

CONTAINS A
COMPLETE
FERMENTATION
SYSTEM

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THIS SIDE UP

BioBundle Systems

COMPLETE FERMENTATION SYSTEMS FOR MICROBIAL AND CELL CULTURE APPLICATIONS



Laboratory BioBundle Systems

Introduction

Applikon Biotechnology is a privately-owned Dutch company developing, manufacturing and supplying bioreactor systems for both research and production use. Starting in 1973 Applikon has grown from a small-sized company supplying laboratory instrumentation to a dynamic worldwide enterprise capable of supplying a broad and diverse line of bioreactor systems. Our autoclavable bioreactor systems are the worldwide industry standard.

Applikon's ISO 9001 certification and our ISO certified manufacturing partners ensure that only products made to the highest standards will be delivered to our customers.

Applikon Biotechnology has expertise in:

- Fermentation technology
- Cell culture technology
- Process engineering
- Sterile and hygienic processing
- Validation procedures
- Mechanical and electronic engineering
- Control system engineering
- Software development and automation

Our product range consists of



7 liter Bio Bench

Laboratory

- Glass Autoclavable Bioreactor systems ranging from **1 to 20 liter**
- Stainless Steel Steam In Place Bench top Bioreactor systems ranging from **7 to 30 liter**



Pilot System 60 liters

Pilot Plant

- Autoclavable Stainless Steel Bioreactor systems ranging from **20 to 110 liter**
- Stainless Steel Steam In Place Pilot Bioreactor systems ranging from **20 to 140 liter**



1500 liter Fermentor

Projects

- Customized Bioreactor systems **up to 25,000 liter**

Measurement, control and software

- Applikon has been providing customers with software and control system solutions since the middle of the eighties. The products are developed by software and electronics specialists in close co-operation with bioreactor users. The software and the controllers are used from laboratory scale up to production scale and comply with major international pharmaceutical standards. Key features are ease of operation and high control accuracy.

BioBundle Fermentation Systems

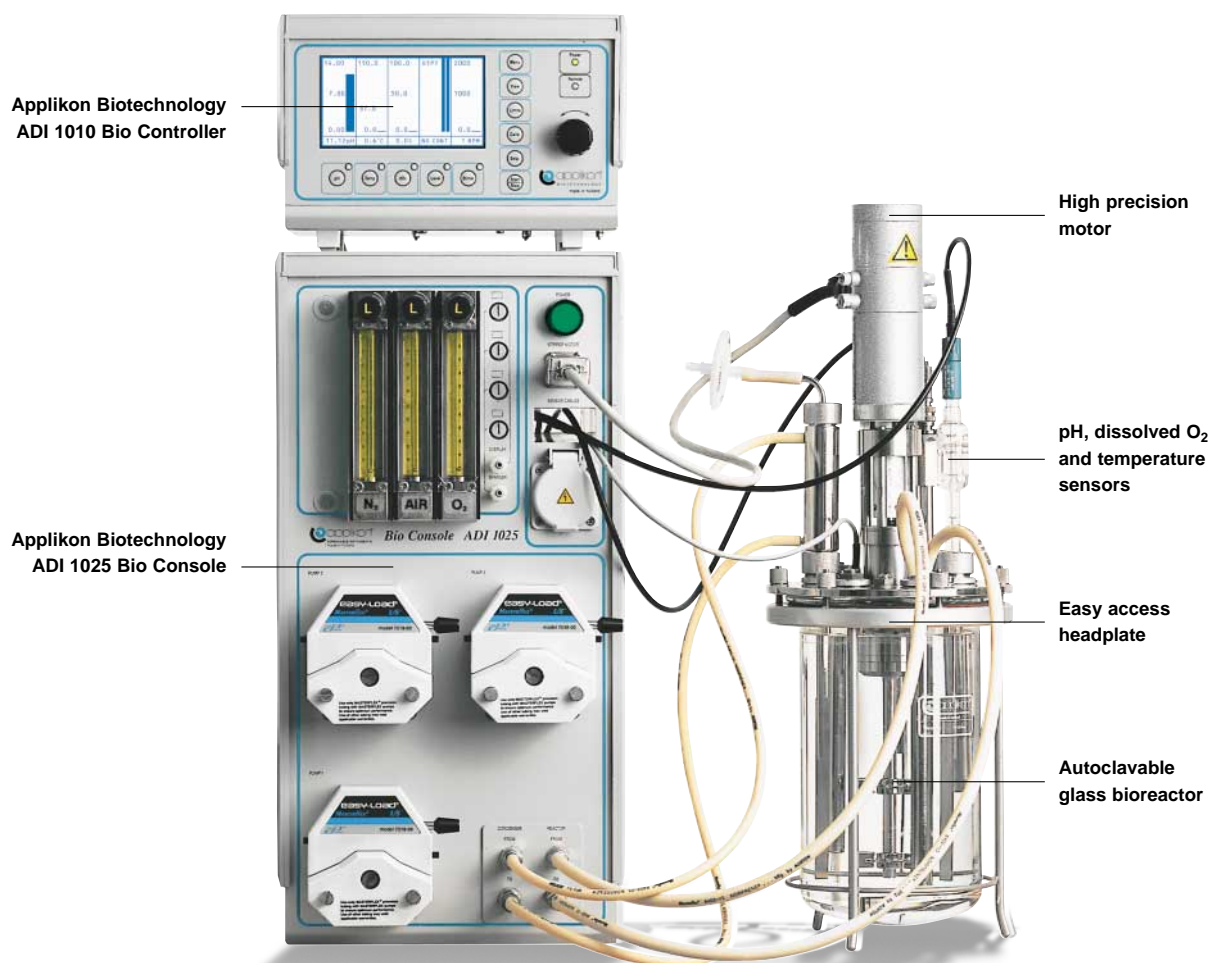
are the fastest, easiest and most economical way to get your fermentation projects up and running. Complete and ready to assemble, pre-packaged BioBundle fermentation systems include everything you need for a wide range of applications.

Uncompromising quality and performance

Every BioBundle system is made of the finest materials available and built to GMP standards. All materials in contact with the medium are constructed of either 316L stainless steel, EPDM, silicone rubber, PTFE or borosilicate glass.

Your choice of sizes

BioBundle bioreactors are available in 1-liter, 3-liter, 7-liter or 15-liter sizes for microbial or cell culture, including bacteria, yeasts, fungi, mammalian cells and plant cells.



The BioBundle shown here is upgraded with extra pumps and rotameters

Laboratory BioBundle Systems

BioBundle Components

Each BioBundle system component is thoroughly tested and evaluated based on many years of successful usage in a wide range of applications. Below is a partial listing of the components included in the BioBundle system.



1 liter dished



3 liter dished

Components	1 liter	1 liter	3 liter	3 liter
	Cell Culture BioBundle	Microbial BioBundle	Cell Culture BioBundle	Microbial BioBundle
Fermentor headplate	6 ports ❖	6 ports ❖	18 ports	18 ports
Vessel total volume	1.25 L	1.25 L	3.2 L	3.2 L
Vessel working volume	0.9 L	0.9 L	2.7 L	2.7 L
Vessel minimum working volume	0.35 L	0.35 L	0.47 L	0.47 L
Lipseal stirrer	■	■	■	■
Marine impeller	■		■	
6-bladed turbine impeller		2 each		2 each
Motor, speed controller, cable	100 W motor	100 W motor	100 W motor	100 W motor
Liquid addition bottle	1 each, 0.5 L	3 each, 0.5 L	1 each, 0.5 L	3 each, 0.5 L
Filters	3 each	2 each	3 each	2 each
Sparger pipe		■		■
Sparger pipe with porous nozzle	■		■	
Septum holder	■	■	■	■
Stainless steel air outlet condenser	■	■	■	■
Air overlay pipe	■	■	■	
Sample pipe	■	■	■	■
Heat exchanger	■	■		■
Thermometer pocket	■	■	■	■
Reagent inlet assy. w/ 3 pipes	■	■	■	■
Baffles	2 each	2 each		3 each
Blind plug for 6 mm ports			3 each	
Blind plug for 10 mm ports			2 each	2 each
Blind plug for 12 mm ports			2 each	2 each
Blind plug for 18 mm ports			1 each	
Blind plug for 27 mm ports				
pH sensor, holder, cable	■	■	■	■
Dissolved O ₂ sensor, holder, cable	■	■	■	■
Temperature sensor	■	■	■	■
Level/foam sensor, cable		■		■
ADI 1010 Bio Controller	■	■	■	■
Power unit for controller	■	■	■	■
PC config software for controller	■	■	■	■
ADI 1025 Bio Console	■	■	■	■
Rotameter for air	100 mL/min	1 L/min	500 mL/min	5 L/min
Rotameter for oxygen		100 mL/min		500 mL/min
Rotameter for carbon dioxide	50 mL/min		100 mL/min	
Control valve for rotameter	1 each	1 each	1 each	1 each
Fixed speed drive, pump head, tubing	1 each	3 each	1 each	3 each
Heating blanket	■	■	■	■
Control valve for cooling water		■		■
Startup kit	■ *	■ *	■ *	■ *
Silicone tubing for liquid additions 7.5 meter	■	■	■	■



7 liter dished



15 liter dished

7 liter	7 liter	15 liter	15 liter
Cell Culture BioBundle	Microbial BioBundle	Cell Culture BioBundle	Microbial BioBundle
18 ports	18 ports	18 ports	18 ports
7 L	7 L	15 L	15 L
5.2 L	5.2 L	12 L	12 L
2 L	2 L	2.5 L	2.5 L
■	■	■	■
■		■	
	2 each		2 each
100 W motor	140 W motor	100 W motor ▼	1000 W motor
1 each, 0.5 L	3 each, 0.5 L	1 each, 1 L	3 each, 1 L
3 each	2 each	3 each	2 each
	■		■
■		■	
■	■	■	■
■	■	■	■
■	■	■	■
■	■	■	■
■	■	■	■
■	■	■	■
	3 each		3 each
6 each	1 each	6 each	1 each
2 each	2 each	2 each	2 each
1 each	1 each		
		1 each	1 each
■	■	■	■
■	■	■	■
■	■	■	■
	■	■	
■	■	■	■
■	■	■	■
■	■	■	■
■	■	■	■
1 L/min	10 L/min	5 L/min	50 L/min
	500 mL/min		5 L/min
100 mL/min		500 mL/min	
1 each	1 each	1 each	1 each
1 each	3 each	1 each	3 each
■	■	■	■
	■		■
■ *	■ *	■ *	■ *
■	■	■	■

❖ The fermentor headplate contains the following non-removable components:

- Thermometer pocket
- Inoculation pipe
- Air overlay pipe
- Sample pipe
- Sparger pipe
- Heat exchanger with two baffles

* The startup kit consists of the following items:

- 24 assorted o-rings for port assemblies
- 2 o-rings for stirrer assembly
- 5 rubber septa for septum holder
- 2 clamping rings for pH holder
- 6 lipseals for stirrer assembly
- Allen key, 1.5 mm
- Reducer, male-male, 1/8"- 3/16"
- 25 cable ties
- 2 headplate o-rings
- T-connector, 4.8 x 4.8 x 4.8 mm
- 3 reducers, male-male, 1.6 - 4.8 mm
- T-connector, 3.2 x 3.2 x 3.2 mm
- 6 tubing clamps
- 5 meter noreprene food grade tubing size 15
- 5 meter noreprene food grade tubing size 16
- 1.5 meter silicone tubing for headplate clamping ring

▼ P100 motor includes a 6:1 gear reduction to provide higher torque capability.

Laboratory BioBundle Systems

Save time and money



Affordable

By prepackaging BioBundle systems, Applikon realizes significant cost savings, which are passed on to you.

Complete

BioBundle systems are shipped with everything you need to start, including an autoclavable glass bioreactor, sensors, controller, pumps, flow meters, filters, valves, tubing, clamps, accessories and complete instructions. All you have to add is media and cells.

Powerful

Each BioBundle system includes the versatile ADI 1010 Bio Controller, which provides programmable control and optimization of system parameters

and adapts easily to both autoclavable or steam-in-place vessels.

Easy

The BioBundle Systems are packaged for fast, trouble-free assembly. Setup requires no special skills or tools.

Integrated

Equipment required to operate the BioBundle system is housed in the ADI 1025 Bio Console that organizes the work area for easy access and optimum performance.

Ready

BioBundle systems are available for immediate delivery. Call your nearest distributor for information.

ADI 1010 Bio Controller included with every BioBundle system

The ADI 1010 Bio Controller is the smallest and most intelligent controller in the Applikon product range. It is specially designed for process development in laboratory scale bioreactor systems and offers you an easy-to-use and powerful instrument that excels in accurate and dependable process control.



The ADI 1010 controls pH, temperature, dissolved oxygen, foam/level and stirrer speed.

Adaptive control

What makes this controller smart is its capability to use adaptive control technology to automatically set the PID values. This results in shorter development times and reduced time to market for your new products.

The Bio Controller is equipped with a serial interface that allows the system to be connected to a computer for data logging and supervisory control. Applikon offers a wide range of software products that seamlessly integrate with the controllers to further enhance the capabilities.

Ask your local Applikon distributor for details on these add-on products.

ADI 1010 Bio Controller

- Built to GAMP standards
- Fully compatible with autoclavable and benchtop stainless steel vessels
- Easy, intuitive operation
- Adapts easily to changing needs and applications
- Eight digital and five analog outputs for maximum versatility
- Dependable - one ADI 1010 Bio Controller per vessel reduces changes of error and costly breakdowns
- The ADI 1010 configuration can be modified using the software configuration tool included in the BioBundle