

Shaker Incubator

Shaker CO₂ Incubator

Roller Rack CO₂ Incubator



Shaker Incubator

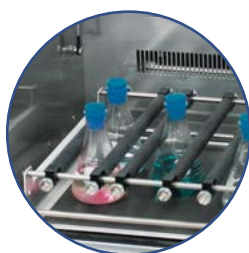
Combining a benchtop incubator/refrigerator with a dual-action (orbital and reciprocal) shaker, WS series shaking incubators offer versatility for a variety of biological and biotech applications.

Shaking Features

- > Dual shaking modes: orbital or reciprocal.
- > Speed range: 30 to 300 rpm.
- > Programmable shaking motion.
 - Timer range: 10 sec to 999 hr 59 min 59 sec.
 - Forward & Backward, Pause: 10 sec to 59 min 59 sec.
- > Selectable stroke length: 20, 30, 40mm.

Operating Features

- > Temperature control:
 - +5°C above ambient to 60°C . (for WS-300 and WS-600)
 - +15°C to 60°C . (for WS-300R and WS-600R)
- > Microprocessor PID control.
- > Simple calibration and auto-tuning functions.
- > Digital timer with delayed ON/OFF function: 1 min to 99 hr 59 min.
- > High temperature limit setting and open door alarm.
- > Convenient preset function for 3 most commonly used temperature settings.
- > Up to 9 temperature steps and maximum 200 cycles of repetition and programmable for each profile.
- > Adjustable 3-step fan speed with defrosting time and period control.
- > Intuitive control panel with bright LED display (0.1°C resolution) and push button keypad.
- > RS-232 interface.



Optional Accessories

- > Universal / Dedicated Platforms, Rubber Mats, Universal Attachments
- > Flask Clamps, Funnel Clamps
- > Test Tube Racks, Spring Wire Racks
- > Microplate Holders (three styles)
- > Lab Sticker

Constructional Features

- > Maintenance-free and durable BLDC motor.
- > High-velocity fan ensuring uniform temperature distribution and rapid thermal recovery.
- > Convenient sample monitoring thanks to the transparent acryl lid and the fluorescent lamp.
- > Gas spring lid supports providing soft closing, smooth motion, and stopping.
- > Environment-friendly CFC-free refrigerant.

Specifications

Product Name		WS-300	WS-300R	WS-600	WS-600R
Volume (L)		53	53	83	83
Temperature	Range(°C)	Ambient +5 ~ 60	15~60	Ambient +5 ~ 60	15 ~ 60
	Accuracy(°C)	±0.1 (38)	±0.1 (38)	±0.1 (38)	±0.1 (38)
	Stability(°C)	±1.0 (38)	±1.0 (38)	±1.0 (38)	±1.0 (38)
	Controller	Push button keypad.; Digital Display with PID automatic regulation			
	Heater	Heating Plate, 600W			
	Timer	Start / Stop / Duration setting; 10sec ~999hr 59min 59sec			
Shaker	Controller	PID automatic regulation			
	Power Unit	Brushless motor			
	Methods	Clockwise, Counter-clockwise, forth-back, interrupted,			
	Shaking Throw (mm)	20, 30 (standard), 40	20, 30 (standard), 40	20, 30 (standard), 40	20, 30 (standard), 40
	Speed (rpm)	30 ~ 300	30 ~ 300	30 ~ 300	30 ~ 300
	Stability (rpm)	± 1 (at 150rpm)	± 1 (at 150rpm)	± 1 (at 150rpm)	± 1 (at 150rpm)
Dimensions	Platform (W × D in mm)	350 × 350	350 × 350	450 × 450	450 × 450
	Inside (W × D × H in mm)	410 × 410 × 320	410 × 410 × 320	510 × 510 × 320	510 × 510 × 320
	Outside (W × D × H in mm)	440 × 740 × 625	440 × 740 × 625	540 × 850 × 625	540 × 850 × 625
Net Weight (kg)		74	85	91	102
Max. Load (kg)		10	10	15	15
Order No.		W6091050	W6095050	W6091080	W6095080

Accessories for Shaker Incubator



Sticky Plate

The Wiggins Sticky Plate can be loaded with any kind of vessels with a smooth base. Even at a speed of up to 350 rpm the vessel sticks to the plate.

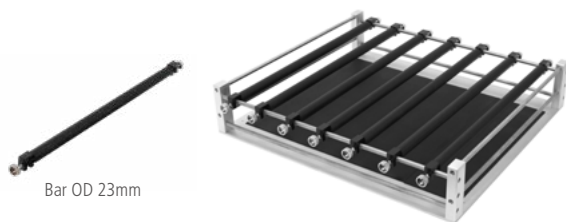
Suitable for	WS-300/300R	WS-600/600R
Order No.	31901	31902
Dimensions (W x D in mm)	350x350	450x450
Sticky (singal piece) (need 4 pieces for replacement on the try)	31901 -1	31902 -1
Try (Without sticky pieces)	31901 -2	31902 -2



Multi-Purpose Tray

The multi-purpose tray is made of stainless steel and can be used for a diverse range of unusual specifications.

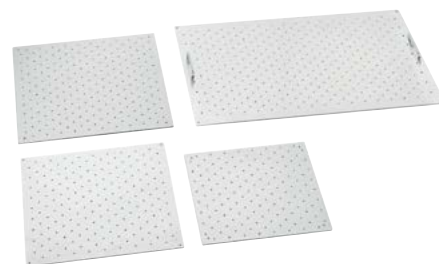
Suitable for	WS-300/300R	WS-600/600R
Order No.	31521	31522
Dimensions (W x D in mm)	350x350	450x450
Max. Load of Flasks		
50mL	16	25
100mL	9	16
250mL	4	9
300mL	4	9
500mL	4	5
1L	2	4
2L	1	2
2.8L	1	2



Bar OD 23mm

Adjustable bar tray

Suitable for	WS-300/300R	WS-600/600R
Order No.	31514	31515
Dimensions (W x D in mm)	300x300	400x400
Number of bar	3	3
Order No. of bar	31514-05	31515-05



Universal Tray

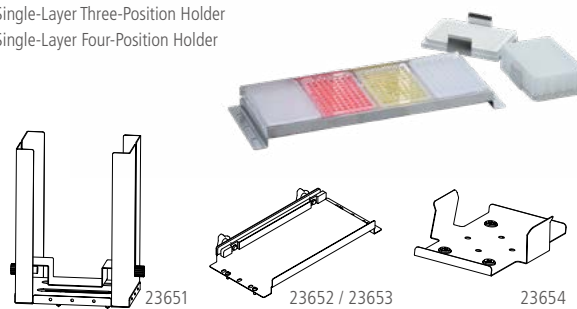
The Universal Trays employ a drilled grid for individual loadings of test tube holders, microtitre plates, and deep well plates.

Suitable for	WS-300/300R	WS-600/600R
Order No.	31501	31502
Dimensions (W x D in mm)	350x350	450x450
Max. Load of Flask Clamps		
50mL	28	45
100mL	24	36
250mL	13	18
300mL	13	18
500mL	10	13
1L	5	7
2L	4	5
2.8L	1	2
4L	-	-
Max. Load of Separatory Funnel Clamps		
250mL	4	6
500mL	2	3
1L	-	2
2L	-	-

Multi-Pore Holders

The Wiggins multi-pore holders can be installed on the Wiggins sticky plates or the Wiggins universal trays. All holders can be installed on small pores and deeper holes. In total, four different multi-pore holders are available:

1. Multi-Layer Holder
2. Single-Layer Single-Position Holder
3. Single-Layer Three-Position Holder
4. Single-Layer Four-Position Holder



Max. No. of Mountable Holders	Multi-Layer	Four-Position	Three-Position	Single-Position
Order No.	23651	23652	23653	23654
Max. mountable holders				
WS-300/300R	6	--	2	8
WS-600/600R	10	2	3	15



Rubber mat

Designed for low-speed applications, non-skid rubber mats allow quick addition or removal of flasks, plates or tubes.

Suitable for	WS-300/300R	WS-600/600R
Order No.	31531	31532
Dimensions(W x D x H mm)	352x352x23	450x450x23



Separatory funnel clamp

Funnel Volumes	250mL	500mL	1L	2L
Order No.	23562	23563	23564	23565
	152x60	165x70	230x80	255x90



Erlenmeyer flask clamp

Size of flask	Reference No.	Order No.
25mL	31274	-
50mL	31279	23550
100mL	31271	23551
250mL	31275	23552
300mL	-	23556
500mL	31280	23553
1000mL	31272	23554
2000mL	31273	23555
2800mL Fernbach	-	23557
3000mL	31277	-
4000mL	31278	23558
5000mL	31281	-
6000mL	-	23559

Plastic clamps for erlenmeyer flask

Order No.	Description	Order No.	Description
31285	100ml	31287	500ml
31286	250ml		

Stainless steel clamps for fernbach flask

Order No.	Description	Order No.	Description
31283	1.8L	31284	2.8L



Test tube rack for long type

Order No.	Description	Order No.	Description
31342	144 x Ø8mm	31356	39 x Ø18mm
31343	100 x Ø10mm	31358	36 x Ø20mm
31347	72 x Ø12mm	31359	33 x Ø22mm
31352	64 x Ø14mm	31360	20 x Ø25mm
31354	36 x Ø16mm	31361	16 x Ø30mm

Test tube rack for short type

Order No.	Description
31348	72 x Ø12mm
31353	64 x Ø14mm
31357	39 x Ø18mm (Suitable for Greiner Bio-one tube)

Rack for plastic test tube

Order No.	Description
31355	36x Ø16mm (15ml)
31362	16x Ø30mm (50ml)

187mm test tube rack for short type

Order No.	Description	Order No.	Description
31344	44 x Ø12mm	31349	21 x Ø20mm
31346	24 x Ø18mm		

Shaker Incubator

Laboratory space is both scarce and expensive, WSI series successfully combines flexibility, user-friendly operation and operational safety with the optimum utilization of space. Thanks to its modular construction and downwards-opening door, can either be a single unit for use on or under the laboratory bench, or operate as part of a stacked system.

Features

- > Easy to completed the stacking process
- > With electromagnetic drive technology, shaking stable and low noise
- > Integrated shaking unit, the volume of flask up to 2L
- > According to volume, temperature range and CO₂ concentration control, a total of 6 models are optional
- > Opening direction of the out door can be switched
- > With the inner glass door and LED light, it is convenient to observe the interior
- > Built-in circulation fan to ensure the uniformity of temperature field
- > Stainless steel chamber, easy to clean, anti-bacterial
- > Alarm for temperature deviation, speed deviation or open the door.
- > LED light turns on and the shaking stops after the door is opened
- > Independent safety temperature control to prevent overheating
- > A variety of accessories are optional



Specifications

Model		WSI-50	WSI-50R
Temperature	Range (25°C) °C	RT+7~60	RT-10~60
	Accuracy [°C]	±0.2	±0.2
	Uniformity [°C]	±0.2	±0.5
Shaking (Optional)	Speed [rpm]	20-300	20-300
	Accuracy	± 1%FS	± 1%FS
	Amplitude [mm]	25	25
Chamber Volume		71L	71L
Platform (w x d) mm		300 x 330	300 x 330
Capacity		100ml x 16	100ml x 16
		250ml x 9	250ml x 9
		500ml x 5	500ml x 5
		1000ml x 4	1000ml x 4
		2000ml x 1	2000ml x 1
Dimensions (w x d x h) mm	1 deck	400 x 600 x 618	400 x 600 x 618
	2 decks	400 x 600 x 1236	400 x 600 x 1236
Weight [kg]		110	140



Roller Rack CO₂ Incubator

WIGGENS CO₂ incubator with a roller apparatus or shaker inside the chamber, for adherent cells culture in the incubator. All operations and controls are on the external control panel. In addition to all the functions of the CO₂ incubator WCI-180, the roller rack CO₂ incubator has the following features:

- > 180-litre CO₂ with roller apparatus installed inside
- > Low noise by using a low vibration DC brushless motor
- > CO₂, humidity and temperature have good uniformity in the chamber
- > The roller apparatus can be easily removed for static cell culture
- > The external controller can control the internal rollers individually, and the speed displays on the TFT screen
- > The temperature and CO₂ value are displayed and controlled on the LED screen

Model		WCI-180R
Display of the incubator		LED
Capacity [L]		180
Temperature	Range [°C]	Rt+5-60
	Display Precision [°C]	±0.1 (37°C)
	Resolution [°C]	0.1
Speed control	Speed [rpm]	2~30
	Accuracy [rpm]	±1
	Division [rpm]	0.1
	Control	PID microprocessor
Humidity		≥70% (at 37°C)
	accuracy	±0.1% (5% / 37°C)
CO ₂	Resolution	0.1%
	Sensor	Dual infrared CO ₂ sensor
	Control	PID microprocessor
Timer		Continuous or up to 99h 59min
Jacket style		Air (six-side heating)
Interior material		304 stainless steel
Shelf		One for roller apparatus, and above space for static culture
Order No.		W6026180



Four Dia.100-120mm roller bottles can be installed with speed controller on the outside

Controller outside can monitor and control speed without opening the door.



More information about remote roller Celrol Mini, please refer to the page 148

Shaker CO₂ Incubator

In addition to all the functions of the WCI-180, the shaker CO₂ incubator has the following features:

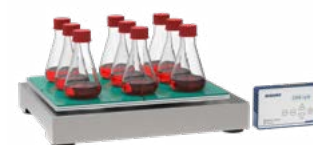
- > 180-litre CO₂ incubator with shaker installed inside
- > Low noise by using a low vibration DC brushless motor
- > CO₂, humidity and temperature have good uniformity in the chamber
- > The shaker can be removed for static cell culture
- > The standard universal plate, optional sticky plate
- > A variety of plate types (Erlenmeyer flasks: 100mL, 250mL, 500mL, 1000mL, test tube clamps, 96-well plates)
- > The external controller can control the internal rollers individually
- > The speed, temperature and CO₂ value are displayed and controlled on the LED screen

Model		WCI-180S
Display		LED
Capacity [L]		180
Platform Size (W x L mm)		300x330
Temperature	Range [°C]	Rt+5-60
	Display Precision [°C]	±0.1 (37°C)
	Resolution [°C]	0.1
Speed control	Speed [rpm]	30-300
	Accuracy [rpm]	±1
	Division [rpm]	1
	Control	PID microprocessor
Humidity		≥70% (at 37°C)
	Accuracy	±0.1% (5% / 37°C)
CO ₂	Resolution	0.1%
	Sensor	Dual infrared CO ₂ sensor
	Control	Microprocessor
Timer		Continuous or up to 99h 59min
Jacket style		Air (six-side heating)
Interior material		304 stainless steel
Shelf		One for shaker
Order No.		W6027180



Flasks with volume of 100~1000mL can be put on the shaker inside. Brushless DC motor makes it low vibration, dust-free, low noise and very suitable for cell culture

Controller outside can monitor and control speed without opening the door.



More information about shaker SRC, please refer to the page 138

Shaker CO₂ Incubator

The WIGGENS shaker CO₂ incubator is ideal for use in the fields of biosimilar production, proteomics, crystallography, genomics, cell biology and new drug development. A large capacity CO₂ incubator with separable long life shakers provides the optimum solution for cell suspension culture.

The internal chamber is subdivided into 3 compartments each holding a separable orbital shaker which can hold Erlenmeyer, cylindrical flasks or deep well blocks. The dual beam Infrared sensor provides precise CO₂ control while the six side heating system ensures excellent temperature control and recovery and also humidity. An outstanding air circulation system ensures temperature uniformity within all compartments.

The unique patented orbital shakers are constructed with stainless steel to minimize contamination and cleaning. Well sealed plate type BLDC motor allows these shakers to be used in highly humid environment and operate without noise, vibration or particulate generation. These powerful shakers can be used for many years with reliability guaranteed.



Features

Cell suspension culture

The shaker CO₂ incubator is designed for the suspension culture of eukaryotic cells such as CHO, HEK, Hela etc. but can also be used as a static incubator if required.

Infrared sensor

Industry standard dual beam infrared sensor is used to maintain control of CO₂ density

Pullout shaker platform

The platform of each shakers can be pulled out for loading flasks on each shakers efficiently.

Sticky mat & various holders

The orbital shakers can be used with sticky mats or dedicated flask holder trays or universal flask/tube holder plates.

Individual shaker control

Each orbital shaker can be individually controlled by an external control panel.

Excellent temperature control

All 6 sides are directly heated and combined with PID control to ensure that temperatures are reached quickly and uniformity is maintained. Further the system combines forced air and natural convection to maintain the best temperature uniformity at all times.

High and natural humidification

A deep and wide humidity tray allows high and natural humidity to be generated.

Split inner glass doors

The internal chamber is separated into three compartments, each with its own shelf, shaker and glass door. This design prevents excessive loss of heat and CO₂ when removing flasks etc.

Humidity display

LED display of actual humidity in the chambers informs the user of time to supplement the water in the humidity tray

Auto restart function

Each shaker has an autostart function so that if the glass inner door to each compartment is opened the shaker in that compartment stops and starts again when the door is closed. Auto start is also enabled if there is a power cut.

UV lamp

A UV lamp sited next to the circulation fan works to sterilize the air in the incubator even during cell culturing. The UV lamp can be turned on or off by a switch on the front panel.

Stain resistant interior

The inner chamber and all orbital shakers are constructed with stainless steel SUS304 which is designed for use in GMP facility and is resistant to rust formation under high humidity conditions

Anti-bacterial filter

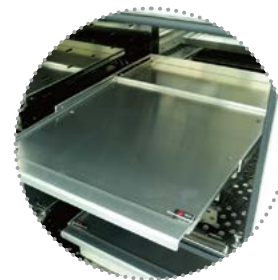
A HEPA filter, located in post circulation fan, traps microbes and helps to maintain a sterile environment.

Removable shelves

Larger growth vessels like 5 or 10 liter flasks can be accommodated by completely removing the shelves

Specifications

Model	WCI-650CH	WCI-850CH
Display	LED	LED
Chamber volume [L]	650L	850L
Temp.	Range [°C]	Ambient +5-60
	Accuracy [°C]	±1 (at 37°C)
Shaker	Shaking motion	Orbital
	Speed range [rpm]	30-300
	Speed accuracy [rpm]	±1
	Speed increment [rpm]	1
	Orbit diameter [mm]	25
Humidity		≥70% (at 37°C)
	Range	0-20%
CO ₂	Accuracy	±0.3% (at 5% at 37°C)
	Sensor	IR CO ₂ sensor
	Inlet pressure [bar]	0.7-1
Time	Time range	Continuous or up to 99h59min
	Time accuracy	±1%
	Time increment [min]	1
Jacket type	Air jacket type (6-side heating)	
Filter	Anti-Bacterial HEPA filter	
Sterilization	U.V 4Wx1ea	
Shelves	3ea	
Dimension (WxDxH) [mm]	Chamber dimensions	700x650x1430mm
	Platform size	520x520mm
	Compartment 1 (Bottom):	700x800x410
	Each compartment dimension	
	Compartment 2, 3 (Middle, Top):	
Weight [kg]	Overall dimensions	820x780x1740
		820x920x1840
Power	220V, 50/60Hz	
Order No.	W6027650	W6027850



Maximum allowance for flask capacity

WCI-650CH	WCI-850CH
100mL x 156	100mL x 156
250mL x 90	250mL x 90
500mL x 60	500mL x 60
1000mL x 48	1000mL x 48
2000mL x 9	2000mL x 27

*Optimum performance for maximum allowance can be obtained at 150rpm.

Universal Tray

The Universal Trays employ a drilled grid for individual loadings of test tube holders, microtitre plates, and deep well plates.



Suitable for	WCI-650CH / WCI-850CH
Order No.	W6100402
Dimensions (W x D in mm)	520 x 520

Sticky Plate

The Wiggins Sticky Plate can be loaded with any kind of vessels with a smooth base. Even at a speed of up to 350 rpm the vessel sticks to the plate. Other vessels, like microtitre plates can be shaken on the Wiggins Sticky Plate as well. but, only up to a speed of 220 rpm.



Suitable for	WCI-650CH / WCI-850CH
Order No.	W6100401
Dimensions (W x D in mm)	520 x 520

Multi-Purpose Tray

The multi-purpose tray is made of stainless steel springs and can be used for a diverse range of unusual specifications.



Suitable for	WCI-650CH / WCI-850CH
Order No.	W6100403
Dimensions (W x D in mm)	520 x 520



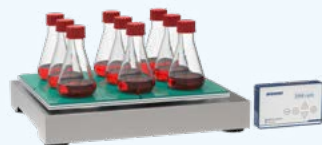
Erlenmeyer Flask Clamp

Size of flask	Reference No.	Order No.
25mL	31274	-
50mL	31279	23550
100mL	31271	23551
250mL	31275	23552
300mL	-	23556
500mL	31280	23553
1000mL	31272	23554
2000mL	31273	23555
3000mL	31277	-
4000mL	31278	23558
5000mL	31281	-
6000mL	-	23559

Biomix for CO₂ Incubators



WCI-180S



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Celshak™

CO₂ Incubator with Shaker installed inside

- > With Wiggins shaker, our customer will get better cell growth effect.
- > O₂ transfer rate is increased
- > The problem of media gradients was eliminated by mixing media
- > To avoid cell deposition and accumulation in suspension culture



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WCI-180R

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Celrol™

CO₂ Incubator with Roller installed inside

- > With Wiggins roller rack, our customer will get better cell growth effect.
- > Suitable for serum flask, medium flask and culture tube
- > Suitable for cell culture or staining process
- > Speed range from 0.2~8.1 rpm



CO₂ Incubator



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Celstir™

CO₂ Incubator with Magnetic stirrer installed inside

- > With special magnetic stirrer and vessel, our customer will get better cell growth effect.
- > With IP 68 class, magnetic stirrer has a long service life
- > Remote speed control system
- > Low heat dissipation design, can not affect the temperature and CO₂ control of incubator

CELLine™

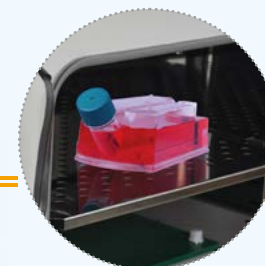
CO₂ Incubator with Biological culture

Biological culture that uses a semi-permeable membrane separation technique between cell compartment and medium compartment, which breaks through the constraints of conventional cell culture on cell growth by air, nutrients, and metabolic inhibitors. It largely mimics the environment in which cells grow in organisms. The aim of high density cell culture and high concentration product expression was realized.

- > A disposable cell culture device that can be used at any time
- > Reduce the use of consumables
- > High cell density and product concentration
- > Can be stacked to save space
- > Save the time, no more external equipment is needed



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Cell Culture Roller Rack

WIGGENS cell culture roller rack Celrol Mini and Celrol Mid is highly flexible in facilitating its operation not only inside the incubator but also elsewhere on the work table. Remote control box can be attached to the incubator surface and flat cable needs no particular measures such as the access port. Its operation capacity is 2000mL bottle x 4ea (Mini) and 2000mL bottle x 6ea (Mid) at one time. The speed range is 0.2rpm to 8.1 rpm to help users utilize adherent cell culture performance.

Features

- > Steel reinforced polyurethane timing belts
- > Brushless DC Motor
- > Powder coated aluminum for durability and cleanliness
- > Non-slip rubber material for the best performance of rolling
- > Designed for no idle roller by drive-belt



Specifications

Model	Celrol Mini	Celrol Mid
rpm Range [rpm]	0.2~8.1	0.2~8.1
Accuracy [rpm]	1	1
Increment [rpm]	0.1	0.1
Control	Microprocessor digital PID	Microprocessor digital PID
Time Range	Continuous or up to 999h 59min	Continuous or up to 999h 59min
Accuracy	±1%	±1%
Display	LED Display	LED Display
Motor type	Brushless DC motor	Brushless DC motor
Standard roller bottle [mm]	110 to 120, 4ea	110 to 120 6ea
Roller deck dimension [WxDxH][mm]	362×299×212	362×299×412
Overall dimension [WxDxH][mm]	375×370×345	375×370×545
Power	AC 90~264V, 50/60Hz, 10W	AC 90~264V, 50/60Hz, 10W
Weight [kg]	12.5	13.5
Order No.	W6110100	W6110200



Can contain four Dia.100-120mm roller bottles.

Outside control

Controller can adjust speed without opening the door.

Cell Culture Roller Rack



Layer	Celrol Pro	Celrol Elite
1	322mm	275mm
2	483mm	427mm
3	645mm	580mm
4	806mm	732mm
5	968mm	885mm
6	1129mm	1037mm
7	1291mm ¹⁾	1190mm
8	1452mm	1342mm ¹⁾
9	1614mm ²⁾	1495mm
10		1647mm ²⁾
11		1800mm

¹⁾Suitable for WH-850X

²⁾Suitable for WCI-1200 & WH-1200

Celrol Pro

- > Smooth ramping digitally controlled rotation accurate to 0.01 rpm
- > Maintenance-free precision brushless motor
- > Bright TFT display for easy operation
- > SMS alarm function
- > Can Be directly connected to the printer

Specifications

Model	Celrol Pro
Display	TFT
Capacity	5~55 Positions
Bottle Speed (110mm Bottle) [rpm]	0.08~2.5
Diameter of roller bottles [mm]	108~121
Length of roller bottles [mm]	Max. 550
Accuracy [rpm]	0.01
Drive	Belt Driven
Motor Type	Brushless DC
Rotation Direction	Clockwise and Counter-Clockwise
Options	Temperature Alarm and Battery Backup
Remote Communication	RS232
Humidity	80% up to 37°C
Operating Temperature [°C]	10 to 40
Electrical	100-240 VAC, 50/60 Hz

Celrol Elite

- > Robust touch screen interface that is easy to view from a distance
- > Readily recognizable icons for intuitive navigation
- > Digitally controlled maintenance-free motor accurate to 0.01 rpm
- > RS-422 Modbus RTU, RS-4485 Modbus RTU, Modbus TCP and TCP/IP
- > SMS alarm function
- > Can Be directly connected to the printer

Specifications

Model	Celrol Elite / GMP
Display	SIMATIC HMI Touch Screen
Capacity	8~88 Positions 5~55 Positions
Bottle Speed (110mm Bottle) [rpm]	0.08~2.5
Diameter of roller bottles [mm]	108~121
Length of roller bottles [mm]	Max. 550
Accuracy [rpm]	0.01
Drive	Belt Driven
Motor Type	Brushless DC
Rotation Direction	Clockwise and Counter-Clockwise
Options	Temperature Alarm and Battery Backup
Remote Communication	RS-422 Modbus RTU, RS-4485 Modbus RTU, Modbus TCP and TCP/IP
Humidity	80% up to 37°C
Operating Temperature [°C]	10 to 40
Electrical	100-240 VAC, 50/60 Hz