



## Ovens

BOF Series - Forced-air Convection

BON Series - Natural Convection

BOV Series - Vacuum

## being Introduction

*BEING is an economically priced, high-end, high-performance laboratory equipment brand. We are committed to providing users with intelligent, intuitive, and professional laboratory equipment that modern laboratories require.*

*Besides the BOF and BON drying ovens and BOV vacuum ovens, BEING offers laboratories a broad portfolio of incubators, shakers, stirrers, evaporators, water baths, chillers, and vacuum pumps.*

## BOF / BON Drying Ovens



### **Our next generation drying ovens are the 'Smart Choice' for convection drying ovens.**

With 9 different models to choose from, BEING offers one of the largest selections of forced-air and natural convection lab ovens on the market. They are ideal for applications such as aging tests, baking and curing, dehydrating, dry sterilization, glassware drying, moisture and stability test processing electronics, and regenerating desiccants and catalysts in chemistry, clinical, forensic, electronics, material processing, pharmaceutical, and research laboratories.

All of our ovens are energy efficient, have excellent temperature regulation capabilities, and come with a host of features that provide safe and easy operation — and are economically priced. They're all designed, manufactured, and tested to the DIN 12880-2007 standard, providing a long service life.

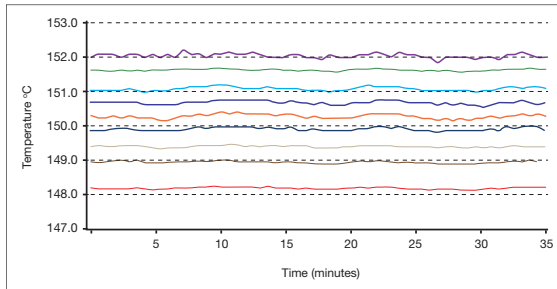
This combination of selection, specifications, features, quality, and value makes BEING drying ovens the smart choice.



## Precise temperature control

BEING BOF and BON series drying ovens provide a precise and steady heating environment that ensures consistent product quality, lowers the chances for rework and helps achieve reliable production results while reducing your laboratory's energy costs by being energy efficient.

### Temperature Uniformity

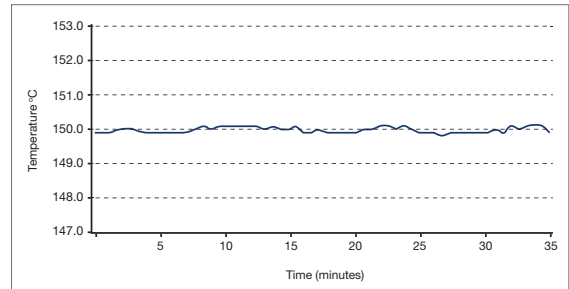


The drying chamber's temperature uniformity enables all samples to be heated evenly.

BOF series:  $\leq \pm 1.5^{\circ}\text{C}$  to  $\pm 3.5^{\circ}\text{C}$  depending on oven size.

BON series:  $\leq \pm 3.0^{\circ}\text{C}$

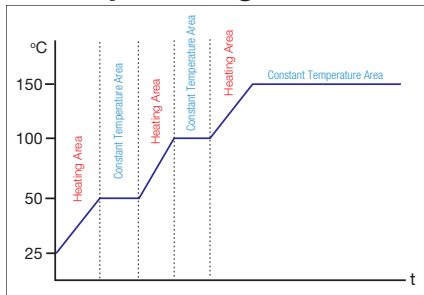
### Temperature Stability



The drying chamber's temperature stability of  $\pm 0.5^{\circ}\text{C}$  ensures experiment stability.

Note: The stability and uniformity are measured at steady-state with an empty chamber according to DIN 12880.

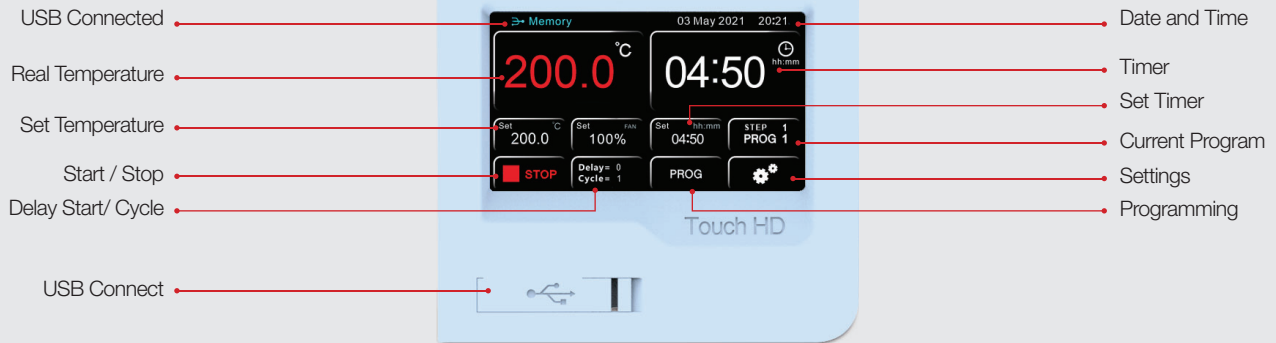
### Step Heating Control



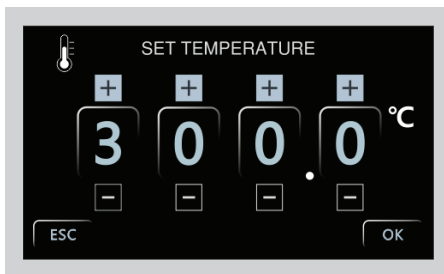
In program control mode, the controller allows the operator to set up step heating control.

Controller & Safety Feature		Forced-air Convection Oven	Natural Convection Oven
Series		BOF	BON
Controller	Automatic Power on/off	√	√
	PID automatic control	√	√
	Data collection	USB	USB
	Programmable functions	√	√
	Fixed-value programs	√	√
	Multi-step programs	√	√
	Program cycling	√	√
	Timed & Untimed	√	√
	Fan speed - Adjustable	√	√
RUN delay	√	√	
Port	Test hole	√	√
Safety	Over-temperature protection	√	√
	Temperature limit protection	√	√
	Over-current protection	√	√
	Power off memory	√	√
	Anti-scalding protection	√	√

# Intelligent Controller Features



The BEING intelligent controller has a 4.3-inch color, easy-to-read, real-time touchscreen display to select the various functions with all the parameters — temperature, fan speed, time, program number, and step — on a single screen, providing quick and easy setting of temperature, time, and other parameters — and convenient operation.



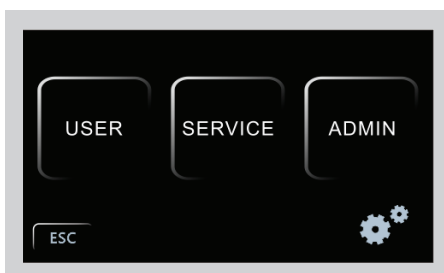
## Easy to use

Simple and intuitive setting of all the operating parameters thanks to easy-to-understand icons and symbols. The capacitive display ensures touch sensitivity and precision — even when wearing gloves.



## Programmable control at your fingertips

The oven is designed to be used immediately out of the box with a single (fixed value) timed (1 minute to 99 hours and 59 minutes) or untimed program. But, if you need to simplify complicated testing processes and realize automatic control, that can be easily achieved. You can store and run up to 8 multistep programs with 8 steps each. Parameters such as multi-stage temperature, circulating fan speed (BOF series), and time can be set and programmed on one screen. On/RUN delay and program cycling are easily programmed.



## Password Protected

The controller has 3 settings access levels: User, Service, and Admin. The user settings level allows access to all the operational parameters (temperature, heating rate, fan speed, and time) for running an experiment. The service and admin level menus are password protected to avoid accidental changes to “sensitive” parameters.

# Oven Features



## Space saving stackability

At the recommendation of our customers, we have designed the **BOF-50T**, **BOF-120T**, **BON-50T**, and **BON-115T** models to be stackable to save space. Mounting buttons on the oven top and matching indentations in the feet provide easy alignment of another oven and ensure the top oven doesn't move.



## USB data collection

Insert a USB flash drive or cable into the oven's controller before running your experiment. Select your fixed value or multistep program parameters. Press run and the controller will automatically store the work cycle parameter data on your device at 1-minute intervals.



## Energy saving design

Comprehensive safety performance design to prevent high energy consumption. A new silicone door seal prevents heat loss and prolongs the heating elements' life. Compared with traditional equipment, BEING ovens are designed and engineered to **minimize heat loss by 20%, and thermal power is reduced by 25%**.



## Temperature test hole

An Ø5mm OD external temperature probe can be inserted into the drying chamber to validate temperature settings to the actual chamber temperature.



# Oven Features



## Stainless steel inner liner

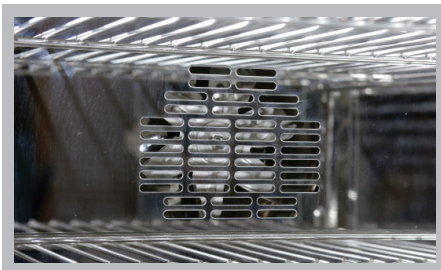
Mirror-polished 304 stainless steel lines the BOF and BON's chamber to provide excellent corrosion resistance. The large radius coved corners offer easy cleaning and maintenance while providing optimal air circulation.



## Flexible, no tilt shelf design

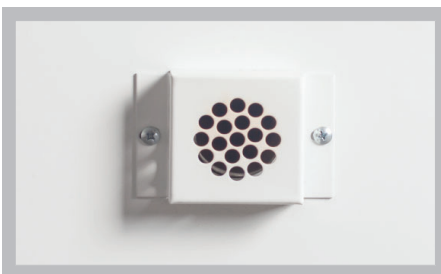
BEING's adjustable wire rack shelf design improves air circulation and maximizes chamber organizational versatility. As you pull out the chrome-plated, 304 stainless steel shelves, BEING's anti-inclination and shelf locking feature lock them in place when reaching halfway, eliminating any shelf tilting and experiment or sample loss, minimizing accidents, and protecting the operator.

Two or three shelves are supplied depending on the model; additional shelving is available if you need more storage.



## Circulating fan (BOF Series)

The forced-air convection fan has a large impeller design to provide good temperature uniformity by moving the air horizontally across the shelves, and a fast recovery rate. The fan power is multi-stage (100%, 75%, 50%) adjustable to give the correct airflow for your application. The fan power adjustment improves the overall equipment efficiency (OEE) and **increases motor service life by up to 30%**.



## Exhaust vent

Hot air naturally rises, so BEING locates an exhaust vent near the top of the oven to promote air circulation and provide chamber temperature uniformity and trouble-free access.



## Adjustable exhaust vent damper (BOF Series)

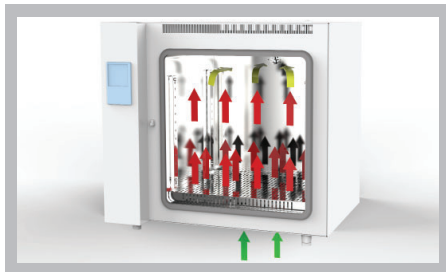
The exhaust vent opening is easily adjustable to modify drying, baking, or curing time by controlling the amount of airflow through the oven; enhance the drying chamber's ventilation efficiency; prevent excessive heat loss, and improve temperature uniformity.

# Oven Features



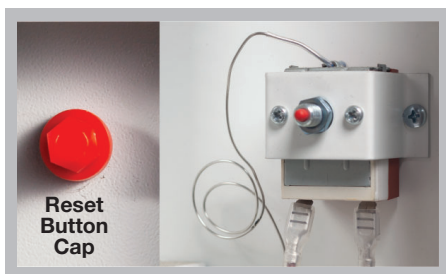
## Chamber air circulation (BOF Series)

Ambient air is drawn in through the incubator's back. Pulled over the heating element and blown to the front of the chamber. Reflects off the door and expelled through the exhaust port.



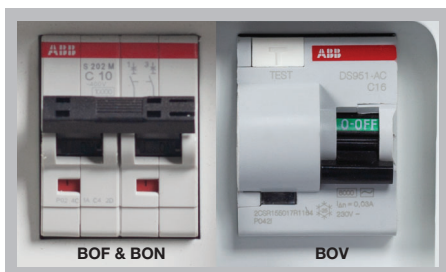
## Chamber air circulation (BON Series)

Ambient air enters the chamber through the incubator's bottom. It's heated as it passes over the heating element. The heated air rises and is naturally drawn to and exits the exhaust port in the incubator's back.



## Preventing damage from overheating (BOF, BON & BOV)

All ovens have dual overheating protection to prevent specimen and equipment damage. The controller's over-temperature protection is adjustable. It shuts down the heating element and fires an alarm until the temperature drops below the set point if the oven exceeds the set temperature and the alarm setting. The independent overheating switch is fixed to a specific temperature and is equipped with a manual reset. If the controller malfunctions, the switch cuts off the unit's power until the user presses the reset button.



## Robust overcurrent and ground-fault protection

Laboratories need their electronic equipment to run precisely; otherwise, overheating can damage their experiments and equipment, shock the user, or cause a fire. All BEING ovens are equipped with high-quality circuit breakers to protect against overcurrent, overloads, short circuits, and ground faults (BOV series) while meeting international electrical standards.

# Forced-air Convection Drying Oven

Model	BOF-30T	BOF-50T	BOF-120T	BOF-200T	BOF-400T
Chamber Volume (ft <sup>3</sup> / L)	1.05 / 30	1.8 / 51	4.2 / 121	7.5 / 211	14.1 / 400
Temperature Range	Ambient + 18°F - 572°F / Ambient + 10°C - 300°C				
Display Resolution	0.1				
Uniformity (@100°C)	±1.5	±2.5	±3.0	±3.0	±3.5
Temperature Stability	±0.5 (@100°C)				
Time to reach 100°C	30 min		40 min		
Shelves (Std. / Max.)	2 / 5	2 / 9	3 / 12	3 / 16	3 / 16
Shelves Loading (lb / Kg)	44.1 / 20				
Net Weight (lb / Kg)	94.8 / 43	112.4 / 51	183.0 / 83	246.9 / 112	463.0 / 210
Timer (hh:mm)	00:01 – 99:59				
Internal Dimension (W×H×D) (in / mm)	12.6 × 12.6 × 11.6 320 × 320 × 295	15.8 × 16.3 × 12.2 400 × 415 × 310	20.5 × 20.9 × 17.3 520 × 530 × 440	25.6 × 25.6 × 19.6 650 × 650 × 500	39.3 × 31.4 × 19.6 1000 × 800 × 500
External Dimension (W×H×D) (in / mm)	20.1 × 21.3 × 21.7 510 × 540 × 550	27.2 × 25.2 × 22.1 690 × 640 × 560	31.9 × 29.7 × 27.0 810 × 755 × 685	37.0 × 34.4 × 29.5 940 × 875 × 750	50.6 × 41.7 × 29.6 1285 × 1060 × 750
Electrical Requirement	120V/60Hz	120V/60Hz	120V/60Hz	240V/60Hz/1Ø	240V/60Hz/1Ø
Electrical Plug Type	NEMA 5-15	NEMA 5-15	NEMA 5-20	NEMA 6-15	NEMA 6-20
Power Consumption	900W	1100W	2050W	2500W	3200W
Catalog number	BO212030U	BO212050U	BO212120U	BO212200C	BO212400C
Stackable	-	•	•	-	-
Shelf Part Number	P19267	P19193	P19194	P19248	



# Natural Convection Drying Oven

Model	BON-30T	BON-50T	BON-115T	BON-200T
Chamber Volume (ft <sup>3</sup> / L)	1.1 / 30	1.8 / 50	4.1 / 115	7.5 / 211
Temperature Range	Ambient + 18°F - 572°F / Ambient + 10°C - 300°C			
Display Resolution	0.1			
Uniformity (@100°C)	±3.0			
Temperature Stability	±0.5 (@100°C)			
Time to reach 100°C	40 min			
Shelves (Std. / Max.)	2 / 5	2 / 6	2 / 10	2 / 16
Shelves loading (lb / Kg)	44.1 / 20			
Net Weight (lb / Kg)	94.8 / 43	99.2 / 45	163.1 / 74	227.1 / 103
Timer (hh:mm)	00:01 – 99:59			
Internal Dimension (W×H×D) (in / mm)	12.6 × 12.6 × 11.8 320 × 320 × 300	15.8 × 14.9 × 13.0 400 × 380 × 330 mm	20.5 × 19.4 × 17.7 520 × 495 × 450	25.6 × 25.6 × 19.6 650 × 650 × 500
External Dimension (W×H×D) (in / mm)	24.0 × 22.8 × 20.5 610 × 580 × 520	27.2 × 25.2 × 18.4 690 × 640 × 468	31.9 × 29.7 × 23.2 810 × 755 × 590	37.0 × 35.8 × 25.9 940 × 910 × 658
Electrical Requirement	120V/60Hz	120V/60Hz	120V/60Hz	240V/60Hz/1Ø
Electrical Plug Type	NEMA 5-15	NEMA 5-15	NEMA 5-20	NEMA 6-15
Power Consumption	1200W	1600W	1800W	2250W
Catalog Number	BO211030U	BO211050U	BO211120U	BO211200C
Stackable	-	•	•	-
Shelf Part Number	P19263	P19193	P19194	P19248

# BOV Vacuum Ovens



## Our vacuum ovens are the 'Smart Choice' for vacuum drying.

With 5 different models, BEING offers one of the largest selections of laboratory vacuum ovens on the market. They are ideal for fast, gentle, and safe baking, curing, drying, embedding, extracting, sterilizing, or lifecycle testing various non-flammable, heat-sensitive, easy-decomposing, highly-oxidizable materials and products in a laboratory vacuum environment. These conditions lower the sample boiling point and drying temperature leading to energy conservation and low environmental pollution. They are widely used in chemical, electronics, food, pharmaceutical, plastics processing, and many other industries.

All of our ovens are energy efficient, have excellent temperature regulation capabilities, and come with a host of features that provide safe and easy operation — and are economically priced. They're all designed, manufactured, and tested to the DIN 12880-2007 standard, providing a long service life.

This combination of selection, specifications, features, quality, and value makes BEING vacuum ovens the smart choice.



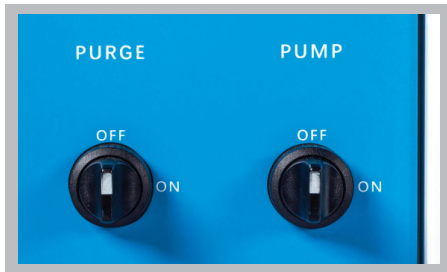
Controller & Safety Feature		Vacuum Oven
Controller	Automatic Power on/off	√
	PID automatic control	√
	Data collection	USB
	Programmable functions	√
	Fixed-value programs	√
	Multi-step programs	√
	Program cycling	√
	Timed & Untimed	√
	Fan speed - Adjustable	√
RUN delay	√	
Port	Vacuum evacuation	√
	Air inlet	√
Safety	Over-temperature protection	√
	Temperature limit protection	√
	Over-current protection	√
	Power off memory	√
	Anti-scalding protection	√

# Oven Features



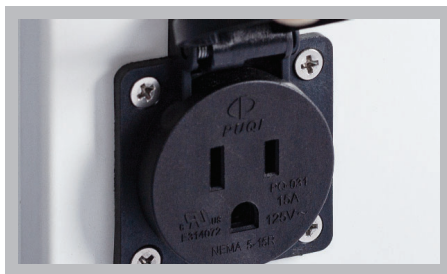
## Professional LCD Controller

The intelligent controller has a bright, easy-to-understand LCD that shows the oven's parameters on a single screen, and the pushbuttons allow quick temperature and time settings. It simplifies complicated testing procedures by creating up to 7 multistep programs with 9 steps each. Time can be programmed from 1 minute to 99 hours 59 minutes.



## Intelligent Solenoid Valve

For convenience, labor-saving, and safer operation, BEING has adopted the use of solenoid valves to control chamber vacuum exhaust and the introduction of inert gases into the chamber for purging. For joint control of the solenoid valve and vacuum pump, we have provided on specialty power supply outlet. See the description below.



## Special Power Supply for Vacuum Pump (BOV-20 & BOV-50)

The special power supply outlet links the vacuum pump and solenoid valve control. The vacuum pump starts and stops automatically when the solenoid valve is opened and closed. This linkage simply and conveniently provides safe and reliable operation and eliminates the potential for any misoperation.



## Large Observation Window with LED Light

You can regularly monitor the specimens at a glance through the double-pane viewing window. This window combines a Plexiglass® outer pane with a tempered, ballistic, double-layer glass inner pane to provide strong pressure resistance and is safe and reliable. It also offers a large viewing angle. The standard LED light enhances sample viewing.

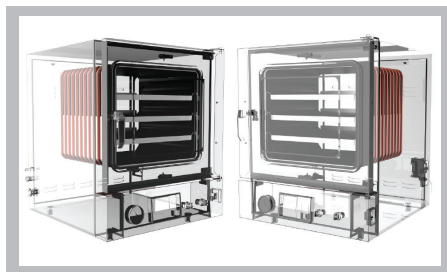
Plexiglass® is a registered trademark of Röhm GmbH.

# Oven Features



## Stainless Steel Inner Liner

The chamber is made of a sandblasted, corrosion-resisted, 304 stainless steel chamber liner providing durability and easy cleaning with good heat resistance. The sandblasted, height-adjustable, aluminum shelves with a large contact area and high thermal conductivity, **40% higher heat transfer efficiency than conventional methods.**



## Jacketed Heating Technology (BOV-20, BOV-50 & BOV-90)

The **BOV-20, BOV-50, and BOV-90** ovens are heated using a 4-sided jacket radiant technology. This combined with a large contact area between the chamber liner and shelves along with the high thermal conductivity of aluminum provides excellent temperature uniformity throughout the oven, which is 40% higher than that of the traditional methods and 50% higher than that of the shell.



## Individual Shelf Heating Technology (BOV-120 & BOV-210)

The individual shelf heating technology used in the BOV-120 and BOV-210 ovens consists of high thermal-conducting aluminum, an integrated heating element, and a temperature sensor connected to a PID controller providing the same temperature to all shelves. Our technology reduces heating-up and processing times with minimal heat loss, provides excellent temperature uniformity and accuracy, and significantly lowers power consumption.



## Inert Gas Intake Valve

The 8mm ID hose barb and labor-saving solenoid valve allow the safe introduction of inert gas or ambient air into the chamber to meet the demands of inert gas drying, sweeping moisture from the chamber, purging caustic gases, or exhausting the chamber's vacuum.

# Vacuum Oven

Model	BOV-20	BOV-50	BOV-90	BOV-120	BOV-210
Chamber Volume (ft <sup>3</sup> / L)	0.9 / 24	1.8 / 53	3.2 / 91	4.4 / 125	7.6 / 216
Heating Type	4-Sided Jacket Radiant Heating			Individual Shelf Heating	
Temperature Range	Ambient + 18°F - 392°F / Ambient + 10°C - 200°C				
Display Resolution	0.1				
Uniformity @100°C	±1 (Shelf)				
Temperature Stability	±0.5				
Max. Degree of Vacuum	133 Pa				
Shelves (Std. / Max.)	2 / 5	3 / 7	3 / 9	3 / 3	3 / 3
Work Chamber Material	Sandblasted 304 Stainless Steel				
Shelf & Rack Material	Sandblasted Aluminum				
Shelf (W x D) (in / mm)	11.4 x 11.0 289 x 280	15.9 x 14.1 404 x 358	17.4 x 17.1 442 x 435	19.5 x 17.7 496 x 450	23.4 x 21.7 595 x 550
Shelf Height Adjust.	Yes			No	
Shelf Separation Height: (in / mm)	-			Top to 1st: 5.5 / 140 Other: 5.1 / 130	Top to 1st: 6.8 / 172 Other: 6.5 / 164
Obs. Window Material	Plexiglas® + Tempered, Ballistic, Double-layer Glass				
Interior Dimension (WxHxD) (in / mm)	11.8 x 10.8 x 11.8 300 x 275 x 300	16.3 x 13.6 x 14.6 415 x 345 x 370	17.7 x 17.7 x 17.7 450 x 450 x 450	19.7 x 19.5 x 19.5 500 x 495 x 495	23.6 x 23.6 x 23.6 600 x 600 x 600
Exterior Dimension (WxHxD) (in / mm)	17.5 x 24.4 x 22.8 445 x 620 x 580	22.8 x 27.7 x 26.5 580 x 705 x 675	24.0 x 31.8 x 31.6 610 x 810 x 805	31.9 x 25.4 x 28.9 810 x 645 x 735	35.6 x 29.1 x 32.9 905 x 740 x 835
Shelf Loading (lb / Kg)	44.1 / 20				
Net Weight (lb / Kg)	132.3 / 60	209.4 / 95	319.7 / 145	357.2 / 162	467.4 / 212
Timer (hh:mm)	00:01 – 99:59				
Inert Gas / Air Inlet	•	•	•	•	•
Inlet Hose Barb (Ømm)	8				
Vacuum Port Type	KF25	KF25	KF25	KF25	KF25
Electrical Requirement	120V/60Hz	120V/60Hz	240V/60Hz	120V/60Hz	120V/60Hz
Electrical Plug Type	NEMA 5-15	NEMA 5-15	NEMA 6-15	NEMA 5-15	NEMA 5-15
Power Consumption	700W	1400W	2000W	1450W	1500W
Elect. Outlet for Pump	•	•	-	-	-
Elect. Outlet Type	NEMA 5-15			-	
Feet / Casters	Feet			Casters, Front Locking	
Catalog Number	BV15020U	BV15050U	BV15090C	BV150120U	BV150210U
Shelf Part Number	P19027	P19035	P19037	-	-



# Vacuum Pump Recommendation

Model	BOV-20	BOV-50	BOV-90	BOV-120	BOV-210
Vacuum Pump Type	Dual Stage				
Pump Fitting Type	KF25 Flange				
Degree of Vacuum (w/ ballast / w/o) (Torr)	$4 \times 10^{-3}$ $2 \times 10^{-2}$	$4 \times 10^{-3}$ $2 \times 10^{-2}$	$3 \times 10^{-3}$ $6 \times 10^{-3}$	$3 \times 10^{-3}$ $6 \times 10^{-3}$	$3 \times 10^{-3}$ $6 \times 10^{-3}$
Flow rate (L/sec) <sup>†</sup>	2	2	4	4	6
Evac. Time (Minutes)	1	1	2	3	4

<sup>†</sup>Other dual (two) stage vacuum pumps with lower flow rates may work but will take longer to evacuate the oven's chamber and may not achieve a 133Pa ultimate vacuum.

## BEING V-Series Pump\*

Recommended Model	V-20 or V-40	V-40	V-65	V-65	V-135
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\* V series pumps are diaphragm pumps. Their ultimate vacuum is 8 mbar / 800 Pa / -11.6 PSI. The chamber's evacuation time is longer than listed above. Visit [beinglab-usa.com](http://beinglab-usa.com) for more information.



**BEING's** portfolio of laboratory equipment includes.

### Incubators

BIF Series - Mechanical Convection Incubator  
BIT Series - Natural Convection Incubator  
BIC Series - Cooling Incubator

### Ovens

BOF Series - Forced-air Drying Oven  
BON Series - Natural Convection Drying Oven  
BOV Series - Vacuum Oven

### Shakers

BS Series - Orbital Shaker  
BIS Series - Incubated Shaker

### Stirrers

BMS Series - Square Plate Heated Magnetic Stirrer

### Water Bath

BWB Series - General Purpose Water Bath  
BWB Series - Dual Chamber Water Bath  
BWS Series - Shaking Water Bath  
BPC Series - Heat/Cooling Circulating Bath  
BRC Series - Recirculating Chiller

### Pumps

V Series - Diaphragm Pumps

Learn more at [www.beinglab-usa.com](http://www.beinglab-usa.com)  
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Ovens Brochure 03-2023 V16



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