

# Hybridization Apparatus



# Big SHOT III™ Hybridization Oven

## Models 230402 and 230402-2

Whether you are working with Northern Blots, Southern Blots, Microarrays or another application that requires incubation, you will find the Big SHOT III™ Hybridization Oven is a perfect fit for the job. This unit is designed to provide rapid heat-up, excellent temperature stability and efficient mixing for all types of hybridization and incubation applications. The Big SHOT III™ unit is stackable and is provided with a reversible door so that you may optimize your bench space. Additional features include a digital timer that is fully programmable up to 99 hours/ 59 minutes, an adjustable safety cut-out as well as a removable drip tray for easy clean-up. Each Big SHOT III™ Hybridization Oven is provided with a standard carousel which holds up to ten 35 x 300mm bottles or twenty 35 x 150mm bottles.

Boekel Scientific provides a full line of accessories which make it possible to accommodate many different vessel sizes, types, quantities and orientations. To complete your application needs, this unit can accommodate an optional large bottle carousel which holds four 70 x 220mm bottles, a multi-tube carousel which holds one hundred 1.5ml or 2.0ml conical tubes and thirty-five 15ml tubes, or a microplate carousel which holds up to 10 sealed standard or deep well plates. Additionally, the Oven can be converted to a platform rocker with an optional rocker platform attachment.

### Features:

- PID temperature controller for rapid heat up and excellent temperature stability
- Forced air convection
- User settable over temperature safety thermostat
- Fully programmable digital timer - up to 99 hours, 59 minutes
- Carousel speed up to 60 RPM in 1 RPM increments
- Reversible door
- Stackable
- Easy to remove stainless steel drip pan



	Model 230402 (115 VAC)	Model 230402-2 (230 VAC)
Vessel Capacity (standard carousel included)*	10 - 35 mm x 300 mm, or 10 - 35 mm x 225 mm, or 20 - 35 mm x 150 mm, or 20 - 35 mm x 100 mm bottles	
Temperature Range	Ambient +10°C to 100°C	
Temperature Set Range	0°C to 100°C	
Stability	+/-0.2°C	
Accuracy	Ambient +65°C in 25 minutes	
Heat-up Time	+/-0.25°C at 65°C	
Overall Dimensions (Width x Length x Height)	47.6 cm x 35.9 cm** x 47.9 cm (18.75 in x 14.12 in x 18.87 in)	
Chamber Dimensions (Width x Length x Height)	34.3 cm x 25.7 cm x 27.3 cm (13.5 in x 10.12 in x 10.75 in)	
Speed	5 to 60 RPM (variable)	
Timer	Up to 99 hr 59 min	
Net Weight	19.1 kg (42 lb)	
Shipping Weight	24.5 kg (65 lb)	
Electrical	115 VAC 60 Hz 320 W (UL/ CSA)***	230 VAC 50/60 Hz 325 W (CE)

\*See the section on accessories for carousels that hold different vessels.

\*\*Add 3" for Power Cord

\*\*\*Certified to UL 61010A-1 and CSA C22.2 No. 1010

# Big SHOT III™ Accessories

## Carousels and Clips

**Model 230442** - The Multi-Tube Carousel works with a variety of interchangeable clip sizes to hold a combination of 50 mL, 15 mL, 2.0 mL, and 1.5 mL tubes, allowing for simultaneous processing of multiple sized tubes. The clips are supplied with mounting hardware, and mount onto the plates on the carousel. Depending on the tube size, the tubes may be positioned horizontally, vertically, or at an angle.



Number of Plates on Carousel	Tube Sizes Held	Maximum No. and Orientation of Tubes per Plate	Total Number of Tubes Held (carousel fully loaded)	Corresponding Clips (Bags of 50)
5	50 mL	5 Horizontal	25	230250
		6 Vertical	30	
5	15 mL	6 Horizontal	30	230215
		7 Vertical	35	
5	2.0/ 1.5 mL	20 Any orientation	100	230210

## Carousel for Microplates

**Model 230426** - These carousels hold standard microplates or deep well plates. (Plates must be sealed before use in carousel.)

Microplate Carousel	No. of Plates Held per Carousel
230426	10



## Large Bottle Carousel

**Model 230440** - For processing large membranes, this carousel holds four 70 mm x 220 mm (750 mL) acrylic bottles, or four 55 mm x 180 mm (400 mL) acrylic bottles.



## Rocker Platform

**Model 230420** - Use the Rocker Platform for incubation of large blots in flat-bottomed containers.

Platform dimensions	21.5 cm x 28.0 cm x (8.5 in x 11 in)
Weight capacity	5.0 kg (11 lb)
Speed	5 - 60 strokes per minutes, variable speed
Rocking angle	16°



## Large Acrylic Bottles and Gaskets

Large bottles are constructed of beta-blocking acrylic. Designed with screw-on cap and leak-proof gasket.

Bottle Size	Model Number
70 mm x 220 mm (750 mL) bottle, each	502-0009
55 mm x 180 mm (400 mL) bottle, each	502-0010
Gasket for 502-0009, package of 2	A1902701
Gasket for 502-0010, package of 2	A1902702



# Little SHOT III™ and Bambino™ Hybridization Ovens

Models 230502 and 230502-2 | Models 230301 and 230301-2

Whether you are working with Northern Blots, Southern Blots, Microarrays or another application that requires incubation, you will find the Little SHOT III™ or the Bambino™ Hybridization Oven is a perfect fit for the job. These units are each designed to provide rapid heat-up, excellent temperature stability and efficient mixing for all types of hybridization and incubation applications.

Boekel Scientific provides a full line of accessories for both the Little SHOT III™ and the Bambino™ Hybridization Ovens which make it possible to accommodate many different vessel sizes, types, quantities and orientations.

## Little SHOT III™ medium capacity hybridization oven

- PID temperature controller for rapid heat up and excellent temperature stability
- Lift off lid for full access to heating chamber
- Stainless steel drip pan
- Forced air convection delivers excellent uniformity



## Bambino™ compact hybridization oven

- Holds up to four 50 mL, six 15 mL or twelve 2.0/ 1.5 mL polypropylene conical centrifuge tubes
- Forced air convection delivers excellent uniformity
- Highly compact, yet offers the same features found in larger, more expensive units
- Tubes rotate within the chamber at an adjustable rate of 6 - 20 RPM
- A stainless steel heating chamber with sealed floor seam for easy cleaning and a clear acrylic lid



	Little SHOT III™		Bambino™	
	Model 230502 (115 VAC)	Model 230502-2 (230 VAC)	Model 230301 (115 VAC)	Model 230301-2 (230 VAC)
Vessel Capacity (standard carousel included)*	4- 35 mm x 300 mm, or 4 - 3 m x 25 mm, or 8 - 35 mm x 150 mm, or 8 - 35 mm x 100 mm bottles		4 - 50 mL conical tubes	
Temperature Range	Ambient + 10°C to 75°C		Ambient + 10°C to 80°C	
Temperature Set Range	0°C to 100°C		0°C to 80°C	
Stability	+/-0.5°C		+/-0.1°C	
Accuracy	+/-0.5°C		+/-0.5°C	
Heat-up Time	Ambient to 65°C in 20 minutes		Ambient to 70°C in 25 minutes	
Speed	5 to 60 RPM (variable)		6 to 20 RPM (variable)	
Timer	Up to 99 hr 59 min		NA	
Overall Dimensions (Width x Length x Height)	22.9 cm x 59.1 cm x 33.0 cm (9.0 in x 23.25 in x 13.0 in)		25.4 cm x 26.7 cm x 16.2 cm (10.0 in x 10.5 in x 6.5 in)	
Chamber Dimensions (Width x Length x Height)	17.1 cm x 32.4 cm x 22.2 cm (6.75 in x 12.75 in x 8.75 in)		15.0 cm x 15.0 cm x 14.0 cm (6.0 in x 6.0 in x 5.5 in)	
Net Weight	12.5 kg (27.5 lb)		4.4 kg (10 lb)	
Shipping Weight	14.8 kg (32 lb)		5.9 kg (13 lb)	
Electrical	115 VAC 60 Hz 290 W (UL/ CSA)**	230 VAC 50/60 Hz 290 W (CE)**	115 VAC 50/60 Hz 90 W	230 VAC 50/60 Hz 90 W

\*See the section on accessories for carousels that hold different vessels.

\*\*Certified to UL 61010A-1 and CSA C22.2 No. 1010

# Little SHOT III™ & Bambino Accessories

## Carousels and Clips

Models 230552 & 230332 - The Multi-Tube Carousels work with a variety of interchangeable clip sizes to hold a combination of 50 mL, 15 mL, 2.0 mL, and 1.5 mL tubes, allowing for simultaneous processing of multiple sized tubes. The clips are supplied with mounting hardware, and mount onto the plates on the carousel. Depending on the tube size, the tubes may be positioned horizontally, vertically, or at an angle.



Multi-Tube Carousels  
for Little SHOT III



Multi-Tube Carousels  
for Bambino

### Multi-tube Carousel for Model 230502

Number of Plates on Carousel	Tube Sizes Held	Maximum No. and Orientation of Tubes per Plate	Total Number of Tubes Held (carousel fully loaded)	Corresponding Clips (Bags of 50)
2	50 mL	6 Horizontal	10	230250
2	15 mL	6 Horizontal	12	230215
2	2.0/ 1.5 mL	20 Any orientation	40	230210

### Multi-tube Carousel for Model 230301

Number of Plates on Carousel	Tube Sizes Held	Maximum No. and Orientation of Tubes per Plate	Total Number of Tubes Held (carousel fully loaded)	Corresponding Clips (Bags of 50)
2	50 mL	2 Horizontal	4	The following clips are included with the carousel: 4 - 50 mL clips 6 - 15 mL clips 12 - 2.0/1.5 mL clips
2	15 mL	3 Horizontal	6	
2	2.0/ 1.5 mL	6 Any orientation	12	

### Little SHOT III™ Carousel for Microplates

**Model 230710** - These carousels hold standard microplates or deep well plates. (Plates must be sealed before use in carousel.)

Microplate Carousel	No. of Plates Held per Carousel
230710	4



### Big SHOT III™ & Little SHOT III™ Glass Hybridization Bottles

All glass bottles are supplied with blue caps and silicone "O" ring.

Bottle Size	Model Number
35 mm x 300 mm, package of 2	502-0300
35 mm x 225 mm, package of 2	502-0225
35 mm x 150 mm, package of 2	502-0150
35 mm x 100 mm, package of 2	502-0100

### Caps and "O" Rings for Glass Hybridization Bottles

Description	Model Number
Blue caps with silicone "O" rings, package of 2	505-0001
Replacement silicone "O" rings for blue caps, package of 10	502-0500
Red caps with Teflon® liners, package of 2	509-0009

### Nylon Mesh

Mesh Size	Model Number
15 cm x 10 cm, package of 5	230415
23 cm x 23 cm, package of 5	230423



# Boekel InSlide Out™ Hybridization Oven

## Models 241000 and 241000-2

The Boekel InSlide Out™ Hybridization Oven is designed for a variety of hybridization and immunohistochemical procedures involving slides. Prepared slides are placed into the uniquely sealed aluminum tray for incubation, which maintains humidity and prevents the slides from drying out.

This design provides effective incubation conditions without the need to seal cover slips. The rapid heat-up and excellent temperature stability ensure consistency from test to test, making it ideal for use in hybridization and immunohistochemical procedures.



### Features:

- PID temperature controller for rapid heat up and excellent temperature stability
- 20 slide capacity
- Unique sealed aluminum tray maintains temperature and humidity during incubation
- Optional polycarbonate slide holder insert accommodates 18 slides 1 x 3, and may be placed directly into a water bath for wash procedures

Accessories	Model Number
Polycarbonate slide holder insert for up to 18 slides	C2403765
Aluminum tray assembly (tray and lid - included)	C2403973
Stainless steel rack insert for tray (included)	C2403754

	Model 241000 (115 VAC)	Model 241000-2 (230 VAC)
Temperature Range	Ambient + 10°C to 75°C	
Temperature Setting Range	0°C to 75°C	
Stability	+/- 0.2°C	
Accuracy	+/- 1°C at 65°C	
Display Resolution	0.1°C	
Heat-up Time (ambient to 50°C)	Chamber: 20 minutes	
Heat-up Time (ambient to 50°C)	Tray: 25 minutes	
Overall Dimensions (Width x Length x Height)	45.7 cm x 45.1 cm x 15.2 cm (18 in x 17.75 in x 6 in)	
Chamber Dimensions (Width x Length x Height)	19.4 cm x 29.5 cm x 1.9 cm (7.5 in x 11.5 in x .75 in)	
Height Above Stainless Steel Rack	9.5 mm (.375 in)	
Capacity with Stainless Steel Rack	20 - 1 in x 3 in slides, or various other sizes	
Capacity with Plastic Slide Holder	18 - 1 in x 3 in slides only	
Net Weight	9.5 kg (21 lb)	
Shipping Weight	10.9 kg (26 lb)	
Electrical	115 VAC 50/60 Hz 155 W (UL/ CSA)*	230 VAC 50/60 Hz 155 W (CE)

\* Certified to UL 61010A-1 and CSA C22.2 No. 1010

# Boekel Slide Moat™ Hybridization Bath

## Models 240000 and 240000-2

The Boekel Slide Moat™ is a versatile microscope slide incubator that is equally at home in a clinical or basic research laboratory. The Slide Moat™ has been specifically designed for the rigors of in situ hybridization or denaturation and is superb for all slide drying and warming procedures used in histology, cytology or pathology labs.

The Slide Moat™ has an operating temperature range of 30°C to 100°C and uses a PID controller for easy temperature selection, rapid heat up and superb stability. This unit has a tight fitting tempered glass lid which seals to an integral gasket on the heating base. This airtight lid seals in moisture and only a few drops of water are required to maintain a saturated atmosphere for overnight incubations. The Slide Moat™ accommodates up to 30 standard microscope slides 1 x 3 inch or specialty slides designed for in situ procedures.

### Features:

- 30 standard microscope slide capacity
- PID temperature controller for easy temperature selection
- Tempered glass lid which seals with integral gasket on heating base
- Excellent temperature uniformity and stability

NOTE: Boekel strongly recommends using covered and sealed slides for higher temperatures (> 37° C) or prolonged period incubations (> 1 hour).



Accessories	Model Number
Light shield cover	C1303205

	Model 240000 (115 VAC)	Model 240000-2 (230 VAC)
Temperature Range	Ambient + 5°C to 100°C	
Heat-up Time	Ambient to 65°C in 20 minutes	
Temperature Setting/ Display	PID/ LED	
Stability*	Typically +/- 0.2°C or better throughout operating temperatures	
Uniformity**	+/- 35°C at 37°C; +/- 0.7°C at 65°C	
Capacity	30 - 1 in x 3 in slides, 3 rows of 10	
Overall Dimensions (Width x Length x Height)	40.6 cm x 34.9 cm x 14.6 cm (16 in x 13.75 in x 5.75 in)	
Clearance between lid and slide pedestal	1.0 cm (.48 in)	
Net Weight	8.2 kg (18 lb)	
Shipping Weight	10.4 kg (23 lb)	
Electrical	115 VAC 50/60 Hz 200 W (UL/ CSA)***	230 VAC 50/60 Hz 155 W (CE)

\*Stability is the variation in temperature at a single point over a long period of time.

\*\*Uniformity is the variation in temperature at any 2 locations on the heating plate at any instant in time.

\*\*\*Certified to UL 61010A-1 and CSA C22.2 No. 1010

# Shake 'N' Bake™ Hybridization Oven

## Models 136400 and 136400-2

The Boekel Shake 'N' Bake™ Hybridization Oven is ideal for hybridizing and prehybridizing membranes used in Southern and Northern blotting techniques. The gentle rocking motion provides washes that are less messy than a shaking water bath and more convenient than a shaker inside a conventional incubator. The small footprint conserves valuable bench space.

Shelves are removable to increase space for taller vessels. The control panel features temperature selection buttons, an easy to read LCD temperature display, an independently calibrated safety thermostat and a speed adjustment knob.



### Features:

- PID temperature controller for rapid heat up and excellent temperature stability
- Small footprint to conserve bench space
- Gasket sealed metal and acrylic see-through door
- Shaking speed 8 to 25 RPM
- Each unit is supplied with three shelves spaced 63.5mm apart, accommodating dishes or heat sealed bags.

	Model 136400 (115 VAC)	Model 136400-2 (230 VAC)
Temperature Range	Ambient +5°C to 70°C	
Rocking Speed	8 to 25 strokes per minute	
Tilt Angle	5.5 to 11	
Stability Chamber	+/-0.2°C at 65°C	
Sample Vessel	+/-0.25°C at 65°C	
Overall Dimensions (Width x Length x Height)	32.0 cm x 37.0 cm x 41.0 cm (12.5 in x 14.5 in x 16 in)	
Chamber Dimensions (Width x Length x Height)	29.0 cm x 29.0 cm x 27.0 cm (11.5 in x 11.5 in x 10.5 in)	
Tray Dimensions (Width x Length x Height)	22.0 cm x 20.0 cm x 1.3 cm (8.5 in x 8 in x .5 in)	
Maximum Shelf Load	1.0 kg (2.25 lb)	
Temperature Setting/ Display	PID/ LED	
Net Weight	11.0 kg (24 lb)	
Shipping Weight	12.9 kg (28 lb)	
Electrical	115 VAC 50/60 Hz 230 W	230 VAC 50/60 Hz 230 W (CE)