



## **PART I – GENERAL SPECIFICATIONS**

### **1.0 Vacuum Bedding Removal System – VBRS-9400**

#### **1.01 System Description**

- 1.01.1 The Model VBRS 9400 Bedding Removal series is a vacuum separating valve, ambient pressure discharge type vacuum conveying system. This allows the animal waste bedding and feed to be discharged into any type of waste receptacle.

#### **1.02 System Operation**

- 1.02.1 Soiled animal bedding (material) is vacuumed out of the cages at the Work Station / processing dumpstation, located on the soiled end of the conveyor wash machine. The material is transported via the Transport tube to the separating valve in the Discharge Module. The separating valve removes the material from the vacuum air and discharges the material at ambient pressure into any waste receptacle. A Cyclone Separator removes the bulk of dust and fines from the soiled vacuum air. The dust and fines removed from the soiled vacuum air is ejected from the Cyclone Separator to the compactor and/or dumpster shoot. The soiled vacuum air then returns to the Filter Cabinet, located on the side of the discharge unit. The air is filtered in the Filter Cabinet, first passing through a Coarse Filtration Collection Bag to further remove dust and fines, then through a Rigid Cell Filter. The filtered air is then pulled through the Regenerative Vacuum/Blower and exhausted out side through the Discharge Module, via the Air Exhaust Line.

#### **1.03 System Components Supplied by Others**

- 1.03.1 Waste receptacles as dumpsters and compactors maybe purchased from any supplier of such equipment, or through Roe Bio-Medical Products, Inc. at the customer's option.

#### **1.04 System Warranty**

- 1.04.1 The system shall be fully warranted for parts and service for one (1) year as described in the Sales Agreement.
- 1.04.2 Extended Warrantee maybe purchased at any time within the one-year warrantee period.
- 1.04.3 The specifications in this document are subject to change without notice.



## **PART II - PRODUCT**

### **2.0 Vacuum Bedding Removal System – VBRS-9400**

#### **2.01 Manufacturer**

Roe Bio-Medical Products, LLC  
12 Underwood St.  
Patchogue, NY 11772  
631-236-9155  
www.roebiomed.com

#### **2.02 System Description – VBRS, Vacuum Bedding Removal System**

- 2.02.1 Provide a system designed to effectively handle and discard laboratory animal waste bedding and feed.
- 2.02.2 System components to include vacuum lift tube, Graphic Touch Panel (located in soiled cage processing room), Material separating valve, cyclone separator, dust collector, transportation vacuum blower, waste disposal container (optional) and conveying line network.
- 2.02.3 System shall utilize Vacuum Lift Hose to remove soiled animal bedding from cages.
- 2.02.4 System shall discharge filtered air
- 2.02.5 System shall provide effective odor control with a Rigid Cell Filter and an Ozone generator.
- 2.02.6 System shall permit the use of multiple purpose, standard self-contained compactor or dumpster- (waste receptacle) container. Waste receptacle shall be available for use for disposing other materials without disruption of system.
- 2.02.7 System shall have intrinsically safe and redundant safety features.
- 2.02.8 System shall efficiently utilize space.
- 2.02.9 System shall have level monitor/controls for compactor or dumpster, to assure the amount of waste material is within the capacity of the waste receptacle.
- 2.02.10 System shall signal to the remote indicator/switch panel when the waste receptacle is full.

#### **2.03 Space Requirements**

- 2.03.1 Discharge Module – (NOTE: shares the foot print of the waste receptacle) mounted on a freestanding steel platform above the waste receptacle, may also be ceiling mounted. Space for the waste receptacle is the only required consideration (multiple purpose/user compactor recommended).
- 2.03.2 Graphic Touch Panel Interface and ceiling mounted vacuum lift tube – located in soiled cage processing room have no discernible space requirements. Allows full utilization of cage processing room space.
- 2.03.3 Filter NEMA 4X cabinet - 17"W x 26"D x 48"H, (mounted on the Discharge Module) allow 30" frontal access for servicing/filter change.

#### **2.04 Discharge Module**

- 2.04.1 Description – Houses separating valve discharging waste animal bedding at ambient pressure into any waste receptacle via gravity sealed discharge chute and dust cover plate.
- 2.04.2 Module Dimensions 72" L x 48" H x 30" D



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2.04.3 Construction – welded steel with 2 panel steel access doors. Factory primed, gray painted. Architectural paint colors, if any, must be indicated with purchase and supplied by customer 30 days prior to shipping.

## 2.04.4 Components

- 2.04.4.1 Vacuum Blower, 5.5Hp, high performance regenerative blower, 400 cfm idle, 100 cfm load
- 2.04.4.2 Separating Valve – 2 cu. yd / hr material transfer capacity
- 2.04.4.3 Drive motor for separating valve
- 2.04.4.4 Cyclone Separator with rotary discharge, 80 % system design efficiency.
- 2.04.4.5 Discharge chute – 6” diameter flexible duct with gravity seal dust cover plate to the waste receptacle, located under separating valve, for discharging waste material into any waste receptacle at ambient pressure. No vacuum seal is required.

## 2.05 Platform / Stand

- 2.05.1 Description – Supports discharge module, ozone generator and provides a servicing platform. Located over (straddles or ceiling mounted) waste receptacle.
- 2.05.2 Dimensions – Note: custom made for facility requirements. 72”W x 120” L type. Mounting height 120”.
- 2.05.3 Construction – Stainless Steel type 304 frame with diamond plate deck.

## 2.06 Filter Cabinet

- 2.06.1 Description – Filtration of soiled vacuum air after the separation valve and cyclone separator, and prior to the vacuum blower. All exhausted air is passed through a Rigid Cell Filter with 85% efficiency.
- 2.06.2 Dimensions – 26”D x 16 3/4”W x 48”H
- 2.06.3 Construction – welded steel 304 stainless steel cabinet, with a ball-latched door.
- 2.06.4 Components – Pocket Air Filter (85% efficient) and a Rigid Cell Filter (85% efficient) or interchangeable HEPA filter.

## 2.07 Programmable Logic Controller

- 2.07.1 Description – Fixed I/O of 20 inputs and 16 outputs. Built in 300mA 24 VDC auxiliary power supply for field devices. Thermocouple and LTD temperature input module. Operator Interface LCD display.
- 2.07.2 Memory - 7.5K program memory and 7.3K data memory.

## 2.08 Data Line

- 2.08.1 Description – Category 5e Plenum rated cable.

## 2.09 Graphic Touch Panel Interfaces

- 2.09.1 Description – 6” self-diagnostic color touch panel interface, with Compact Flash storage and 100Base T Ethernet. Multiple control device flexibility, and interactive HMI Software with advanced module support.
- 2.09.2 Dimensions – 6.0”H x 7.4”W x 2.26”D (without NEMA 4X enclosure) 14”H x 12”W x 6”D (with NEMA 4X enclosure.)
- 2.09.3 Weight - 2.24 lbs. (1.02 Kg) without NEMA 4X enclosure.
- 2.09.4 Power Requirements – 120 VAC (at the touch panel location)
- 2.09.5 Construction – Clip mounted into the Control Panel Enclosure



2.09.5.1 For Cage Wash Area - Clip mounting into a stainless steel NEMA 4X enclosure.

## **2.10 Material Transport / Conveying Lines**

- 2.10.1 Description – 2 to 3 inch OD 304 stainless steel conveying line running from the ceiling ports in the soiled cage processing room to the discharge module.
- 2.10.2 Completely seal piping to maintain the required vacuum through out the system.
- 2.10.3 Install elbows with 6.5-22 inch radii to permit a smooth flow of waste bedding, feed and dust.
- 2.10.4 Connections – Sanitary quick couple flanges and stainless steel clamps at ceiling mounts and separating valve.
- 2.10.5 Support hangers 4'– 8' interval pipe hangers recommended per code.

## **2.11 Ceiling Mount Plate / Line Connectors**

- 2.11.1 Description – Provides a stationary sanitary connection point with quick clamps, connecting the vacuum lift tube and the material transport / conveying line in the soiled cage processing room. Mounts directly to the ceiling or suspended from beams at a height sufficient to provide unrestricted movement of caging and personnel underneath and to permit access of sanitary quick clamps.
- 2.11.2 Connections – Sanitary stainless steel quick clamps at ceiling mounts.
- 2.11.3 Material – 8" square type 304 plate with a standard sanitary flange.

## **2.12 Vacuum lift tube (When Applicable)**

- 2.12.1 Description – A flexible vacuum hose with standard sanitary flange end for connecting to the ceiling mount plate and interchangeable nozzles for vacuuming cages.
- 2.12.2 Dimensions – 1 ½" or 2" diameter by 8', 10' or 12' long hose.
- 2.12.3 Material – Super flex wire reinforced PVC hose with collar.

## **2.13 Processing Bedding Dump Station – SCD 6800 (When Applicable)**

- 2.13.1 Description- Down draft lab animal waste processing, milling, fluidizing. Synchronically meters lab animal waste into the conveying line. Communicates with wash equipment and vacuum system.
- 2.13.2 Dimensions – 54" wide x 24" deep x 38" high (adjustable). Other dimensions available.
- 2.13.3 Material – type 304 stainless steel.
- 2.13.4 Controls – Graphic touch panel interface.
- 2.13.5 Options :
  - 2.13.5.1 HEPA filter up draft with blower\* (total of 72" overall height)
  - 2.13.5.2 8 foot retractable hose with trigger control sprat head.
  - 2.13.5.3 Castors, locking stainless steel assemblies with 4" polypropylene wheel and delrin bearings.
  - 2.13.5.4 Docking latch aligns and latches / de-latches dumpstation onto conveyor type wash equipment.
  - 2.13.5.5 Vacuum wand and hose with switching valve assembly.
- 2.13.6 Utility requirements:
  - 2.13.6.1 Electric – 1/60/120V, 20 Amp
  - 2.13.6.2 Air – ½" NPT @ 80 psi

## **2.14 Chase (When Applicable)**



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- 2.14.1 Description – Connects the Discharge module to the out side wall penetrations. Houses the Material Transport Line, soiled and clean vacuum airlines and signal cable.
- 2.14.2 Construction – 12” by 6” Sheet metal chase with top cover. Insulated
- 2.14.3 Support – 8’ support intervals recommended. Uni-strut with beam clamps, typical.
- 2.14.4 Paint Ready – Factory primed, gray painted. Architectural paint colors, if any, must be indicated with purchase and supplied by customer 30 days prior to shipping.

## **2.15 Utility Requirements**

### **2.15.1 Electrical**

- 2.15.1.1 - 230/460v, 3 phase, 5 wire or 230/460v, 3 phase, 30/15 amp. with 120v, single phase, 20 amp. Location – Within four feet of, or mounted on a discharge module.
- 2.15.1.2 - 120v, 10 AMP, Single Phase, GFI outlet, in the Soiled Cage Wash area for the Graphic Touch Panel Interface, either directly to the unit or within 4 feet of the unit.

## **2.16 Components supplied by others**

- 2.16.1 **WASTE RECEPTICAL – provided by others**
- 2.16.2 Description –
- 2.16.3 Construction –



## **PART III – EXECUTION**

### **3.01 Installation and Start Up**

- 3.01.1 Installation – manufacturer shall install the system.
- 3.01.2 Installation Costs – The costs of the installation shall be included in the sale of the system by the manufacture under the sales Agreement, specifically described in “Attachment B” entitled “Installation”.
- 3.01.3 Start up – The manufacturer shall start up and prove out the system using the animal bedding materials supplied by the end user for a period of one (1) day.

### **3.02 Delivery**

- 3.02.1 Shipping – The system shall be shipped FOB delivered to the job site.
- 3.02.2 Delivery date shall be 120-150 days after receipt of Purchase Order and deposit payment, unless otherwise agreed to in writing by both the customer and the manufacture. Delivery date will be set with the intent of immediate installation upon delivery.
- 3.02.3 Uncrating – The system shall be uncrated by the manufacture at the time of installation.
- 3.02.4 Storage – The customer shall be responsible for storage costs, if any.

### **3.03 Training**

- 3.03.1 A factory representative shall provide an on-site training course of 1 day.

### **3.04 Documentation**

- 3.04.1 The manufacturer shall furnish two (2) O & M manuals and one (1) set of as-built electronic drawings pertaining to the system.