Intelligent Bio Plant System

--------In situ sterilizable Fermentor (10L~30T)

Fermentor SDL 10L~50L

Silver Double Lim ited manufactures various equipm ent related to bio-process fo r biotechnology, biochemical, pharmaceutical, agricultural, environment, life science industry. Especially, SiDoLim's high perform ance of bioreactor system is applicab le for both res earch and industrial bio-processing facilities.

The SiDoLim in situ sterilizable fermentor (10L~50L) system is a lab scale fermentor and designed for ease of use. The thermal heater is installed in the jacket of the fermentor vessel and not only the heater controls the temperature in the vessel but also it raises the temperature up to the sterilization temperature that it does not need the additional autoclave system. As this system is designed in the spirit of plant system that the result from this system can be directly applied to the mass production scheme. This system can be used to develop new products in the laboratory of the university or venture company. The result of the wonderful product can be applied in the SiDoLim pilot scale system directly which is manufactured by Silver Double Limited.

As this system uses the same integrated control board at the pilot and plant scale fermentor system.

Features

- Bench top, built-in peristaltic pumps
- Automated in-situ sterilizable Fermenter
- Interchangeable Vessels (10~50L)
- Integrated Microprocessor controller
- Easy to operate, wash and make maintenance as it has the open frame structure and uses stainless steel (SUS316L) plate.
- Built-in type heater makes to be self-sterilization procedures.
- The pH, DO, temperature and rotation speed of the agitator are measured and controlled by the integrated controller system.
- The temperature of the vessel is measured by the RTD (Pt-100) and controlled by the digital PID control algorithm.
- 150W DC servo motor is installed on the top of the head plate and the carbon-tungsten carbide mechanical seal protects the agitation system from the contamination.
- The rotation speed of the agitator is controlled from 50 rpm to 1,000 rpm.
- The air driven diaphragm style valve protects from contamination and easy to wash and make maintenance.

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Vessel

- The stainless steel (SUS316L) is used to prevent contamination and rust.
- The water jacket system is adopted for precise temperature control.
- The sight glass makes to monitor the status of the media.
- The spare ports are installed on the head plate that the auxiliary sensors can be installed.
- The sensor ports are installed in the circumferential direction on the lower side of the vessel.

Specification

Agitation	Drive	DC motor, AC Gear motor Top drive (mechanical seal driving)
	Range	50~1000 rpm ±1 rpm
	Impellers	Turbine impeller(SUS316L) Foam breaker (SUS316L)
	Sensor	Magnetic Hall sensor
	Control	Microprocessor based PID Control
Materials & Finish	Vessel	Using 316L stainless steel it is polished mechanically and electrically
	Piping	316L stainless steel prevent contamination and is polished
	O-rings/Gaskets	Silicon material is used for the O-ring and the EPDM is used for gasket
Sterilization		Built-in heater makers the in-situ sterilizing for the vessel, head plate, filter, aeration pipe lines and etc. in 105℃~130℃ temperature range automatically
Temperature	Range(℃)	From 3℃ above the cooling water temperature to 80℃ (accuracy ±0.1℃)
	Sensor	RTD (Pt-100)
	Control	The built-in heater cartridge raises and cooling water pulling downs the water temperature and water pump circulates the water inside of the jacket
Aeration	Sparger	Ring sparger (SUS 316L)
	Intel Filter	The cartridge type sterilizable pleated type 0.2μm absolute filter specifications(option item)
	Out Filter	The same as internal filter specification(option item)

	Control Range	Different vessel size and/or ordered specifications
Pressure Control		The back pressure is controlled manually and/or automatically
Control Unit	Panel	8.5" Graphic Color LCD, Membrane keypad
	Communications	Memory stick, printer, computer with the RS-232C communications protocol.
	Controller Board	Microprocessor based integrated controller board is adopted to measure, control and display the fermentation system
Power Supply		220V 50/60Hz, Single phase
Data Storage		pH, DO, Pressure, Temperature and Agitation speed

Vessel Dimension

Catalog Number	Total Vol. (working Vol.)	Inner Dia. (mm)	Inner Heighta (mm)	Impeller Diameter (mm)	D/P (%)	H:D
		D	H	P		
SD010	10L (7L)	190	365	80	42	2 :1
SD015	15L (10L)	215	430	90	42	2 :1
SD020	20L (14L)	235	470	95	40	2 :1
SD030	30L (20L)	260	555	105	40	2 :1
SD040	40L (30L)	295	590	120	40	2 :1
SD050	50L(40L)	335	635	135	40	2 :1