VENTED BALANCE ENCLOSURE

Model

VBE204/214/306/316/408/418/600/610

Instruction Manual

– December 2019 –

- Thank you for purchasing the Vented Balance Enclosure, VBE204/214/306/316/408/418/600/610, of Yamato Scientific.
- To use this unit properly, read this "Instruction Manual" thoroughly before using the unit. Keep this instruction manual around this unit for reference at any time.

⚠ WARNING:
Carefully read and thoroughly understand the important warning items described in this manual before using this unit.

Contents

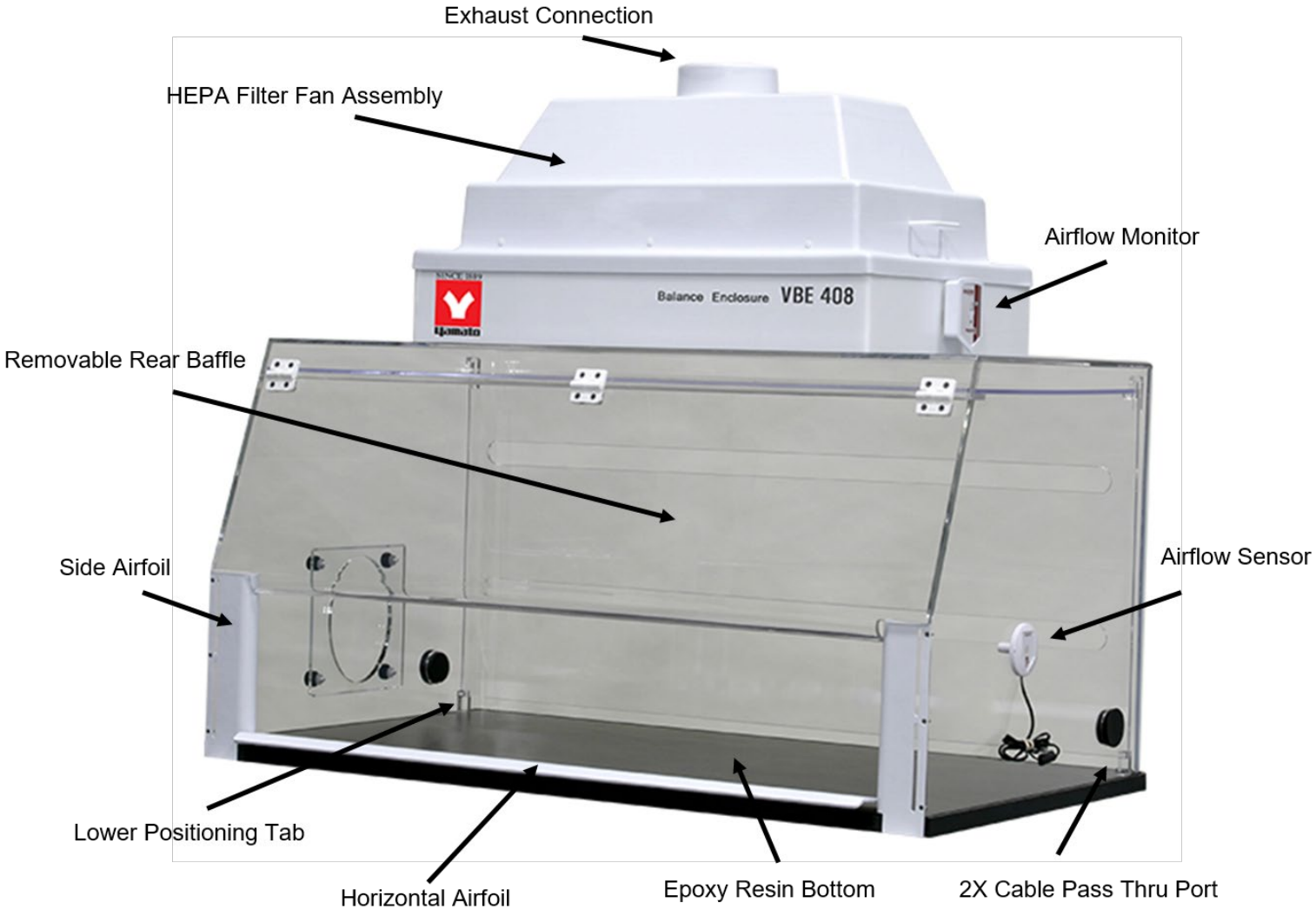
General Information

The Vented Balance Enclosures have been designed and engineered to provide operator safety from airborne particulates during small scale laboratory weighing. The unit features a 25.4mm thick chemical resistant phenolic resin base, top-mounted HEPA filter fan assembly, horizontal and vertical airfoils, removable rear baffle, cable-pass thru ports, airflow alarm, and optional Bag Port chute for waste. The HEPA filter fan assembly includes a backward curved impeller, panel HEPA Filter, speed control, on/off switch, and house exhaust connection.

During normal operation, the backward curved impeller maintains a face velocity into the enclosure which prevent particulates from escaping. The impeller pulls air into the enclosure, through the back baffle and then through the HEPA filter. Any particulates that are generated inside the enclosure are swept away from the operator and into the back baffle. The air flow alarm continually monitors the face velocity and alarms when air flow deviates -20% from target face velocity.

VBE480 Vented Balance Enclosure (front view)

General Information



Set-up Procedures

INITIAL SET-UP

1. Remove packaging from enclosure. Remove power cord, power supply for air flow alarm and supplementary air flow alarm information from inside the enclosure. Position the enclosure in your desired location.

2. Plug main power cord (IEC 60320 -C13) into the input filter module on the back of the HEPA filter fan assembly.

3. Open the front sash and place laboratory balance inside the enclosure. Run power cords and any other balance cables through one of the side pass-thrus. **NOTE:** balance should be positioned 50-60mm from the front horizontal airfoil.

4. Verify that the HEPA filter fan assembly is positioned (seated) over the white filter housing and the side clamps are secure.

5. Plug the air flow alarm power supply cord into the top of the air flow alarm monitor. Verify that the sensor probe cable is also attached to the top of the monitor.

6. Plug the HEPA filter fan assembly power cord into a 110/220V socket.

7. Turn the main power switch on. The blower speed control has an “off” position. If the speed control is in the off position the blower will remain off.

8. Place an anemometer (air flow meter) on the front face of the enclosure. The meter should be 50mm from the front face. Adjust the blower speed control so the face velocity is > 70 FPM (0.355 m/sec).

9. Plug in the air flow alarm into a 110/220V socket.

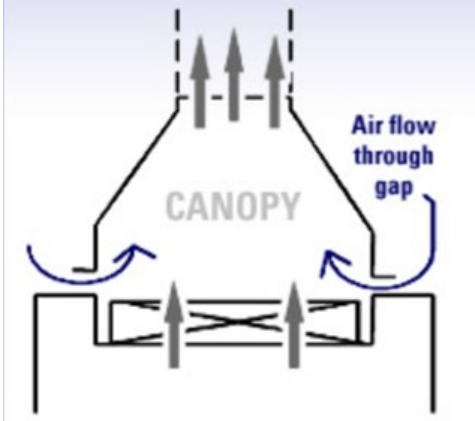
10. Calibrate the air flow alarm.
    Alarm threshold is set at -20% of operational airflow.
    - Set DIP switch one to the off position. NOTE: the DIP switch board is located on the back of the air flow monitor. Set face velocity to 70-80 FPM.
    - Use a paperclip and depress the internal switch (located beneath the sound holes on the monitor) for only three seconds. Audio alarm chirps once.
    - During calibration cycle (about 24 seconds), the red LED will flash once per second.
    - The calibration is complete when the red LED flashes three times fast and the audio alarm chirps once.
    - The LED light turns green during airflow monitoring and flash once every two seconds.

For additional information, please see supplemental Rooster™ User Manual supplied with this balance enclosure.

Exhaust Connection

CANOPY CONNECTION

- Air gap between house exhaust and VBE exhaust
- Exhaust flow is greater than VBE exhaust flow
- Previously referred to as a *thimble connection.*



Filter Change-out

1. It is recommended that proper personal protection equipment (PPE) is utilized during filter change-out.
2. Turn main power off.
3. Remove back baffle. Lift back baffle above lower positioning tabs. Then pull lower portion of the baffle over the lower positioning tabs and remove from the VBE.
4. From inside the work area of the VBE, push the top clear acrylic plenum panel to the top of the VBE to seal off the filter opening. Use a vinyl tape and tape the front and back sides of the top plenum panel to the top of the VBE.
5. Remove the air flow monitor from the side of the filter housing.
6. Lift off the top HEPA filter fan assembly and place on bench top.
7. Place bag (P/N 900-VBE/BAG) over the top of the filter housing and tape to the side of the filter housing.
8. Using the bag, pull the filter out of the filter housing and up into the bag. **NOTE:** this is a two person job.
9. Push the filter into the top of the bag.
10. While holding the filter at the top of the bag, twist the filter and bag 6-7 times to form a tight twist knot between the filter and filter housing.
11. Secure the twist knot with a wire tie or cable tie to seal the filter in the top portion of the bag.
12. Un-tape the bag from the filter housing and discard sealed bag and filter.

General Maintenance Schedule

Weekly: General cleaning (see cleaning procedures).

Annually: Re-calibrate air flow sensor

Cleaning and Sanitizing

Most components consist of cast acrylic, thermoplastics and 304 stainless steel. Like any piece of fine laboratory equipment, care should be taken to avoid dropping, mishandling, and misapplication.

Cleaning
Cleaning thermoplastics is best accomplished with a non-abrasive soap or detergent and water solution. In cases where residues left by the agents is undesirable, special cleaning solvents may be used. Soaps and detergents will not harm plastics, but several common solvents will. Recommended cleaners include Novus™ Plastic Polish #1, Brillianize™ cleaner, and Rez-N-Kleen™

In general, aromatic and chlorinated hydrocarbons will attack most plastic surfaces. This applies to all plastics used in these products.
Examples of these products include, but are not limited to, acetone, ether, gasoline, lacquer thinner, methyl-ethyl-ketone, methylene chloride, and toluene.

Polishes
While the above cleaning solutions have some polishing capabilities, they will not remove scratches from plastic. This can only be done with automotive type waxes or the finer grades of rubbing or polishing compounds. These products should be specifically for acrylic enamels and lacquer base paint.

Scratch Removers
Deep scratches should be first sanded with a fine grit (600 or finer) wet sandpaper. Steel wool (0000 finest grade) is also very helpful. Use the polishing materials (rubbing compounds) mentioned above for the final stage.

Sterilizing
There are several commercially available sterilizing agents and technologies that can be used on the cast acrylic isolator. These include:

- Formaldehyde
- Vaporized Hydrogen Peroxide (VHP)
- Chlorine Dioxide gas
- Clidox™
- Diluted Isopropyl alcohol (70%/30%)

Models & Specifications

Model #	Inside dimensions	Outside dimensions
VBE204 **VBE214**	24.00 w x 23.00 d x 21.50” h 609 w x 584 d x 546mm h	26.00 w x 26.75 d x 41.00” h 660 w x 679 d x 1041mm h
VBE306 **VBE316**	35.25 w x 23.00 d x 21.50” h 895 w x 584 d x 546mm h	36.50 w x 26.75 d x 41.00” h 927 w x 679 d x 1041mm h
VBE408 **VBE418**	47.25 w x 23.00 d x 21.50” h 1200 w x 584 d x 546mm h	48.50 w x 26.75 d x 41.00” h 1232 w x 679 d x 1041mm h
VBE600 **VBE610**	59.25 w x 23.00 d x 21.50” h 1505 w x 584 d x 546mm h	60.50 w x 26.75 d x 41.00” h 1537 w x 679 d x 1041mm h

Environmental:

Operational temperature range: 10-35°C (50-95°F)
Operational humidity (RH): 5% to 90% RH, non-condensing

Power:

VBE Series 204/306/408/600 110 VAC, 50/60 Hz., 1.5 amps
VBE Series 214/316/418/610 220/240 VAC, 50/60 Hz., 1 amp

HEPA Filters:

Aluminum frame with upstream/downstream polyurethane gasket.
100mm thick pleat pack
Rated 99.995% @ .3µ (H14)

Blowers:

High efficiency backward curved impeller. Variable speed controller. IP44 protections as per EN60034-5. Eco-design directive 2009/125/EC

Sound:

<55 dBA @ 80 FPM

European Union (CE)

2014/30/EC (Electromagnetic Capability) 89/686/EEC (Safety) 2014/35/EU (Low Voltage)
EN61326-1:2013
EN55011:2016 Class B
EN61000-3-2:2104
EN61000-3-3:2013
EN61000-4-2:2009
EN61000-4-3:2010
EN61000-4-4:2012

Replacement Parts

ITEM #	DESCRIPTION
MS2027	Vinyl Tape, EL1131Power Cord, EU 1- 16, 2.5M long
EL1622	Speed Control, 230 VAC
SPL0026	Speed Control, 110 VAC
EL1681	Impeller, 230VAC, 530CFM
EL1682	Impeller, 110VAC, 530 CFM
EL1703	Capacitor, 10 uF, for 110 VAC impeller
ELl683	Capacitor, 2uF, for 230 VAC impeller
900-BE/24/HEPA	HEPA Filter, 24” x 18”, Rated: 99.995% @ .3 µ (H14)
900-VBE/36/HEPA	HEPA Filter, 30” x 18” Rated: 99.995% @ .3 µ (H14)
900-VBE/BIBO	Bag In/Bag Out Port 9
900-VBE/BIBO/BAG	Waste Bag for BIBO port
900-VBE/BAG/S	Filter Bag, 24 x 20 x 48”
900-VBE/BAG/L	Filter Bag, 30 x 18 x 48”

Yamato Warranty Policy

Yamato Scientific America warrants, from the date of shipment from Yamato warehouse, for a period of one (1) year. All products, parts and materials shall be free of defects in material and workmanship under normal use consistent with the product instructions. This product warranty does not apply to products purchased from unauthorized resellers/distributors.

Yamato reserves the right to inspect the product under claim before having an obligation to repair or replace the defective unit covered by this warranty. All costs of shipping to Yamato for inspection shall be borne solely by the purchaser. Products repaired or replaced under the terms of the warranty may be refurbished or new product will be provided at the discretion of Yamato.

Warranty Conditions

This warranty does not apply to equipment or parts which fail because of abuse, accident, alteration, misuse, erosion, improper installation, or improper replacement of a repaired item.

Consumables such as gloves, bulbs, or filters are not covered under this warranty.

The buyer assumes all risks for results obtained from these products, whether used alone or in combination with other items. It is expressly understood that we are not responsible and will not be held liable for damage and/or injury caused using our products.

Product Return Policy

If you are not satisfied with your purchase and wish to make a return, contact our customer service to inquire about a Return of Merchandise Authorization Number (RMA). Merchandise returned without an RMA number will not be accepted and will be returned to the sender. Return requests must be made within 15 days of the customer's receipt of the merchandise.

All returns must be unused and in unopened original packaging and include all items and manuals originally shipped.

The purchaser is responsible for the shipping cost of return shipment. Insurance on the return shipment is required. Damage or loss of merchandise during shipping is the responsibility of the sender. Returned shipments that arrive damaged will be returned back to the sender, and credit will not be rendered.

All returned products, parts and materials are subject to a 25% restocking fee. Shipping and handling cost are non-refundable. All retrofitted, customized and special order item sales are final and non-returnable.

In Case of Request for Repair

If the failure occurs, stop the operation, turn OFF the power switch, and unplug the power plug. Please contact the sales agency that this unit was purchased, or Yamato Scientific's sales office.

< Check following items before contact >

- ◆ Model Name of Product
- ◆ Serial Number
- ◆ Purchase Date
- ◆ Issue (as detailed as possible)

Responsibility

Please follow instructions in this document when using this unit. Yamato Scientific has no responsibility for accidents or breakdown of device due to failure to comply. Never conduct what this document forbids as unexpected accidents or breakdown may result.

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Model VBE204/214/306/316/408/418/600/610
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