

# Ventilated Balance Enclosure

Ensuring Stability and Accuracy of Powder Weighing Tasks



## Introduction

The Ventilated Balance Enclosure (VBE) is designed specifically for stability and accuracy while maintaining a high level of operator protection during handling of hazardous airborne powders. With our aerodynamic sash design and arm rest plus a sectionalized baffle, the powders will be well-contained inside the enclosure and discharged through a HEPA filter or directly to the lab exhaust.

## Key Features

- Airflow is directed inwards and towards the exhaust, making it suitable for applications requiring high-level protection against hazardous airborne particles
- Disposal Port is equipped with an O-Ring to provide a sealed trash bag for additional powder containment solution
- Modular design that allows flexibility and full customization
- Filtration system: Can be equipped either with a Filter Module, a Portable Filter Module, or a Blower Module (for added airflow control).
- Sentinel™ microprocessor controller with airflow monitoring

## Optional Control System Package/s

- Add-on RH/Temperature Sensor with LCD

## Filtration Package

- SINGLE Filtration System: Single Bag-in/Bag-out (BIBO) Filter
- DUAL Filtration System: Two (2) BIBO Filters installed on top of each other
  - Efficiency: 99.995% at 0.3 μm
  - Classification: H14
  - Media: Glass Fiber
  - Sealing Method: Gasket

## Warranty

One (1) year warranty (excluding consumables). Consumables include ballasts, LED lamp, and filters. The warranty will cover all other parts including the blower, fan switch, and electrical mainboard. During the period of warranty, any repair, modification, testing, and commissioning performed by any unauthorized party other than the Esco Service Team shall void the warranty of the unit.

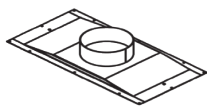
### Guide to Ventilated Balance Enclosure (VBE) Models

VBE-2 A 8-03 S A

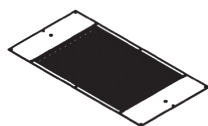
Model	Internal Width (mm)	Size	Configuration	Electrical Code	Enclosure Module	Filter Module	Exhaust Type
VBE	610	2	A - Standard	7 - 100V 50/60Hz	01 - without filter and blower	S - Single Filtration D - Double Filtration	A - Ducted B - Ductless C - Portable Duct
	915	3		8 - 230V 50/60Hz			
	1220	4		9 - 115V 50/60Hz			
	1525	5	B - Tall	02 - with filter 03 - with filter and blower			
	1830	6	C - Tall and Deep				
	2135	7					
	2440	8					

## EXHAUST MODULE

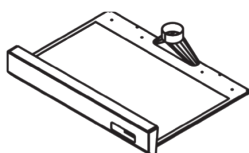
The VBE unit has three (3) configuration options for the exhaust system: DUCTED, DUCTLESS, PORTABLE.



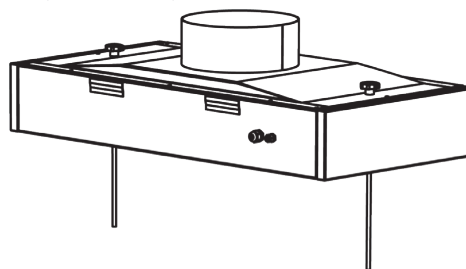
Ducted  
(Standard)



Ductless



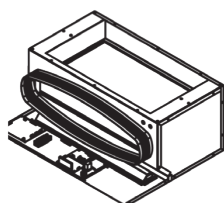
Portable Duct



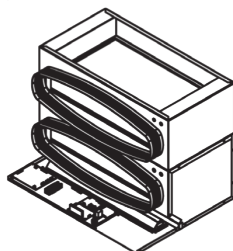
## FILTER MODULE

The Filter Module can be configured to have either a **Single** or a **Double** Filtration System. Each module section quantity may vary from 1 - 3 depending on the width of the enclosure. Additional carbon filter may be supplied for removal of volatile compounds or odor control.

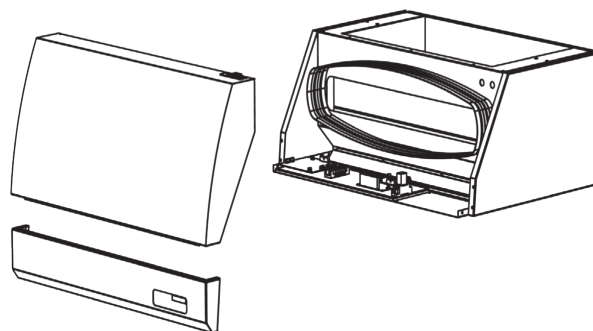
**Optional Carbon Filter housing** (on top): additional 200 mm in external height



Single Filtration Module  
(Standard)



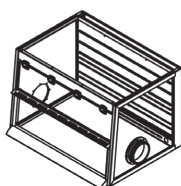
Double Filtration Module



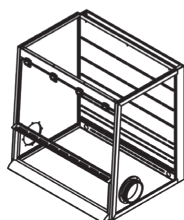
## ENCLOSURE MODULE

The VBE Enclosure covers a wide range of weighing and powder handling options and requirements. We have **Standard (A)**, **Tall (B)**, **Tall & Deep (C)** models.

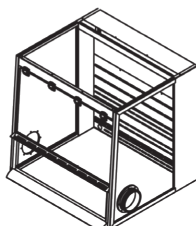
- **Standard (A)** are perfect for small spaces, and by adding portable filter options, the end-user can save a great amount of ceiling space.
- **Tall (B)** units are medium-sized models perfect when using tall equipment during powder weighing.
- **Tall & Deep (C)** units are large models perfect for large scale powder handling, it can also be configured to have Worktop with Drum Access Option.



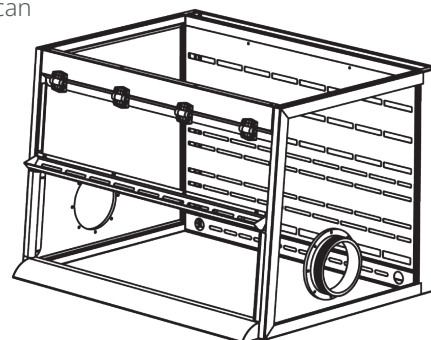
Small Model  
(Standard) (A)



Medium Model  
(Tall) (B)



Large Model  
(Tall & Deep) (C)

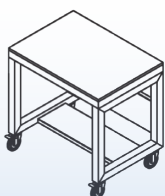


## WORKTOP AND BASE (OPTIONAL)

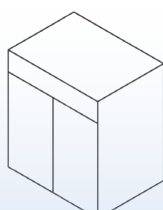
There are three (3) types of Worktop available: **SOLID EPOXY**, **STAINLESS STEEL (SS 316L)**, **GRANITE** (for reduced vibration)

**Worktop Options:** - SS 316L: additional 50 mm in external height  
- Granite/Solid Epoxy: additional 91 mm in external height

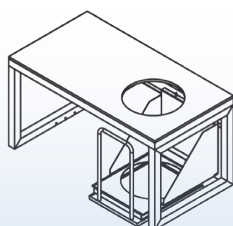
For the Base, **SUPPORT STAND**, **CABINET**, **SUPPORT STAND w/ DRUM ACCESS** can be ordered. In addition to this, **Castor wheel** or **Leveling feet** can be selected as footing options.



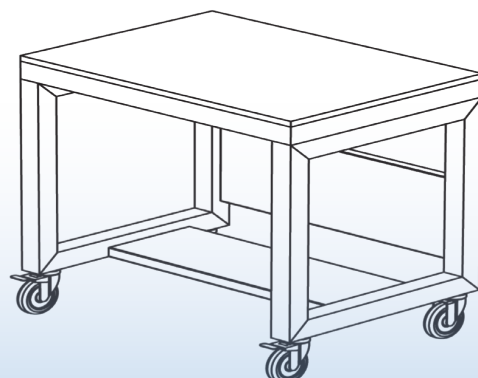
Standard  
Support Stand



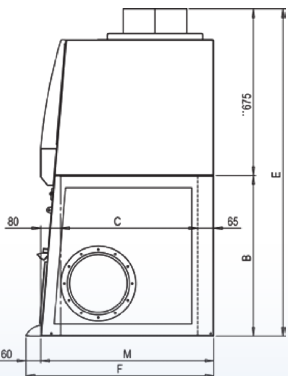
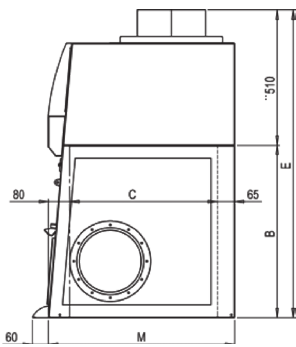
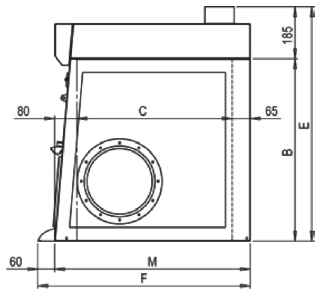
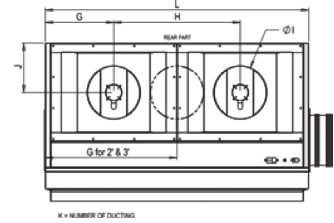
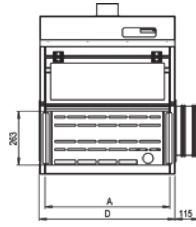
Cabinet Type



Drum Access\*



\*Support stand with drum access  
- Only available for VBE-5C, VBE-6C, VBE-7C and VBE-8C Deep Enclosures (Customized units).



\*\*External Height Reference for Ductless \*02 series\*:  
- Single Filtration: + 385mm  
- Double Filtration: + 670mm  
- With ducting: + 125mm

\*\*External Height Reference for Ductless \*03 series\*:  
- Single Filtration: + 550mm  
- Double Filtration: + 835mm  
- With ducting: + 125mm

SERIES	CONFIG	SIZE	WORK SPACE			EXTERNAL			TOP LAYOUT					BASE SIZE	
			A (mm)	B (mm)	C (mm)	D (mm)	E (mm)	F (mm)	G (mm)	H (mm)	I (inch)	J (mm)	K (pcs)	L (mm)	M (mm)
<b>01 Series</b>	<b>A</b>	2	610	650	555	666*	835	760	330	-	4"	110	1	660	700
		3	915	650	555	971*	835	760	483	-	4"	110	1	965	700
		4	1220	650	555	1276*	835	760	330	610	4"	110	2	1270	700
		5	1525	650	555	1581*	835	760	407	763	4"	110	2	1575	700
		6	1830	650	555	1886*	835	760	483	915	4"	110	2	1880	700
		7	2135	650	555	2191*	835	760	559	1068	4"	110	2	2185	700
		8	2440	650	555	2496*	835	760	432	814	4"	110	3	2490	700
		8	2440	955	555	2496*	1140	760	432	814	4"	110	3	2490	700
	<b>B (TALL)</b>	2	610	955	555	666*	1140	760	330	-	4"	110	1	660	700
		3	915	955	555	971*	1140	760	483	-	4"	110	1	965	700
		4	1220	955	555	1276*	1140	760	330	610	4"	110	2	1270	700
		5	1525	955	555	1581*	1140	760	407	763	4"	110	2	1575	700
		6	1830	955	555	1886*	1140	760	483	915	4"	110	2	1880	700
		7	2135	955	555	2191*	1140	760	559	1068	4"	110	2	2185	700
		8	2440	955	555	2496*	1140	760	432	814	4"	110	3	2490	700
		8	2440	955	555	2496*	1140	910	432	814	4"	110	3	2490	700
	<b>C (TALL &amp; DEEP)</b>	2	610	955	705	666*	1140	910	330	-	4"	110	1	660	850
		3	915	955	705	971*	1140	910	483	-	4"	110	1	965	850
		4	1220	955	705	1276*	1140	910	330	610	4"	110	2	1270	850
		5	1525	955	705	1581*	1140	910	407	763	4"	110	2	1575	850
		6	1830	955	705	1886*	1140	910	483	915	4"	110	2	1880	850
		7	2135	955	705	2191*	1140	910	559	1068	4"	110	2	2185	850
		8	2440	955	705	2496*	1140	910	432	814	4"	110	3	2490	850
		8	2440	955	705	2496*	1140	910	432	814	4"	110	3	2490	850
<b>02 Series</b>	<b>A</b>	2	610	650	555	666*	1160	760	330	-	10"	238	1	660	700
		3	915	650	555	971*	1160	760	483	-	10"	238	1	965	700
		4	1220	650	555	1276*	1160	760	330	610	10"	238	2	1270	700
		5	1525	650	555	1581*	1160	760	407	763	10"	238	2	1575	700
		6	1830	650	555	1886*	1160	760	483	915	10"	238	2	1880	700
		7	2135	650	555	2191*	1160	760	559	1068	10"	238	2	2185	700
		8	2440	650	555	2496*	1160	760	432	814	10"	238	3	2490	700
		8	2440	955	555	2496*	1465	760	330	-	10"	238	1	660	700
	<b>B (TALL)</b>	2	610	955	555	666*	1465	760	330	-	10"	238	1	660	700
		3	915	955	555	971*	1465	760	483	-	10"	238	1	965	700
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		8	2440	955	705	2496*	1465	910	432	814	10"	238	3	2490	850
		8	2440	955	705	2496*	1465	910	432	814	10"	238	3	2490	850
<b>03 Series</b>	<b>A</b>	2	610	650	555	666*	1325	760	330	-	10"	238	1	660	700
		3	915	650	555	971*	1325	760	483	-	10"	238	1	965	700
		4	1220	650	555	1276*	1325	760	330	610	10"	238	2	1270	700
		5	1525	650	555	1581*	1325	760	407	763	10"	238	2	1575	700
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		8	2440	955	705	2496*	1630	910	432	814	10"	238	3	2490	850

\* = with Disposal Port, additional +116mm  
Note: - SS 316L worktop: refer to External Width "L"  
- Granite/Epoxy worktop: refer to External Width "D"

## Volume Flow Rate with standard 263 mm sash opening height

<b>2ft:</b> 173 m <sup>3</sup> /hr (102 cfm)	<b>6ft:</b> 520 m <sup>3</sup> /hr (306 cfm)
<b>3ft:</b> 260 m <sup>3</sup> /hr (153 cfm)	<b>7ft:</b> 606 m <sup>3</sup> /hr (357 cfm)
<b>4ft:</b> 347 m <sup>3</sup> /hr (204 cfm)	<b>8ft:</b> 693 m <sup>3</sup> /hr (408 cfm)
<b>5ft:</b> 433 m <sup>3</sup> /hr (255 cfm)	

### TOP COVER

Designed to be ducted or ductless

### BIBO RING WITH BIBO BAG

Provides hazard-free filter change procedure

### SENTINEL MICROPROCESSOR

Provides control, visual monitoring, and alarm system

**SASH SWEEP** – Incoming air from this area sweeps airborne particles away from the sash

**SIDE AIRFOILS** – Designed to maximize the inflow of air via side openings

**MAIN STREAM** – The sash opening provides an airflow velocity of 0.3 m/s

**BLOWER** – With low level noise

**HEPA FILTER** – Provides high-level filtration

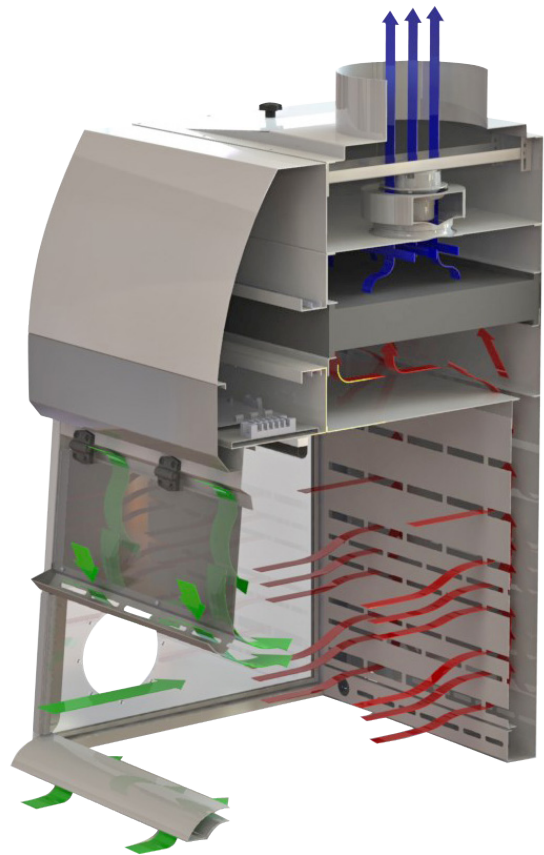
**BAFFLE** – Tested to provide optimized airflow inside the enclosure

**SASH HANDLE** – Prevents operator blockage during operation and ensures inflow of air from the top of the sash towards the internal work zone

**ARM REST** – Provides air from the bottom of the sash into the enclosure; as well as base sweep

## COMFORTABLE ERGONOMIC DESIGN

- The 5° angled front frame improves workspace view
- Lightweight sash and properly positioned hinge for easy access inside the equipment
- Instant start-up LED lamp
- The arm rest is raised above the work zone to improve comfort and to ensure the user's arm is not blocking the airflow
- Optimized side panels for proper lighting inside the work zone



- Filtered air
- Room air / Inflow air
- Unfiltered / Potentially contaminated air

## CABINET CONSTRUCTION

- Constructed with Isocide™ powder-coated electrogalvanized steel with antimicrobial property
- Cabinet is shipped fully assembled for ease of installation and operation
- Easy to clean baffle due to the pivoted design

## ELECTRICAL SAFETY AND CERTIFICATION

- All components meet or exceed applicable safety requirements
- Each cabinet is individually tested at the factory for electrical safety
- Documentation specific to each cabinet serial number is maintained on file

**ESCO**  
HEALTHCARE



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