



WHEATON[®]

Roller Apparatus R2P™ 2.0 and the WHEATON Standard Roller for Adherent Cell Culture

The First Single Use Bioreactor

www.wheaton.com

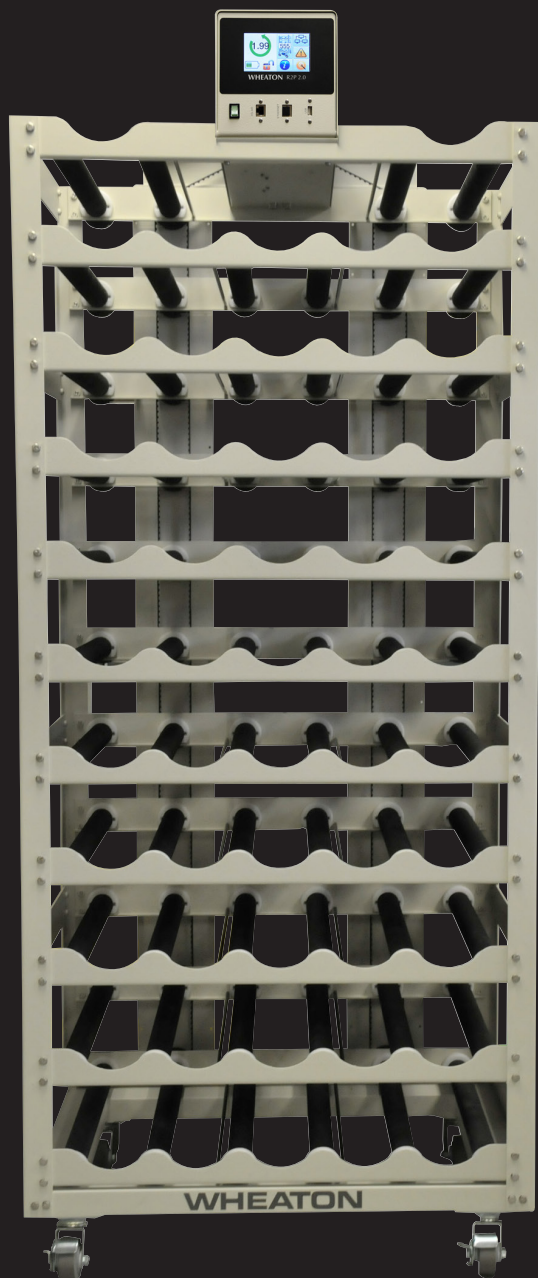


WHEATON®

Roller Apparatus

R2P™ 2.0 and the WHEATON Standard Roller for Adherent Cell Culture

The First Single Use Bioreactor



We have updated and enhanced our process control systems for our production scale roller apparatus. We understand the importance of our culture systems to the vaccine and biologics industries; therefore, customer input was a key driver governing the upgrades. The systems utilize current technology to facilitate implementation into new production installations with networked equipment. The systems also maintain backwards compatibility for existing operations. This effort will also enable better control and monitoring for research or pilot roller culture installations.

The new roller apparatus feature:

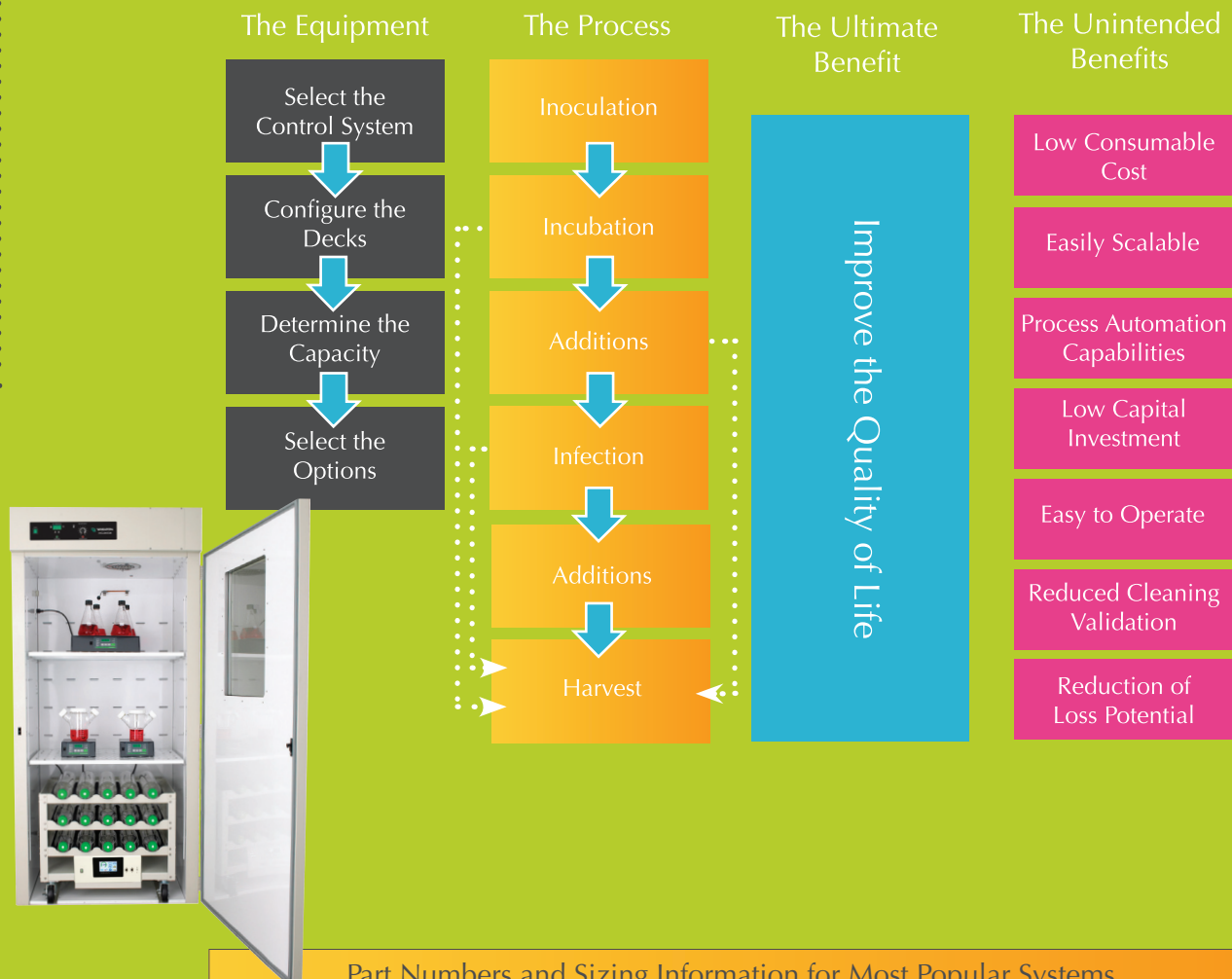
- A color touch screen or digital display
- An icon driven interface with intuitive menus
- The surface mount gold plated electrical connections for better reliability in high temperature environments
- Updated industry standard networking communications protocols and connections
- Lower power consumption for longer battery run time and a safer design
- Backwards compatibility for continuing support of existing installations
- Retrofit kits available to update older WHEATON systems or unsupported systems
- Maintenance free brushless DC motors for years of trouble-free operation

WHEATON has a long history of designing, building and supporting cultivation equipment. The R2P 2.0 and the WHEATON Standard Roller are the next logical steps.

R2P™ 2.0

WHEATON® R2P™ 2.0 Roller Apparatus and the Standard Roller

The First Single Use Bioreactor



Part Numbers and Sizing Information for Most Popular Systems

Part Number	# Positions	Width # Decks	Dia. (in / cm)	Height (in / cm)	Weight (in / cm)	# of Bottle (lb / kg)	Positions	Control System
Bottom Drive Production Spacing								
02-924-936	5	1	31 / 79	25 / 63	14 / 35	52 / 24	5	R2P 2.0
02-924-938	5	3	31 / 79	25 / 63	26 / 65	85 / 39	15	R2P 2.0
02-924-948	5	11	31 / 79	25 / 63	74 / 187	217 / 99	55	R2P 2.0
02-924-950	8	11	47 / 120	25 / 63	74 / 187	360 / 167	88	R2P 2.0
Bottom Drive Modular Spacing								
02-924-952	5	1	30 / 76	25 / 63	14 / 34	70 / 32	5	R2P 2.0
02-924-908	5	1	30 / 76	25 / 63	14 / 34	70 / 32	5	Standard
02-924-954	5	3	30 / 76	25 / 63	29 / 74	112 / 51	15	R2P 2.0
02-924-910	5	3	30 / 76	25 / 63	29 / 74	112 / 51	15	Standard
02-924-958	5	6	30 / 76	25 / 63	48 / 122	205 / 93	30	R2P 2.0
02-924-914	5	6	30 / 76	25 / 63	48 / 122	205 / 93	30	Standard
02-924-962	5	9	30 / 76	25 / 63	71 / 179	238 / 108	45	R2P 2.0
02-924-918	5	9	30 / 76	25 / 63	71 / 179	238 / 108	45	Standard
Top Drive Production Spacing								
02-924-904	5	11	31 / 79	25 / 63	75 / 190	250 / 113	52	R2P 2.0
02-924-900	5	11	31 / 79	25 / 63	75 / 190	250 / 113	52	Standard
02-924-906	8	11	47 / 120	25 / 63	75 / 190	350 / 159	85	R2P 2.0
02-924-902	8	11	47 / 120	25 / 63	75 / 190	350 / 159	85	Standard

The First Single Use Bioreactor

WHEATON® Standard Roller Apparatus

Product Specifications

Standard Roller



- Smooth **ramping digitally controlled** rotation accurate to 0.1 RPM
- **Maintenance free precision** brushless motor
- **Bright digital display** for easy operation
- **Multiple decking and capacity configurations** available for process flexibility

Specifications

Capacity:	5-88 Positions
Bottle Speed (110mm Diameter Bottle, other speeds available):	0.25-8.1 RPM
Bottle Diameter:	108-121mm
Bottle Length:	Up to 550mm
Accuracy:	0.1 RPM
Drive:	Belt Driven
Motor Type:	Brushless DC
Rotation Direction:	Clockwise and Counter-Clockwise
Options:	Belt Break Alarm and Battery Backup
Remote Communication:	Dry Contact Relay Alarm
Humidity:	80% up to 31°C
Operating Temperature:	10 to 40°C
Electrical:	100-240 VAC, 50/60 Hz, 35W



Complimentary WHEATON® Products

Peristaltic Pumps • Silicone Tubing • Incubators • Vented Caps • Roller Bottles • Bench Top Rollers

Peristaltic Pumps



UniSpense® PRO

OmniSpense® ELITE

Incubators Standard & CO₂



Vented Caps



Roller Bottles



Bench Top Roller

Silicone Tubing

Micro Cassette

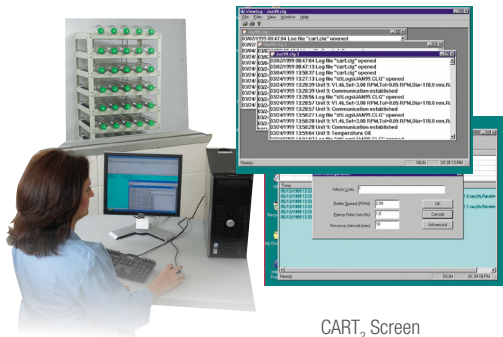
Platinum Cured

Peroxide Cured



The First Single Use Bioreactor Monitoring Software

CART2 Control Monitor and Recording Software



CART₂ Screen

- **Remotely monitors and controls** up to 255 R2P and R2P 2.0 rollers
- **Records** all settings, changes, alarms and communication loss
- **Password-protected** user levels maintain security
- Can be **easily added to R2P and R2P 2.0** at any time
- **Conforms to UL, CSA and CE Laboratory Standards**

The WHEATON CART2 System precisely controls rotating speeds of up to 255 separate roller units. Each unit is monitored for rotation, speed deviation and communication. This system provides the perfect solution for GMP or FDA requirements.

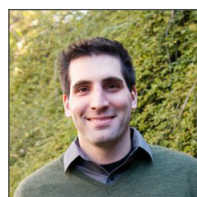
CART2 and View Log Software with the Network Interface

Network Interface is a single-line network adapter for up to 255 R2P units.

Cat. No.	Plug Style	Voltage	Qty/Case
02-912-635	North America	120 VAC	1

Computer Requirements

- IBM Pentium® PC or compatible
- 32 MB of RAM, minimum
- Microsoft® Windows® 2000, XP, Vista, 7
- One free serial port
- 10 MB of free hard drive space, minimum



Brian Canna
Global Product Manager
Bioprocess Equipment
B.S. Biochem, MBA

"Five years ago as a bioreactor sales engineer if you asked me about the future of roller culture, I would have said it was going to go the way of the dinosaur. But while I sit here as a Product Manager looking at double digit year over year growth for the equipment, once considered the bane of bio-production, I would have been very wrong. New innovations such as surface treated plastics and automated harvesting systems have helped maintain the requirement for the roller apparatus line. The ease of implementation, scaling, difficulties with suspension cell culture and increased industry titers have helped the growth of the line. And for the future; drug delivery methods, advances in adjuvants, and the pursuit for rare disease therapies will ensure that production line of the equipment will keep on rolling. To make sure that the best possible equipment is implemented in the field we are investing heavily in the line. Service free motors, gold plated surface mount electronics, ruggedized communications and networking protocols, and an icon driven touch screen interface are just a few of the enhancements."

Attach a link

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WHEATON®

R2P™ 2.0 Roller Apparatus for Adherent Cell Culture

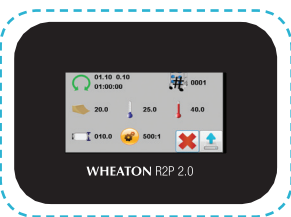


Available in Top or Bottom Mounted Control

- Robust **touch screen interface** that is easy to view from a distance
- Readily recognized **icons for intuitive navigation**
- Digitally controlled **maintenance free motor accurate** to 0.01 RPM
- Capable of **remote control and monitoring** through SCADA systems
- **Multiple decking and capacity configurations** available for process flexibility
- **USB Downloadable** System Event Log

Specifications

Capacity:	5-88 Positions
Bottle Speed (110mm Diameter Bottle, other speeds available):	0.25-8.1 RPM
Accuracy:	0.01 RPM
Drive:	Belt Driven
Motor Type:	Brushless DC
Rotation Direction:	Clockwise, Counter-Clockwise and Rocking
Belt Break Alarm:	Included
Options:	Temperature Monitoring and Battery Backup
Remote Communication:	Yes, Modbus® Protocol and WHEATON Protocol via Ethernet TCP/IP and RS422/485
Humidity:	80% up to 31°C
Operating Temperature:	10 to 40°C
Electrical:	100-240 VAC, 50/60 Hz, 35W



Profile

Say Goodbye to Quick Start Cards and User Manuals

The R2P 2.0 touch screen was designed for use directly out of the box. There are four types of screens for system navigation. The **Main Screen** displays all of the most important process conditions including bottle speed, bottle direction, alarms, unit identification number, power status, and the network status. From the main screen the user can access the general **Setup Screen**.

The user can configure system parameters that are frequently accessed from the Setup Screen including speed ramp time and the event log. All parameters are changed in **Configuration Screens** that feature large numeric keypads and intuitive operation. The Setup Screen also allows access to the **Factory Screen** for system parameters that are established during factory assembly and testing. All screens can access an onboard user guide that details the function of each Icon. Don't worry we will still include the user manual; you may just never need it.



Main Screen



Temperature Alarm



Bottle Speed



Factory Setup

The First Single Use Bioreactor

Roller Options Information

Belt Break Alarm (Included with R2P 2.0)

The **Belt Break Alarm** employs **two magnetic sensors** to ensure that all main pulleys are rotating on the unit. This is included on all R2P 2.0 Roller Apparatus.

Battery Backup

The **Battery Backup** protects cells during transport, processing and power outages. The unit automatically and seamlessly switches over to battery power to provide rotation for 12 – 24 hours. Bottom mounted control systems house larger, longer lasting batteries.

Temperature Monitoring/Alarm Option (R2P 2.0 Only)

This option includes **two precision temperature probes** for real time temperature monitoring and deviation alarms. The temperature is displayed in the temperature calibration screen or on the screen saver for quick confirmation of optimal operating conditions.



Deck Kit

Deck Kit For Modular Spaced Systems

The deck kit is designed for modular systems with removable decks. Modular systems have 7.125" deck spacing for easy removal and replacement of bottles. These are kits designed for customer installation.

Deck Kit For Production Spaced Systems

The deck kit is designed for production systems with removable decks. Production systems have 6" deck spacing to maximize system capacity. These are kits designed for customer installation.

Cat. No.	Description
02-924-964	WHEATON Standard Roller Top Drive System Options with Belt Break Alarm and Battery Backup
02-924-966	WHEATON Standard Roller Bottom Drive System Options with Belt Break Alarm and Battery Backup
02-924-965	R2P 2.0 Roller Top Drive System Options with Battery Backup and Temperature Sensors (Belt Break Alarm is already included with unit)
02-924-967	R2P 2.0 Roller Bottom Drive System Options with Battery Backup and Temperature Sensors (Belt Break Alarm is already included with unit)
02-912-629	Deck Installation Kit for Modular (7.125") Spaced System (Units have a maximum capacity of 9 decks)
02-912-630	Deck Installation Kit for Production (6") Spaced System (Units have a maximum capacity of 11 decks)



For customer service, call 1-800-766-7000.
To fax an order, use 1-800-926-1166.
To order online: www.fishersci.com

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