

Applications

Pharmaceutical

Biological

Diagnostic



PACKAGING
PRODUCTS

Product Highlights

- Allows flexibility for scale up and production of monolayer cell cultures
- Add capacity and options as your requirements change
- Avoid cell shear with programmable soft start and stop of rotation
- Wide speed range
- Counteracts fluctuations in power to continuously maintain set speeds
- Uses either glass or plastic roller bottles
- All position drive system
- Ultimate power protection with optional battery back up
- Rotation monitoring with alarms
- Optional software for external computer monitoring and control
- International plug styles available
- Custom configurations available upon request

High Capacity Roller Culture Apparatus

Roller Culture System Comparison

	Cost Buster	Modular Line	R2P Roller System
Number of Bottle Positions	5 or 8	5	5 or 8
Distance Between Decks	Production Spacing 6" (15.2 cm)	Modular Spacing 7 1/8" (18.1 cm)	6 in (15.24 cm) Production spaced (available in 5 or 8 positions per deck) 7 1/8 in (18.1 cm) Modular spaced (available in 5 positions per deck)
Number of Decks	11	1 to 9 (easily modified)	1 - 9 (7 1/8 in. (18.1 cm) Modular spaced-5 positions per deck) 1 - 11 (6 in (15.24 cm) Production spaced-5 positions per deck) 11 (6 in (15.24 cm) Production spaced-8 positions per deck)
Unit Height	Fixed	Adjustable based on number of decks	5 position models are adjustable based on number of decks 8 position model is fixed
Number of Bottles	52 (5 bottles/deck) } with 1700 cm ² bottle 86 (8 bottles/deck) } 104 } with 850 cm ² bottle 172 }	1 (min) } with 1700 cm ² bottle 45 (max) } 1 } with 850 cm ² bottle 90 }	1 - 55 (for 5 positions/deck-production spaced) } with 1700 cm ² bottle 1 - 45 (for 5 positions/deck-modular spaced) } 1 - 110 } with 850 cm ² bottle 1 - 90 }
Rotation Alarm	Optional	Optional	Standard
Battery Backup	Optional	Optional	Optional
Control/Operating System	Not Available	Not Available	CART ₂ software

Cost Buster



The Original High Volume Production Apparatus

Specifications: (Cost Buster)

Electrical:	100 - 120VAC, 50/60Hz, 35 watts 220 - 240VAC, 50/60Hz, 35 watts
Bottle Speed:	0.25 – 5.3 RPM (110 mm bottle)
Operating Temp:	15 to 40°C
Humidity: .....	.80% up to 31°C
Altitude Limit: .....	.2000 meters
Dimensions W x D x H:	
52-Position:	30.9 x 24.3 x 74.5 (in); 78.4 x 61.6 x 189.4 (cm)
86-Position:	46.7 x 24.3 x 74.6 (in); 118.7 x 61.6 x 189.4 (cm)
Weight:	
52-Position:	250 lb (113.4 kg)
86-Position:	350 lb (158.8 kg)

Cost Buster Roller Apparatus

- Maximum production capacity in a minimum amount of space
- Distance between decks is 6" (15.2 cm)
- Available in 52 and 86 position models
- Drive units mounted on top to provide easy access for maintenance and better air flow
- Optional rotation alarm and battery backup systems available
- Greaseless bearings prevent leaching and eliminate bearing seizures
- Soft start feature minimizes cell disruption
- Conforms to UL, CSA, and CE Standards
- 1 year warranty

The Wheaton Cost Buster High Volume Production Roller Apparatus provides the maximum amount of potential cell culture growth area available in the smallest amount of space. This is accomplished by reducing the spacing between decks. Controls and drive units are located on top of the unit, providing easy access for maintenance. The open frame design allows better air flow, which minimizes top-to-bottom temperature gradients.

Wheaton Cost Busters can accommodate roller bottles from 110 to 121 mm in diameter and up to 550 mm in length. Each roller is driven by nonslip belts and pulleys for positive traction (especially important for use with lightweight plastic bottles).

Please note that Roller Culture Apparatus is made to order and not returnable.

High Capacity Roller Culture Apparatus

R₂P™



The State of the Art High Volume Production Roller Apparatus

Specifications: (R₂P™ Roller Culture Apparatus)

Electrical:100 - 240 VAC, 50/60Hz, 20 watts

Bottle Dimensions (Dia/Length):110 to 121 mm / up to 550 mm

Bottle Speed:0.25 – 8.0 RPM (110 mm bottle)

Deck Spacing: inches (cm)
 All Position Drive R₂P6 in (15.24 cm)
 Modular R₂P7 1/8 in (18.1 cm)

Operating Temperature:15 to 40°C

Humidity:80% up to 31°C; 50% at 40°C

Altitude Limit:2000 meters

Built-in Drive Monitoring System Alarm

Visual:Flashing display with fault displayed
 Audible:Buzzer (with On/Off control)
 External output:NO or NC (programmable) dry contact
 (0.5A@ 24 VDC) through RJ-45 jack on the control housing front panel.

Dimensions W x D x H:

Base with 1 Deck:31 x 24.5 x 13.5 (in); 78.8 x 62.25 x 34.3 (cm)
 Base with 3 Decks:31 x 24.5 x 25.5 (in); 78.8 x 62.25 x 64.8 (cm)
 Base with 11 Decks:31 x 24.5 x 73.5 (in); 78.8 x 62.25 x 186.7 (cm)
 Extra Deck:31 x 24.5 x 6 (in); 78.8 x 62.25 x 15.24 (cm)

Weight:

Base with 1 Deck:52 lb (23.6 kg)
 Base with 3 Decks:85 lb (38.6 kg)
 Base with 11 Decks:217 lb (98.4 kg)
 Additional Deck:16.5 lb (7.5 kg)

Specifications: (88-Position R₂P™ System)

Dimensions W x D x H:47 x 24.5 x 73.5 in; (119.4 x 62.25 x 189.2 cm)

Weight:360 lb (163.6 kg)

R₂P™ Roller Culture Apparatus

- Utilize from research to production
- Modular; add capacity and options as your requirements change
- From 5 to 55 positions per unit (holds 10 to 110 of the 850 cm² vessels)
- Displays accurate RPM by entering vessel diameter
- Wide speed range brushless DC motor, 0.25 to 8.0 RPM
- Programmable rotation direction, fixed or reversing
- Programmable soft-start and stop
- 10 program storage registers
- Optional temperature monitoring, one to four sensors per unit
- Optional battery backup
- CART₂ ready! Optional software for monitoring controlling, recording up to 255 units
- Multi-language display prompts. Choice of English, French, German, Italian, Portuguese, or Spanish
- Conforms to UL, CSA and CE Laboratory Standards
- 1 Year Warranty

The Wheaton R₂P Roller Culture Apparatus is designed to allow for the development and growth of cell culture from research to production quantities without having to change equipment and revalidate protocols. This is achieved by giving you more flexible controls and the ability to easily add options at any time. All R₂P Roller culture units share the same motor, software, controls and controllers, which makes moving culture conditions between units fast and easy.

All-Position Drive System

Each roller is driven to allow for either glass or lighter-weight plastic roller culture vessels to be used.

User-Friendly Control Panel

The large digital display and keypad allow for easy input and monitoring of the settings. The unit continually displays the bottle RPM setting and the actual bottle RPM. The display remains accurate with any size bottle (110 to 121 mm diameter) by entering the bottle diameter. The unit can be programmed to rotate in either direction, and can reverse direction automatically at the time interval entered (better for roller bottles fluted along the longitudinal axis). The programmable soft start and stop feature avoids premature cell detachment. The settings can be saved in one of the ten memory locations for easy recall later.

Built-in Monitoring and Alarms

The unit continuously monitors both the rotational speed and the drive train (the motor and belts). If the speed falls out of the entered tolerance or if the unit detects a loss of rotation, the unit displays an alarm, and sounds a loud buzzer. These alarms can also be tied to an existing monitoring system through an external jack. Optional features can be added at any time, including CART₂ and battery backup.



88-Position R₂P™ System

6" (15.24 cm) Deck Spacing

- Highest capacity roller rack
- 88 all position drive
- 1 year warranty

High Capacity Roller Culture Apparatus

Modular Cell Production



Superior Product Designed to Maximize Production Spacing

Specifications: (Modular Cell Production)

Electrical:	.....100 - 120VAC, 50/60Hz, 35 watts 220 - 240VAC, 50/60Hz, 35 watts
Bottle Speed:	.....0.25 – 5.3 RPM (110 mm bottle)
Operating Temperature:	.....15 to 40°C
Humidity:	.....80% up to 31°C
Altitude Limit:	.....2000 meters
Dimensions W x D x H:	
Base with 1 Deck:	.....29.75 x 24.375 x 13.5 (in); 75.7 x 63.0 x 34.3 (cm)
Base with 9 Decks:	.....29.75 x 24.375 x 70.5 (in); 75.6 x 63 x 179 (cm)
Weight:	
Base with 1 Deck:	.....70 lb (31.8 kg)
Base with 9 Decks:	.....238 lb (108 kg)
Additional Decks:	.....21 lb (19.5 kg)

Modular Cell Production Roller Apparatus

- 1 five-position base unit and up to 8 additional five position decks
- Distance between decks 7 1/8" (18.1 cm)
- Provides up to 75,000 cm² total surface area for cell growth
- Greaseless bearings prevent leaching and eliminate bearing seizures
- Optional rotation alarm and battery backup systems available
- All-position drive is standard allowing the use of glass or plastic roller bottles
- Conforms to UL, CSA and CE Standards
- 1 year warranty

The Wheaton Modular Cell Production Roller Culture Apparatus allows flexibility for scale-up and production of monolayer cell cultures in standard roller bottles. It accepts bottles from 108 to 121 mm in diameter and up to 550 mm in length. The system consists of a base drive unit and five-position roller deck to which additional roller decks can be added. A powerful DC motor, with soft-start speed control, drives the bottles through a series of durable nonslip belts.

The all-position drive model is a positive traction drive system for lightweight plastic bottles in which each roller is individually driven. Also included is a locking speed control knob that prevents accidental change in rotation rates.

This unit is available with one of seven standard electrical plugs shown. Additional configurations are available through special ordering. Contact Wheaton for more information. The Modular Cell Production Apparatus is supplied without roller vessels.

Please note that Roller Culture Apparatus is made to order and not returnable.

Accessories

Battery Backup System

Rotation Alarm

CART₂ Software

I.V. Crimp Chamber Assemblies

Battery Backup Option

- Protects cells during power outages
- Provides a minimum of 18 hours of auxiliary power
- Can be used to rotate vessels during transport to harvest area

Rotation Alarm System (Standard on R₂P™)

- Monitors drive system
- Alarm sound if any failure is detected
- Alarm is visual & audible

Both the battery backup and rotation alarm can be factory installed at time of purchase or they can be retrofitted in the field.

CART₂ Control Monitor and Recording Software for R₂P™

- Remotely monitors and controls up to 2,047 R₂P units
- Records all settings, changes, alarms, and communication loss
- Password-protected user levels maintain security
- Can be easily added to R₂P at any time
- Works with Windows® based software
- Computer Requirements: IBM Pentium PC or compatible
- Conforms to UL, CSA and CE Laboratory Standards

The Wheaton CART₂ System precisely controls rotating speeds of up to 2047 separate roller units. Each unit is monitored for rotation, speed deviation and communication. This system provides the perfect solution for GMP or FDA requirements.

Computer Requirements

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

