

# Fermentor SDT 300L~1000L

The Fermentor SiDoLim SDT (300L~1000L) is a large size pilot scale fermentation systems and the top driving mechanism is applied. The head plate lifting system by air cylinder and linear motion guide is adapted in standard specification.

The system can be used for microbial, insect and mammalian cell culturing procedures. The stainless steel (SUS 316L) vessel and the whole attachments can be sterilized automatically or manually in this pilot scale fermentation system and the whole fermentation procedures can be also performed automatically. The measured values of the procedures and monitored data are graphically displayed in the 8.5" color LCD screen and all the control parameters can be adjusted in the graphic mode.

This system is designed with the spirit of mass production process to apply the system in the pilot scale for the test production to the mass production in the small scale plant.



- System can be washed and repaired easily as the head plate lifting system is adapted in the standard specification.
- 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.
- The DC servo motor or AC geared 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 air driven diaphragm style valve protects from contamination and easy to wash and make maintenance.

## Vessel

- Stainless steel (SUS 316L) is used to prevent contamination and rusting.
- Water jacket system is adopted for precise temperature control.
- sight glass makes to monitor the status of the media.
- Redundant ports are installed on the head plate that the auxiliary sensor can be installed.
- Sensor ports are made in the circumferential direction on the lower side of the vessel.



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## Specification

Agitation	Drive	DC motor, AC Gear motor Top drive motor (mechanical drive)
	Range	50~550 rpm $\pm$ 1 rpm
	Sensor	Magnetic Hall sensor
	Impellers	Turbine impeller(SUS 316L) Foam breaker(SUS 316L)
	Control	Microprocessor based PID
Temperature	Range( $^{\circ}$ C)	From 3 $^{\circ}$ C above the cooling water temperature to 80 $^{\circ}$ C (accuracy $\pm$ 0.1 $^{\circ}$ C)
	Control	The temperature is automatically controlled by the external heat exchanger system.
	Sensor	RTD(Pt-100)
Aeration	Sparger	Ring sparger (SUS 316L)
	Inlet Filter	The cartridge type sterilizable pleated type 0.2 $\mu$ m absolute filter is applied.
	Outer Filter	The same as inlet filter specification.(optional item)
	Control Range	Different vessel size and/or ordered specifications.
Materials & Finish	Vessel	Using 316L stainless steel it is polished mechanically and/or electrically.
	Piping	316L stainless steel prevents contamination and is polished by electrically.
	O-rings / Gaskets	Viton or silicone material is used for the O-ring and the EPDM is used for the gasket.
Control Unit	Panel	8.5" Graphic Color LCD, Membrane keypad
	Communications	Memory stick, printer, computer with the RS-232C communication protocol
	Controller Board	Microprocessor based integrated controller board is adopted to measure, control and display the fermentation system
Pressure control	The pressure is controlled manually and/or automatically	



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Power Supply	220V 50/60Hz single phase, 380V 50/60Hz three phase
Data Storage	pH, DO, Pressure, Temperature and Agitation speed
Heating Plate	The head lift system is powered by air cylinder and guided by two sets of linear motion guide. The lifting load capacity can be adjusted and designed for the size of the head plate.

#### Vessel Selection

Order Number	Total Vol. (Working Vol.)	Inner Dia. (mm)	Inner Height (mm)	Impeller Dia. (mm)	D/P (%)	H: D
		D	H	P		
PD300	300L (210L)	550	1255	220	40	2.3 :1
PD500	500L (350L)	680	1400	280	40	2 :1
PD700	700L (500L)	750	1600	300	40	2 :1
PD800	800L (600L)	800	1800	400	40	2 :1
PD900	900L (700L)	850	2000	400	40	2 :1
PD1000	1000L (850L)	900	2200	450	40	2 :1



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