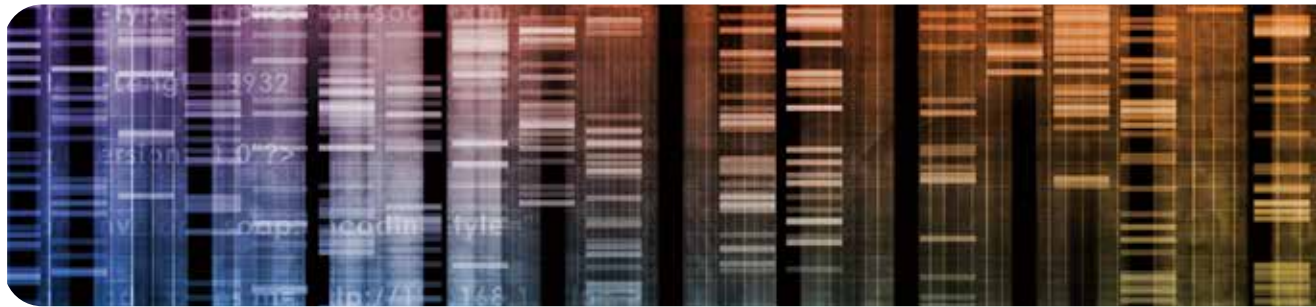




# 2014 BROCHURE

*Innovative Life Sciences Tools*



# Winpact Laboratory Fermentor/Bioreactor

INNOVATIVE CULTIVATION SOLUTIONS

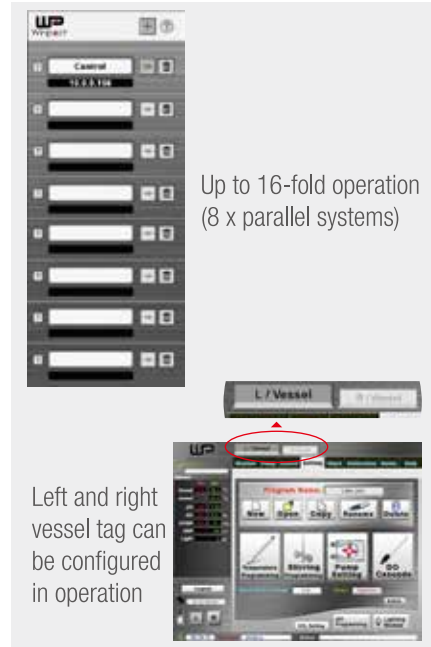
## Parallel System: FS-05 Series

Our FS-05 controller can operate with five types of vessels: double jacketed dish bottom vessel, single wall dish bottom vessel, air lifter vessel, single wall dish bottom vessel with heating blanket, single wall plain bottom vessel with heating base unit.



5L Vessel

1L Vessel



Up to 16-fold operation  
(8 x parallel systems)

Left and right vessel tag can be configured in operation

### Exclusive Features for Parallel System:

- NEW** • Single or dual vessels for independent or simultaneous control
- NEW** • Hardware and software built for compatibility for thermostat and dry heating systems
- NEW** • 8 integrated assignable and programmable Watson Marlow pump heads with high resistant to acid and base
- NEW** • Pre-configured software for up to 16-fold operation, optimized for all vessel types with remote control

### Standard Features for Winpact Controller:

- NEW** • Calculated peristaltic pump flow rate and total volumes. Calibration needed via touchscreen
- NEW** • pH stat with smart feeding technology
- NEW** • 8 user account with login & password for maximum protection
- NEW** • Offline data trend plotting software for easy publish and graphical analysis
  - Two temp. controlling systems for your application: Thermostat & Dry-Heating
  - 10.4" large color touch screen & graphical user interface, easy to operate
  - SUS316L for supreme quality and sustainability for experiment result
  - Linux-based system impervious to virus intrusion
  - Modular system for easy maintenance and system upgrade
  - Complete vessel types and working volume suitable for most application
  - Provides various and extendable optional devices
  - 15 steps programmable control for pH, temp, feeding and agitation for sophisticated protocol
  - Store up to 59,994 programs for different conditions
  - Store up to 100 processing monitoring data files
  - Data exporting interface through USB port or remote monitoring (CSV file)
  - No software purchase required for Ethernet remote monitoring & controlling
  - Quick connector for easy operation and set up
  - Real-time notification for controlling and monitoring system parameters from mobile phone-global exclusive (optional)
  - Unique DO Cascade feature with intelligent Feeding Strategy
  - Customization ports/impeller available
  - CE certified and ISO accredited

## How to place order for your Parallel Fermentor or Bioreactor?

Step1: Select your controller  
FS-05-220



Step2: Select 2 vessel packages  
EX: FS-V-A03 + FS-V-D05P



Step3: Add the Parallel Bioreactor start up kits  
FS-A-SK20

Glass Feeding Bottle  
Autoclavable Disc Type Filter  
Connecting Tube  
Silicone Tubing Clamps  
Silicone Tube

Step4: Add any optional devices you desired  
EX: FS-O-GM



### Thermostat System: FS-01 series

Our FS-01 controller can operate with three types of vessels: double jacketed dish bottom vessels, single wall dish bottom vessels, and air lifter vessels.



### Dry Heating System: FS-02 series

Our FS-02 controller can operate with two types of vessels: single wall dish bottom vessels with heating blanket, and single wall plain bottom vessels with heating base unit.



### Specifications

Controller	Thermostat System			Dry Heating System	
<b>Vessel</b>	Double Jacketed Dish Bottom (FS-V-A series)	Single Wall Dish Bottom (FS-V-B series)	Air Lifter (FS-V-C series)	Single Wall Dish Bottom with Heating blanket (FS-V-B series)	Single Wall Plain Bottom with Heating base unit (FS-V-D series)
<b>Agitation motor</b>	Brushless motor	Brushless motor	N / A	Brushless motor	Brushless motor
<b>Impeller</b>	Pitched-blade	Rushton	N / A	Rushton	Rushton
<b>Temp range</b>	5 °C above coolant to 60°C	5 °C above coolant to 60°C	5 °C above coolant to 60°C	5°C above coolant to 60°C	5°C above coolant to 90°C
<b>Vessel size</b>	1 - 10L	1 - 10L	5L only, single wall or double jacket	1 - 20L	1 - 10L
<b>Speed range</b>	30 - 300 rpm	30 - 1200 rpm (1 - 7L) 30 - 1000 rpm (10L)	N / A	30 - 1200 rpm (1 - 7L) 30 - 1,000 rpm (10L) 30 - 700 rpm (15, 20L)	30 - 1200 rpm (1 - 7L) 30 - 1000 rpm (10L)
<b>Heating</b>	Built-in heat exchanger			Heating blanket	Heating base unit
<b>Cooling</b>	External chiller, automatic cooling water valve				
<b>Aeration</b>	Orifice ring sparger	Orifice ring sparger	PTFE micro sparger	Orifice ring sparger	Orifice ring sparger
<b>Grounding port</b>	No need	No need	Yes	No need	No need
<b>Application</b>	Excellent for temperature sensitive and shear-force sensitive cells such as mammalian and insect cell culture.	Great for aerobic or anaerobic microbial culture; suitable for plant cell and photosynthesis cell culture	Excellent for shear-sensitive cells; ideal for plant cells, fungal cells, algae cell and photosynthesis cell culture	Ideal for rapid temperature change aerobic and anaerobic microbial (bacterial and yeast) fermentation	Excellent for aerobic and anaerobic microbial (bacteria, yeast) culture, such as E.coli

\*Technical specification subject to change without notice.

### Package Configuration

Winpact	Standard Package	Basic Package
<b>Controller</b>	FS-01 / FS-02	FS-0101 / FS-0201
<b>Vessel type</b>	A, B, C / B,D	
<b>Impeller</b>	yes	yes
<b>Brushless motor</b>	yes	yes
<b>Air pump/compressor</b>	no, not included	no, not included
<b>Low temp water circulator</b>	no, not included	no, not included
<b>Sterilization autoclave</b>	no, not included	no, not included
<b>Peristaltic pump</b>	yes, 4 built-in (max. 5)	no, optional (max. 5)
<b>Probe</b>	<b>Temp probe</b>	yes
	<b>pH probe</b>	yes
	<b>DO probe</b>	yes
	<b>Foam probe</b>	yes
<b>Start-up kit</b>	yes	no








Standard package



Basic package

\*All Basic package are fully upgradable to Standard package

# Winpact Vessel Selection Guide

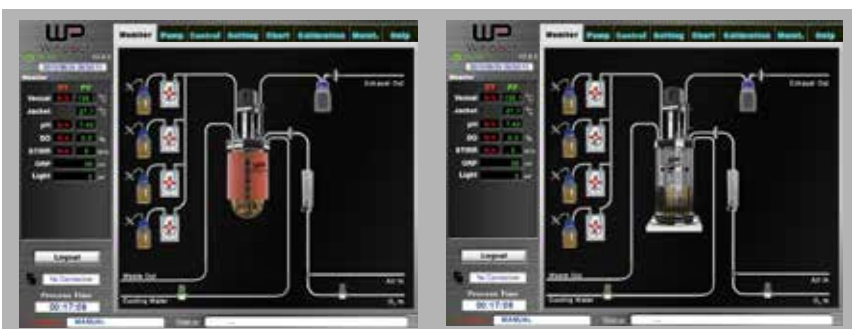
<b>Vessel</b>	Double Jacketed Dish Bottom Vessel	Single Wall Dish Bottom Vessel	Air Lifter Vessel	Single Wall Dish Bottom Vessel with Heating Blanket	Single Wall Plain Bottom Vessel with Heating Base Unit
	FS-V-A series	FS-V-B series	FS-V-C series	FS-V-B series	FS-V-D series
<b>Controller</b>					
<b>Thermostat System</b>	✓	✓	✓		
<b>FS-01</b>					
<b>Dry Heating System</b>				✓	✓
<b>FS-02</b>					
<b>Parallel System</b>	✓	✓	✓	✓	✓
<b>FS-05</b>					

## Control Interface

### Thermostat System: FS-01 series








### Dry Heating System: FS-02 series



### Parallel System: FS-05 series



## Vessel Information

	<b>Vessel Type</b>	Double Jacketed Dish Bottom Vessel (FS-V-A series)						
	<b>Material</b>	Borosilicate glass / 316L stainless steel for headplate and all fittings						
	<b>Working Volume</b>	1L	3L	5L	7L	10L		
	<b>Total Volume</b>	1.3L	3.8L	6.8L	8.9L	13.4L		
	<b>Vessel Type</b>	Single Wall Dish Bottom Vessel (FS-V-B series)						
	<b>Material</b>	Borosilicate glass / 316L stainless steel for headplate and all fittings						
	<b>Working Volume</b>	1L	3L	5L	7L	10L		
	<b>Total Volume</b>	1.3L	3.8L	6.8L	8.9L	13.4L		
	<b>Vessel Type</b>	Air Lifter Vessel (FS-V-C series)						
	<b>Material</b>	Borosilicate glass / 316L stainless steel for headplate and all fittings						
	<b>Working Volume</b>	5L						
	<b>Total Volume</b>	6.9L						
	<b>Vessel Type</b>	Single Wall Dish Bottom Vessel with Heating Blanket (FS-V-B series)						
	<b>Material</b>	Borosilicate glass / 316L stainless steel for headplate and all fittings						
	<b>Working Volume</b>	1L	3L	5L	7L	10L	15L	20L
	<b>Total Volume</b>	1.3L	3.8L	6.8L	8.9L	12.5L	18.0L	24.4L
	<b>Vessel Type</b>	Single Wall Plain Bottom Vessel with Heating Base Unit (FS-V-D series)						
	<b>Material</b>	Borosilicate glass / 316L stainless steel for headplate and all fittings						
	<b>Working Volume</b>	1L	3L	5L	7L	10L		
	<b>Total Volume</b>	1.3L	3.7L	6.5L	9.1L	13L		

## Vessel Application

Application \ Vessel	Double Jacketed Dish Bottom Vessel	Single Wall Dish Bottom Vessel	Air Lifter Vessel	Single Wall Dish Bottom Vessel with Heating Blanket	Single Wall Plain Bottom Vessel with Heating Base Unit
	FS-V-A series	FS-V-B series	FS-V-C series	FS-V-B series	FS-V-D series
Mammalian Cell Culture	● ●	● ○	○ ○	● ○	○ ○
Aerobic Microorganism Culture (Note 1)	● ●	● ●	● ●	● ●	● ●
Micro-aerobic Microorganism Culture (Note 2)	● ●	● ●	○ ○	● ●	● ●
Anaerobic Microorganism Culture (Note 3)	● ●	● ●	○ ○	● ●	● ●
Fragile Cell Culture (Note 4)	● ●	● ○	● ●	● ○	○ ○
Photosynthesis Cell Culture (Note 5)	● ○	● ●	● ●	○ ○	● ○
Plant Cell Culture	● ○	● ○	● ●	○ ○	○ ○
Insect Cell Culture	● ●	● ○	○ ○	● ○	○ ○

● ● Excellent      ● ○ Good      ○ ○ Not Recommended

Note:

1. Some bacteria; yeast; fungi
2. Facultative culture (For example, some Lactobacillus; ethanol production)
3. Same as Note 2
4. This vessel is excellent for fragile cells that are easily sheared by any type of mechanical impeller
5. Plant; algae; cyanobacteria (blue-green algae)

# SIP (Sterilization-in-place) Fermentation System

## 500L System

## 100L System

### Peristaltic Pump

Built-in three rotor Easy-Load pumps for all your feeding needs

### Platform

(Optional device)  
For easy access for viewing your experiment, available upon request



### Motor

Manual or automatic control of constant agitation speed

### Head Plate

Ports Arrangement



### Harvest Valve



### Piping System

SUS-316L EP internal polished tubing for parts direct contact with medium

### Stainless Steel Vessel

With special designed heating jacket provides better heating efficiency (50L and up)

### Control Station

Large screen and graphical user interface

- **Flexibility**  
Modular option to fulfill various needs for different applications  
Optional CIP-ready connection ports
- **Versatility**  
Multi-lingual interface  
Fully automated process with remote monitoring  
15 steps automatic program setting
- **Sterility**  
Electro-polished tubing and valves, BPE standard  
Orbital welding to ensure minimal residue buildup
- **Durability and Safety**  
SUS316L stainless steel with manual mechanical control  
Exhaust pressure relief valve for max. safety precaution
- **Security**  
Password protection for multiple users with customized access levels



# Winpact Accessories and Optional Devices



pH Probe



DO Probe



Temperature Probe



ORP Probe



Antifoam Probe



Brushless Motor



Impeller



Composite Handle



Gas Mixing Station



CO<sub>2</sub>/O<sub>2</sub> Off Gas Analyzer



Mass Flow Controller



Oxygen Enrichment



Consumable Kit



Mobile SMS Module



External Pump



Lighting Module



Sampling Device



Stainless Steel Condenser



Feeding Bottle Loading Port



Headplate / Vessel Stand



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v1.1

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