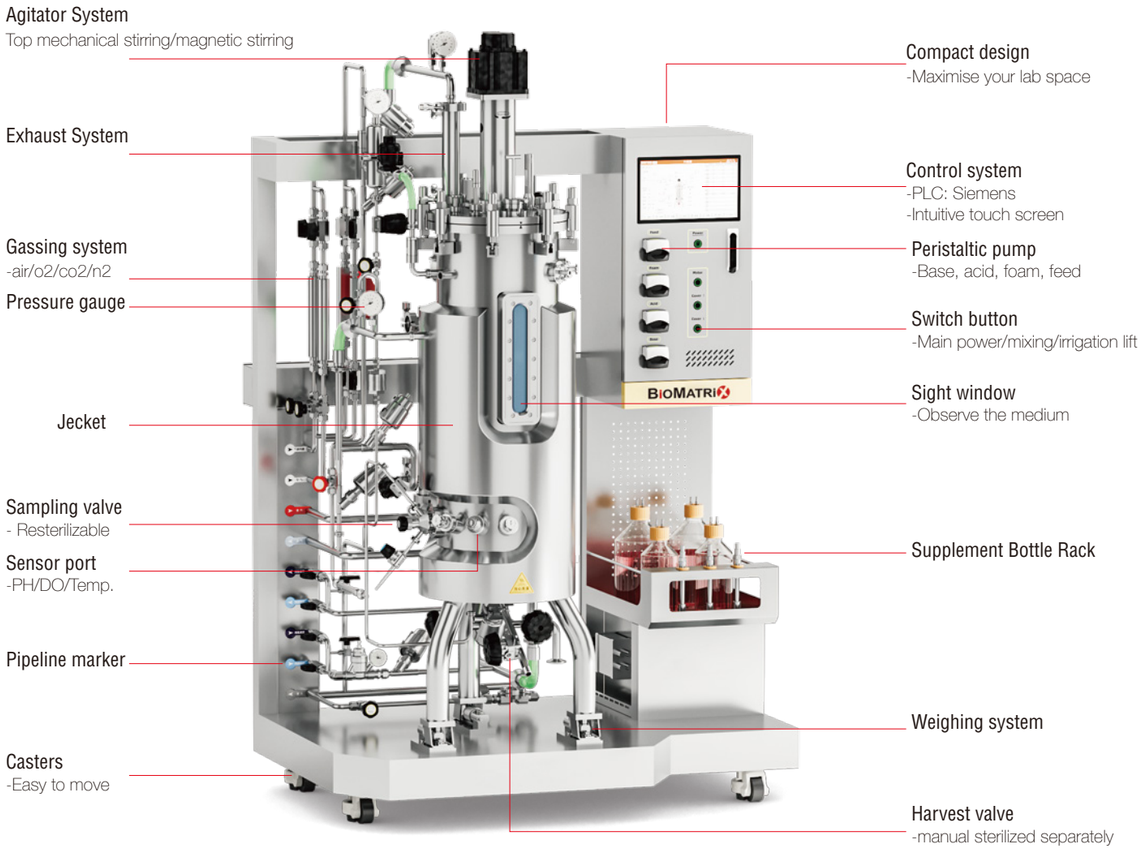
Industry Experience

With over a decade of experience in the biotech sector, we have successfully partnered with clients globally, helping them streamline their processes and achieve superior fermentation results. Our solutions are trusted by top-tier companies for their reliability, scalability, and performance.

BioVita S

System Concept

The BioVita S is a Sterilizable-In-Place (SIP) Bioreactor designed for microorganism and cell culture cultivation.
Available in culture vessel sizes ranging from 5 L to 200 L.
Flexible integration into your laboratory setup.
Steam heating allows for easy sterilization of the culture vessel.
Convenient mobility with casters for easy relocation of the unit.

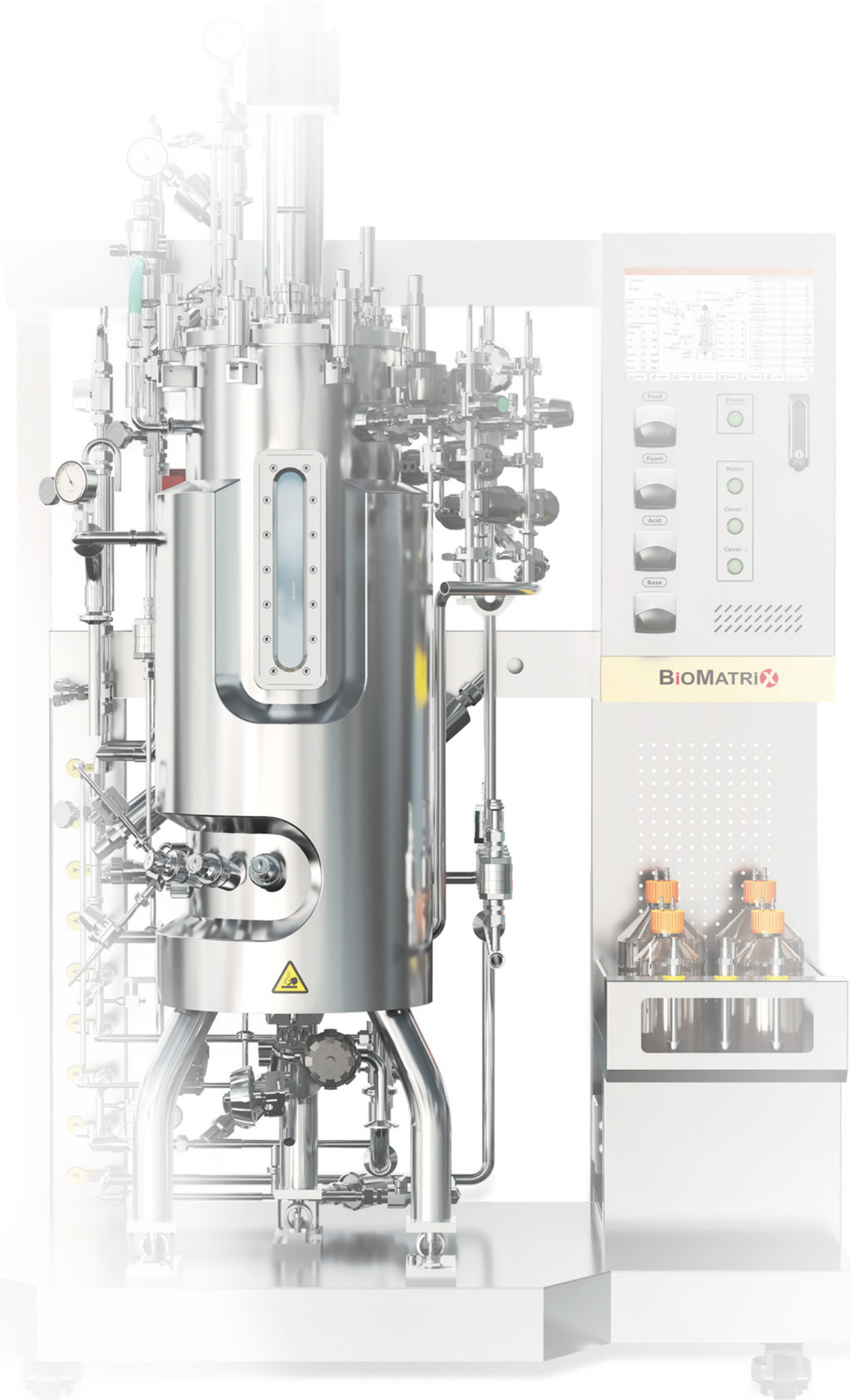


Typical Applications

Process development for vaccines, recombinant proteins, and monoclonal antibodies
Biofuel production and secondary metabolite development
Batch, fed-batch, continuous, and perfusion process strategy development
Scale-up and scale-down experiments
Small-scale production (e.g., diagnostic antibodies)
High cell density fermentation
Suspension cultures and adherent cell culture with microcarriers
Cultivation of filamentous organisms

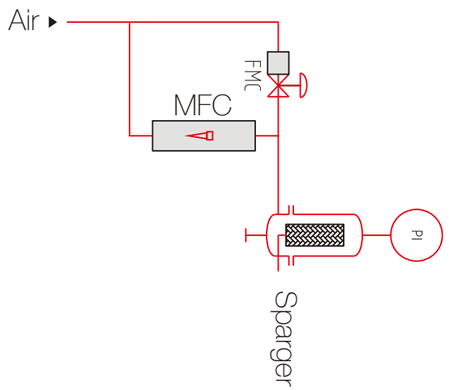
Gassing Strategies

Flexible gassing solutions for a wide range of applications, from high-cell-density fermentation requiring elevated oxygen levels to cell culture with complex gas mixing demands, accommodating up to four gases.



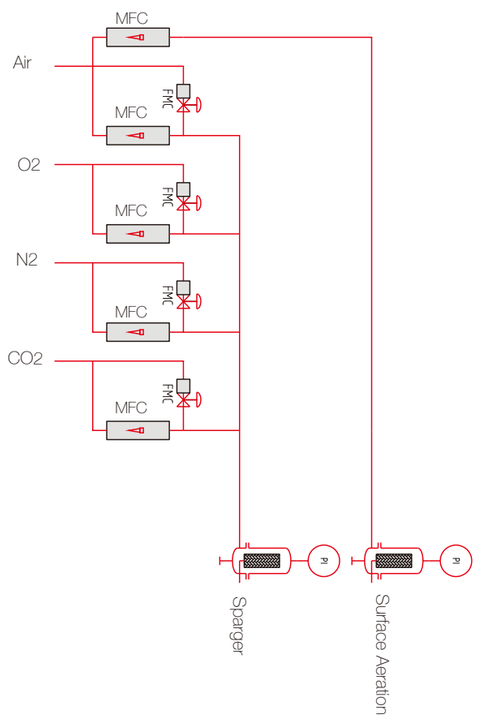
Microbial Applications

Flexible configurations allow for aeration using either air or oxygen. In anaerobic processes, the air inlet can also be utilized for nitrogen supply. Standardly equipped with solenoid valves and a flow meter, the system guarantees a consistent and reliable gas supply. For more precise control, optional mass flow controllers can be added to ensure accurate gas dosing, which is especially useful for balancing studies when coupled with exhaust analysis.



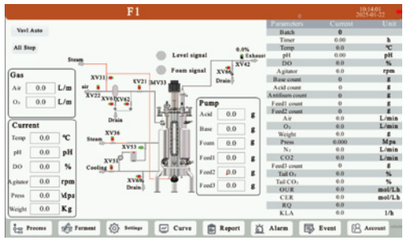
Cell Culture and Multi-Purpose Applications

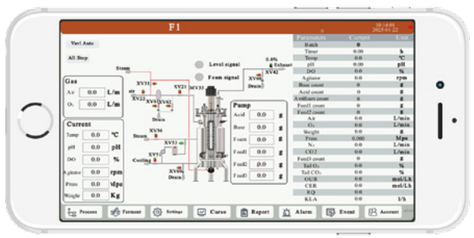
With five separate gas paths, featuring solenoid valves and flow meters, or up to four optional mass flow controllers, the system provides exceptional flexibility and precise control.



Intelligent Remote Monitoring with the MCGS Platform

This system enables real-time monitoring and control of fermentation processes from remote locations. Integrated with the MCGS platform, it provides seamless data access, advanced analytics, and automation capabilities for optimized performance and troubleshooting.





Feed Supplement System

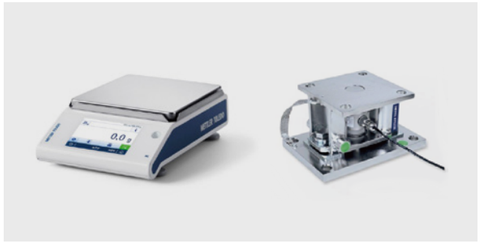
Customized Feeding Modes:
Supports both manual and automatic on-demand replenishment to meet diverse experimental needs.
Intelligent Cascade Control:
Positive and negative cascade regulation based on pH and DO for precise process control.
Versatile Feeding Strategies:
Supports equation-based and exponential feeding to align with microbial growth phases, enhancing fermentation efficiency.

Audit Trail

Automated Recording & Traceability:
Automatically logs all operations, allowing full traceability of the experimental process.
Real-Time Data Protection:
Advanced permission management restricts data export and deletion to prevent data breaches.
Intelligent Control:
HMI supports an independent audit trail function, enabling seamless and unrestricted intelligent monitoring.

Optional Accessories

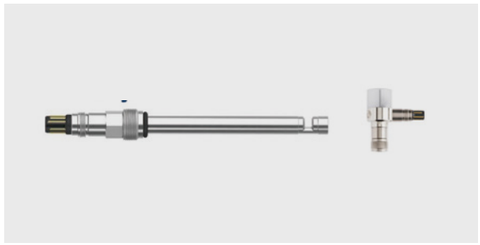
To enhance the user experience with our fermentors, we offer a selection of high-quality accessories designed to meet the diverse needs of various industries and working conditions. Users can choose the most suitable accessories based on their specific requirements.



Feeding and weighing system

Exhaust gas analyzer

Living cell online concentration



Online OD/CO2

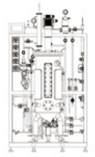
Air compressor

Chiller

Steam Generator

CIP station

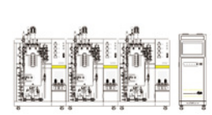
Technical Specifications

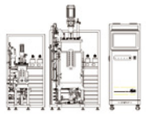


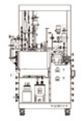
Model			Microbial bioreactor	Cell bioreactor
Stainless steel vessel	Total volume (L)		5-10000	5-10000
	Working volume(L)		30%-70%	30%-70%
	Standard material of inner vessel		SUS316	SUS316
	Standard material of jecket		SUS304	SUS304
	Polishing precision		Ra0.4～0.6	Ra0.4～0.6
	Sterilization		in-situ sterilization	in-situ sterilization
Gas supply system	Gassing	Standard	air	air/o2/co2/n2
		"Optional (O2/N2/CO2/CH4)"	◎	◎
	Gas flow control	Roto flowmeter	●	●
		Mass flowmeter	◎	◎
Stirring system	Stirrer	Machanical stirring	Standard for bacterial culture	-
		Speed (RPM)	0-1000rpm ±1rpm	-
		Magnetic stirring	◎	Standard for cell culture
		Speed (RPM)	-	0-300rpm ±1rpm
Temperature control	Temperature control method		PT100, PID control	PT100, PID control
	Temperature range		cooling water +5℃~70℃ ±0.1℃	cooling water +5℃~70℃ ±0.1℃
Humidity control	Humidity control range		-	-
Feed supplement system	Peristaltic pumps		Standard with 4 high-precision peristaltic pumps	Standard with 4 high-precision peristaltic pumps
Detection electrode		Temperature	●	●
		pH	●	●
		DO	●	●
		Antifoam	●	●
		CO2	◎	◎
		OD	◎	◎
		Hygrometer	-	-
Touchscreen controller		Kunlun	●	●
		Siemens	◎	◎
Remote control system			◎	◎

● Standard ◎ Optional

Technical Specifications







Model			Multi-tank bioreactor	Multi-stage bioreactor	Solid state bioreactor
Stainless steel vessel	Total volume (L)		5-500	5-5000	10-2000
	Working volume(L)		30%-70%	30%-70%	30%-60%
	Standard material of inner vessel		SUS316	SUS316	SUS304
	Standard material of jecket		SUS304	SUS304	SUS304
	Polishing precision		Ra0.4～0.6	Ra0.4～0.6	Ra0.4
	Sterilization		in-situ sterilization	in-situ sterilization	in-situ sterilization
Gas supply system	Gassing	Standard	air	air	air
		"Optional (O2/N2/CO2/CH4)"	◎	◎	◎
	Gas flow control	Roto flowmeter	●	●	●
		Mass flowmeter	◎	◎	◎
Stirring system	Stirrer	Machanical stirring	Standard for bacterial culture		Horizontal mechanical mixing
		Speed (RPM)	0-1000rpm ±1rpm		10-30rpm ±1rpm
		Magnetic stirring	Standard for cell culture		-
		Speed (RPM)	0-300rpm ±1rpm		-
Temperature control	Temperature control method		PT100, PID control		PT100, PID control
	Temperature range		cooling water +5℃~70℃ ±0.1℃		0~40.0℃±0.1℃
Humidity control	Humidity control range		-		30%~100%
Feed supplement system	Peristaltic pumps		Standard with 4 high-precision peristaltic pumps		-
Detection electrode		Temperature	●	●	●
		pH	●	●	-
		DO	●	●	-
		Antifoam	●	●	-
		CO2	◎	◎	-
		OD	◎	◎	-
		Hygrometer	-	-	●
Touchscreen controller		Kunlun	●	●	●
		Siemens	◎	◎	◎
Remote control system			◎	◎	-

● Standard ◎ Optional