



2016 Catalogue

 **major
science**

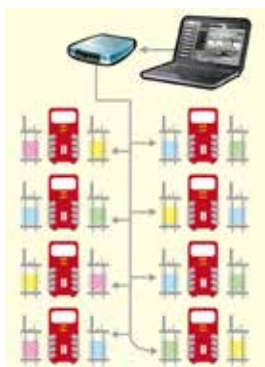
Innovative Life Sciences Tools

Bioreactor / Fermentor

Winpact Parallel System

FS-05 Series

The Winpact Parallel System is the ultimate and true parallel system for your parallel experiment. Whether you need to run two identical experiments or different experiments at once, the duo heating system allows you to run two thermostat heating, two dry heating or one thermostat and one dry heating simultaneously. This state-of-the-art design is constructed with the upmost versatility and flexibility to work with all types and sites of Winpact vessels. The remote control software can control up to 16 vessels for true parallel operation.



Two independent vessel operation regardless vessel type



Two independent vessel operation regardless vessel type

Features

- True parallel system, one controller for two vessels
- Single or dual vessels for independent or simultaneous control
- Duo heating system for thermostat and dry heating compatibility
- Free remote control software included in standard package
- Full compatibility with all optional devices

Single control interface for left and right vessel

8 x Assignable & speed adjustable peristaltic pumps

USB port for easy data transfer

Power switch

Adjustable air flow meter

FS-05

CE

Control Unit

- Single or dual vessels for independent or simultaneous control
- Duo heating system for thermostat and dry heating compatibility
- Maintenance-free top drive brushless motor
- Linux based system for stable and smooth operation
- 15 steps programmable control on pH, temp., feeding, agitation for sophisticated protocol
- 8 integrated assignable and programmable Watson Marlow pump heads with high resistance to acid and base
- More than 59,994 storage programs and 100 process data files available
- pH & DO stat with smart feeding technology
- Purchase free for remote control software
- Flexible data exporting interface: USB port or PC connection
- Global exclusive real-time notification for control (Optional device required)
- Pre-configured software for up to 16-folds operation, optimized for all vessel types
- Extreme compact in size: 400x540x740mm (WxLxH)

Autoclavable Glass Vessels:

- 4 different types of vessels for selection
- Up to 7 sizes of maximum working volumes for vessels: 0.5L, 1L, 3L, 5L, 10L, 15L and 20L
- Industry standard borosilicate glass and 316L stainless steel for headplate and all fittings



Remote software controls up to 16 vessels at once.

NEW

Winpact One System

FS-06 series

The most versatile, cost and space saving fermentation system is now available from our Winpact Fermentation product line-the Winpact One System.

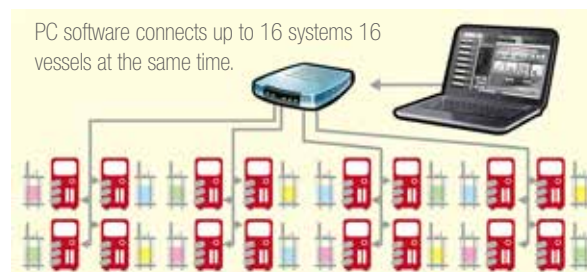
Winpact One System is not only compact in size but also provides all the necessary tools as a standard instrument. The duo heating system allows you to choose any vessel types up to 10L for any application needs. The optional expansion module allows you to add additional devices to enhance the capability of the system. All necessities such as temperature, anti-foam, pH and DO probe are all included in the standard package.



Duo heating system, compatible to all vessels up to 10 liters

Features

- Duo heating system, thermostat and dry heating combined in one
- Linux based system for stable and virus proof operation
- Extreme compact in size: (WxLxH) 250x510x500mm
- Compatible with any vessel types up to 10 liter
- Economic model for budget saving lab
- Connects up to 16 systems through remote control software
- Three speed adjustable peristaltic pumps control feedings in various flow rates
- SCADA software ready
- Easy ordering package
- Expansion module available for system upgrade supports to optional devices
- Multi-language operation interface is available



Vessel size selection from 500ml to 10L any type

- A - Single wall dish bottom vessel, 1L
- B - Double jacketed dish bottom vessel, 3L
- C - Double jacketed air lifter vessel, 5L
- D - Single wall plain bottom vessel with heating base unit, 10L



Multi-language operation interface (Spanish language)

Laboratory Bioreactor / Fermentor

Winpact Evo System

FS-07 series

Winpact Evo System is the newest fermentor that offers an all-in-one fermentation solution and ultimate automation experience to ensure easy, smooth and productive bio-processing. The controller is pre-configured to support both thermostat and dry heatings ; together with its full compatibility to Winpact vessels from 0.5 to 20L, it provides a broad coverage to cultivation of most cell lines.

Winpact Evo System is equipped with the latest control software; this user-friendly, intuitive software incorporates with many advanced functions to boost your experiment efficiency and thus lead to the success. Besides the manual controls of agitation, temperature, pH, DO level and feeding, one can also execute 15-step scheduled sequence controls on above parameters as well as pH and DO feedback controls. Moreover, a broad selection of plug-and-play optional devices are available to meet your specific requirement.



Features

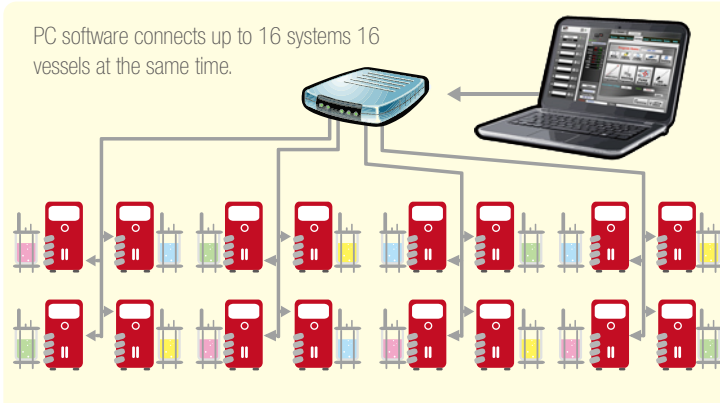
- Duo heating system, thermostat and dry heating combined in one
- Universal system for R&D in cell culture and microbiology
- Interchangeable five (5) types of autoclavable glass vessel
- Control up to sixteen (16) systems from a single interface
- Compatible with microbial and cell culture applications
- Intuitive and user-friendly control software in multi-language
- Small pilot scale 15L and 20L glass vessel compatible
- Ethernet communication with Winpact SCADA software, and IP addressing
- Winpact **EZScript software for advanced fermentation process control (optional)
- Multi-language operation interface is available



FS-07



PC software connects up to 16 systems 16 vessels at the same time.



*Please be aware that Major Science is going to replace FS-01 and FS-02 with the coming FS-07 system in the near future.

** Winpact EZScript is a command software specifically designed with user-define programming capability to optimize and control of your process.

Multi-language operation interface (Russian language)



Winpack Vessel Selection Guide

Controller	Duo Heating Control (FS-05, FS-06, FS-07)				
Vessel	Double Jacketed (FS-V-A series)	Single Wall (FS-V-B series)	Air Lifter (FS-V-C series)	Single Wall With Heating Blanket (FS-V-B series)	Single Wall With Heating Base Unit (FS-V-D series)
Agitation motor	Brushless motor	Brushless motor	N / A	Brushless motor	Brushless motor
Impeller	Pitched-blade	Rushton	N / A	Rushton	Rushton
Temp range	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
Vessel size	500ml - 10L	1 - 10L	5L only, single or double jacketed	1 - 20L	1 - 10L
Speed range	cell:30-300rpm (0.5-5L) microbial:30-1000 rpm (10L)	30-1200rpm(1 - 5L) 30-1000rpm(10L)	N / A	30 - 1200rpm (1 - 5L) 30 - 1,000rpm (10L) 30 - 700rpm (15, 20L)	30 - 1200rpm (1 - 5L) 30 - 1,000rpm (10L)
Heating	Built-in heat exchanger			Heating blanket	Heating base unit
Cooling	External chiller, automatic cooling water valve				
Aeration	Orifice ring sparger	Orifice ring sparger	PTFE micro sparger	Orifice ring sparger	Orifice ring sparger
Grounding port	No need	No need	Yes	No need	No need
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

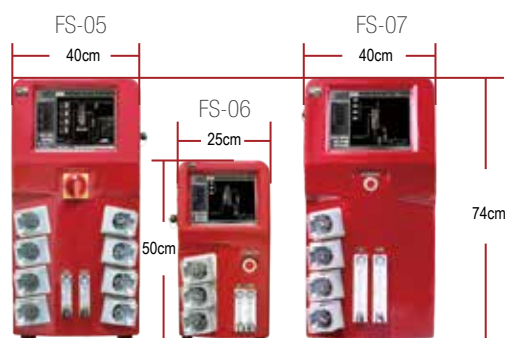
● ○ Good

○ ○ 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)

Most compact and versatile economic fermentation system



Charting - Real-time data recording and exporting



System Setup - Set up for optional devices



Control / Manual
- Performs manual, sequence or EZ Script control(optional) of each parameter.



Control / Sequence





Pumps - Control speed, direction, total volume and flow rate





Calibration - Easy sensor calibration with help menu


Vessel Specification

	Vessel type	Double Jacketed Dish Bottom Vessel (FS-V-A series)				
	Material	Borosilicate glass / 316L stainless steel for headplate and all fittings				
	Working volume **	500ml	1L	3L	5L	10L
	Total volume Δ	1L	1.5L	3.8L	6.8L	12.5L

	Vessel type	Single Wall Dish Bottom Vessel (FS-V-B series)			
	Material	Borosilicate glass / 316L stainless steel for headplate and all fittings			
	Working volume **	1L	3L	5L	10L
	Total volume Δ	1.5L	3.8L	6.8L	12.5L

	Vessel type	Air Lifter Vessel (FS-V-C series)		
	Material	Borosilicate glass / 316L stainless steel for headplate and all fittings		
	Working volume **	5L single wall		5L double jacketed
	Total volume Δ	7L		

	Vessel type	Single Wall Dish Bottom Vessel With Heating Blanket (FS-V-B series)					
	Material	Borosilicate glass / 316L stainless steel for headplate and all fittings					
	Working volume **	1L	3L	5L	10L	15L	20L
	Total volume Δ	1.5L	3.8L	6.8L	12.5L	18.7L	23.7L

	Vessel type	Single Wall Plain Bottom Vessel With Heating Base Unit (FS-V-D series)				
	Material	Borosilicate glass / 316L stainless steel for headplate and all fittings				
	Working volume **	3L		5L		10L
	Total volume Δ	3.7L		6.7L		13.1L

*FS-A-CON04 is pre-configured in Air Lifter Vessels as standard. Available upon purchase of vessels over 3L.

** Suggested Max.

Δ Total volumes are approximate and may vary slightly.

Winpack Controller Selection Guide

Cat. No.	FS-05	FS-06	FS-06 + FS-06-EPM*	FS-07
Model	Winpack Parallel	Winpack One	Winpack One	Winpack Evo
Heating system	Duo Heating			
Working volume range	500ml - 20L	500ml - 10L	500ml - 10L	500ml - 20L
Glass vessels, autoclavable	yes	yes	yes	yes
Interchangeable vessels	yes, all types	yes, all types	yes, all types	yes, all types
Number of vessels controlled per controller	2	1	1	1
Number of vessels controlled via remote software	Max 16			
Touchscreen controller	yes, 10.4"	yes, 8"	yes, 8"	yes, 10.4"
Number of peristaltic pumps	8	3	3	4
Gas mixing options	Available	no	Available, *	Available
Oxygen enrichment	Available	no	Available, *	Available
Mass flow controller	Available	no	no	Available
Off-Gas analyzer	Available	no	no	Available
ORP probe	Available	no	Available, *	Available
Lighting module	Available	no	Available, *	Available
External pump	Available, multiple	Available, 1 max.	Available, 2 max.	Available, multiple

* Optional expansion module (EPM) needed.

NEW

Winpact Solid State Fermentation System

FS-10-A05P

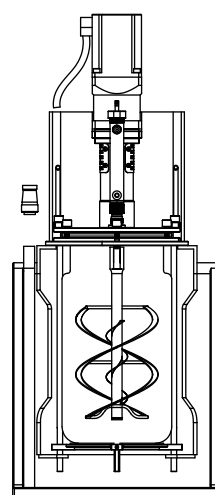
Winpact Solid State Fermentation system is designed for the laboratory scale researchers to gain the excellent results, the optimization, and for the scale up through built-in controller factors. Alike Winpact series, it offers a 10.4" color touch screen with graphic user interface and 3 built-in peristaltic pumps on the Linux based operation system. An automatic vessel angle control mechanism via the Winpact controller really gives the outstanding mixing efficiency and simulation for solid state material research such as enzymatic hydrolysis research with Lignocellulosic material and Ganoderma solid status research. This system is designed for both aerobic and anaerobic fermentation with different optional impellers.

Features

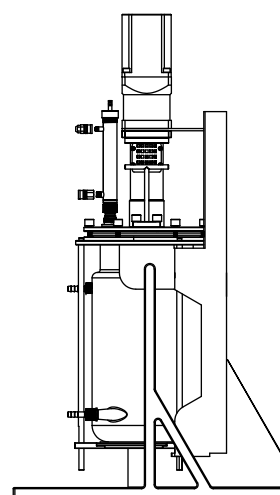
- Fully integrated system specifically designed for solid-state fermentation research involving saccharification, hydrolysis and more.
- Programmable angle-adjustable vessel tilting and stirring mechanism permits superior sample homogeneity.
- Reduced stickiness design of impellers ensure sample integrity throughout the fermentation run.
- Integrated motor shaft & air sparger assembly creates precise, disturbance-free controls of aeration and mixing.
- Chemically resistant double jacketed borosilicate glass vessel design
- Customizable impeller and aeration controller available.



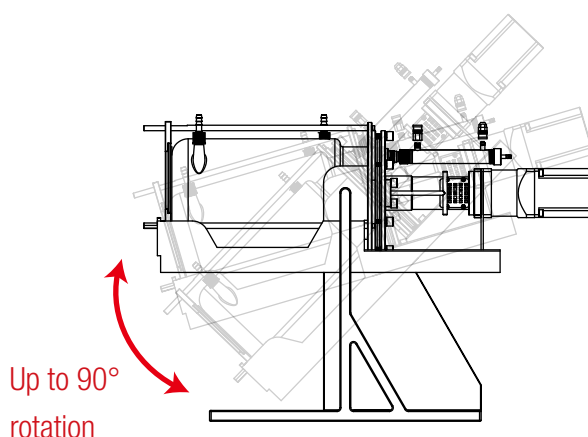
FS-10-A05P



Front view



Side view



Up to 90°
rotation



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