



BIO CART 13 HEPA-UVC PREMIUM

USER GUIDE





BIO CART 13 HEPA-UVC PREMIUM



Division of D.P.L. Enterprises Inc.

3868 East Post Road, Las Vegas, Nevada 89120, (702) 454-5515, FAX (702) 454-5225

Website: www.air-care.com; E-mail: cs@Air-Care.com

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INTRODUCTION

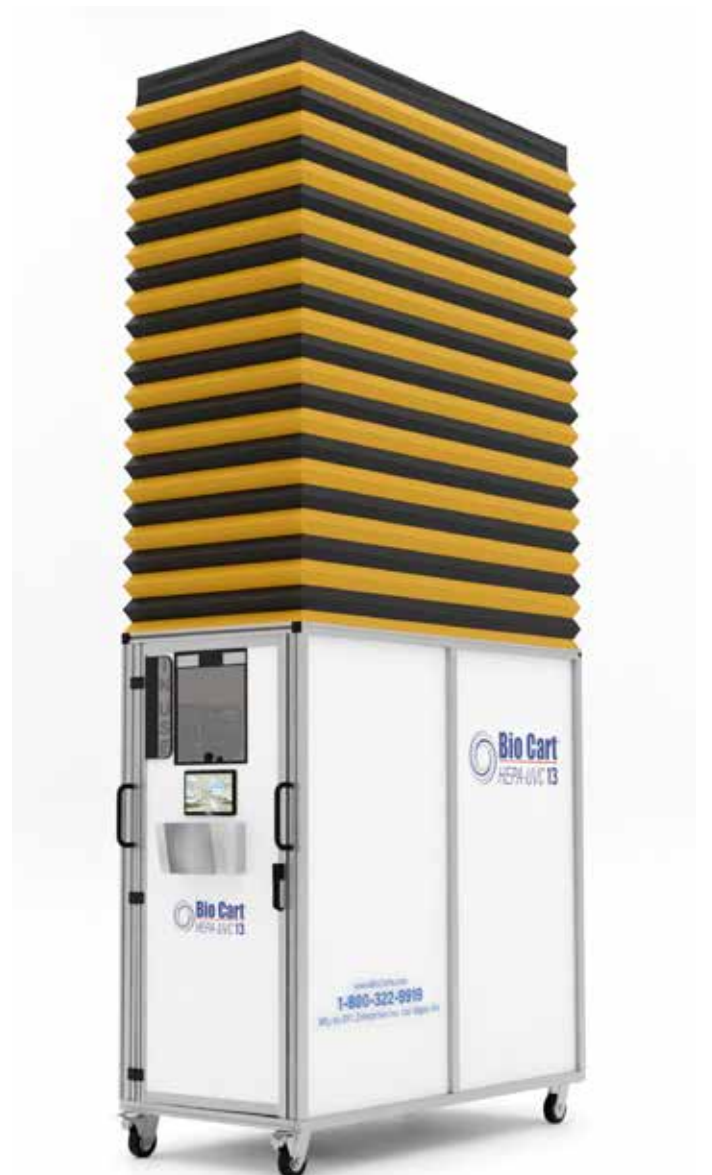
During construction, maintenance or when inspections are performed in an area that may contain dust, dirt or biological contaminants, there is always the possibility for those contaminants to be released into the room and picked up by the air currents and spread to additional areas.

When major remodeling or repairs are performed it has been standard practice to install a long term, but temporary containment area with spring poles and plastic film using HEPA air scrubbers to filter out the contaminants and exhaust clean air out of the contained area and provide a **NEGATIVE PRESSURE** in the work area to prevent particulates from escaping from any tiny holes or seams in the structure.

Installing this type of containment creates dust hazard during the installation and removal so the area immediately around it must be evacuated of sensitive individuals during that time.

If the work to be done is a simple re-lamping or running a new IT cable, the time to evacuate, build and remove a temporary containment room is much greater than the time to do the actual work. A more efficient way to provide HEPA containment with Negative Pressure for normal work, without evacuation, was needed, therefore the Portable Containment Cart was developed. It is rolled into place, plugged in to start the HEPA Air Scrubber, which will immediately start filtering out dust and exhausting clean air while the top is raised up to seal off the area of the ceiling where the work is to be done in a very short period. The area is protected while the work is performed, the ceiling tiles or light diffusers replaced. The Top of the cart is lowered just enough to clear the ceiling while it is transported to the next work area. If the next work area is in another room or on a different floor, the top can be fully retracted to move the cart through doors or into an elevator to reach that area.

The Bio Cart HEPA-UVC 13 has added features that make this process even more efficient and safe. The top is raised and lowered with one finger on the Power Lift switch. The HEPA chamber for the Bio Cart HEPA-UVC 13 has UVGI lights to neutralize captured biological contaminants, the clean air is exhausted out the bottom in a diffused pattern to prevent disturbing paperwork on tables and desks in the area, the ladder lowers inside the cart so it can be moved without making a second trip to move a step ladder that may be too tall to remain inside the Bio Cart while moved.



UNPACKING

DO NOT ACCEPT A PALLET THAT SHOWS VISIBLE DAMAGE.

- Report damage to driver, Delivery Company
 - Take photos of the damage
 - Refuse the shipment
 - Contact Air-Care at 800.322.9919 or cs@air-care.com.

Remove packing from exterior of Bio Cart HEPA-UVC 13 and pallet. Do not dispose of packing until you have completed your inspection of the Bio Cart HEPA-UVC 13 inside and out. If the Bio Cart HEPA-UVC 13 needs to be returned due to damage, you will need the packaging to repack.

Carefully lift the Bio Cart from Pallet with an appropriate Fork Lift and place on a smooth, level surface. Ensure brakes are set on wheels before leaving the Bio Cart unattended.

Once unpacked, inspect the interior of the Bio Cart for any signs of damage. This includes the box of accessories behind the ladder. Please take photographs of any damage and report it to Air Care and your Freight Company immediately.

Control Panel



1. AC power with (2) USB connectors
2. Bellows up and down
3. Air scrubber speed control

4. Power on light
5. Blower operating light
6. Replace HEPA filter light

VIDEO CAMERA/MONITOR

A front facing camera (Image 1) is mounted on the exterior, so the operator can see what is directly in the path of the Bio Cart HEPA-UVC 13 as it navigated down hallways. The HD image is displayed on the 10" display (Image 2) on the door.

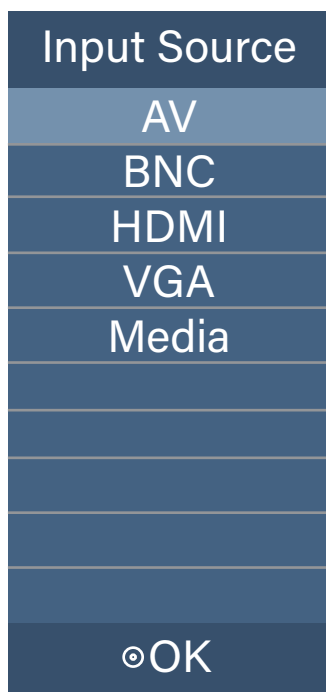
The camera will be most effective while the cart is being moved within the building. The on board battery will provide 2 hours of operation if fully charged. The "Battery Switch" near the control Panel must be ON to start the camera and display. The battery switch must be "OFF" to charge the battery, and when the Bio Cart is not plugged in.



(Image 1)



(Image 2)



(Image 3)

1. The Bio Cart battery switch must be on for the monitor to work. If the battery is not charged the Bio Cart must be plugged in.

2. If the monitor does not come on automatically, press the POWER BUTTON (A) on the remote.

3. If no image displays (blue screen), press the SOURCE (B) button.

4. A menu will appear (Img A). Press the down/up arrows (C) on the remote to move highlighted input to "AV" if not already selected. (Image 3)

5. You should now see the camera view.

6. Press OK to save the "AV" setting.

Note: None of the other controls on the remote are needed to operate the Bio Cart camera or screen.

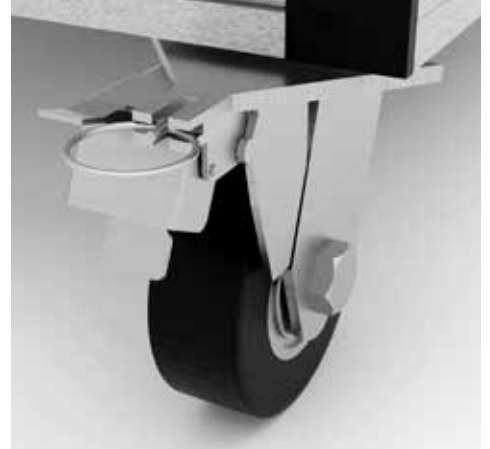


TESTING

The Bio Cart HEPA-UVC 13 has mechanical, electronic, camera and display functions to test. If any of these tests fail, contact Air-Care Immediately. 800-322-9919 or cs@air-care.com. The Bio Cart HEPA-UVC 13 may require the ladder to be removed to perform some of the tests.

Turn off all switches in the Bio Cart HEPA-UVC 13 before connecting to AC power.

1. Test the brakes on the 2 FRONT (Image 4) wheels with brakes to ensure they will secure the cart in working position.
2. Test the swivel locks on the 2 BACK caster wheels . Lock the swivel and engage a wheel brake at the same time.



(Image 4)

3. 2 switches on the UVC lamps power boxes are below the Pre-filter . (Image 5)

4. The "IN USE" light Switch on the door is on when the Bio Cart battery switch is on whether the unit is plugged in or unplugged.



(Image 5)

5. Inspect the power plug for damage (Image 6)
6. Pull the power cord out several feet, give it some slack, and it should lock in place.
7. Pull the cord tight again and allow it to be pulled in and rolled up into the cart.



(Image 6)

Testing Continued Page 8

TESTING

8. Step inside the Bio Cart HEPA-UVC 13 to test the electrical system.

If the AC red LED (Image 7) does not light up when the power cord is in a live, properly grounded outlet, check the 2 door locks on the back exterior door (Image 8).

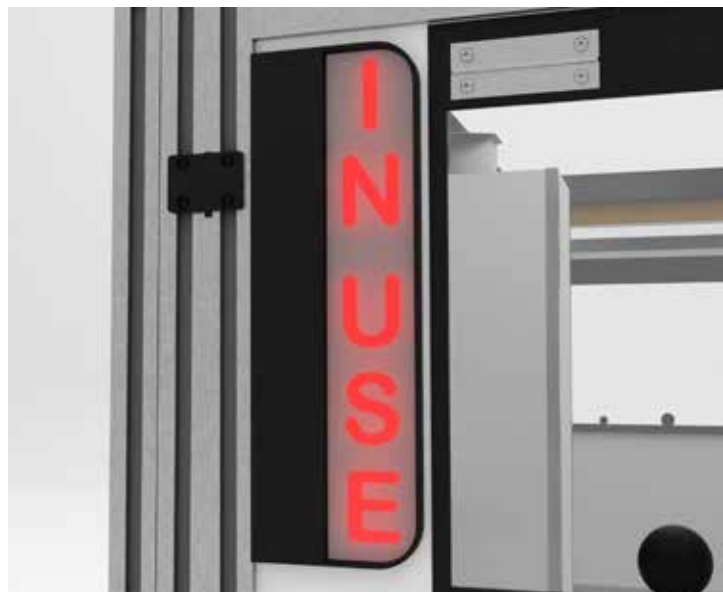


(Image 7)



(Image 8)

9. The "IN USE" light (Image 9) should be on whenever the power cord is in a wall connector, or the battery switch is on.



(Image 9)

10. Turn the "Speed Control" switch (Image 10) clockwise until it clicks and set it to "HIGH".

The Air Scrubber fan will turn on. If it does not, leave the switch on until you test the UVC interlock switch. When the UVC lamps are ON, the Blower should run, but when the HEPA replacement door on the outside is open, the UVC lamps and the blower will not turn on.



(Image 10)

TESTING

11. The last control to be tested on the panel is the power lift .

The Bio Cart HEPA-UVC 13 has a maximum height of over 13 feet, so you may not be able to fully raise it at this time.

Press the UP (TOP) of the Rocker switch (Image 11) on the control panel. The top of the Bio Cart HEPA-UVC 13 will begin to rise (Image 12) with the yellow and black bellows. RELEASE the switch and it will stop. When raising it to the ceiling, release the button just as the foam touches the ceiling to prevent any damage to the ceiling or the cart.

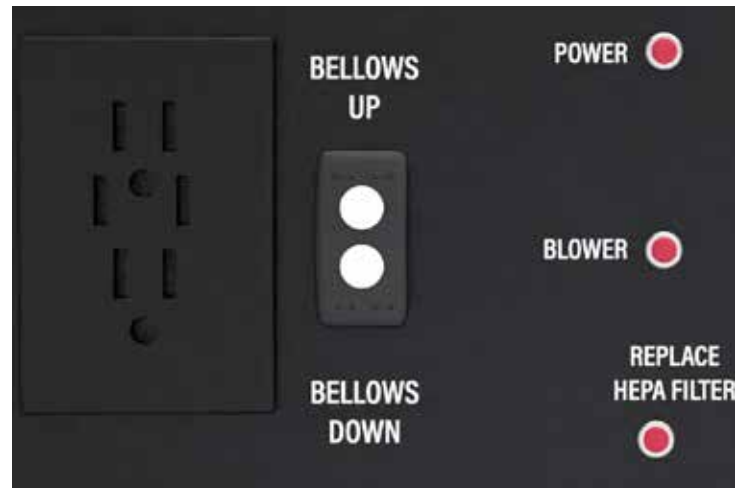
There is a torque limiter that stops the bellows if the UP/DOWN switch is not released before the bellows hit the top or bottom.

Press the DOWN (Bottom) of the rocker switch and the top will lower back to the transporting position. Release the button when the bellows are fully down.

12. You can remove the telescoping ladder by loosening the straps at the top & bottom. (Image 13)



(Image 13)



(Image 11)



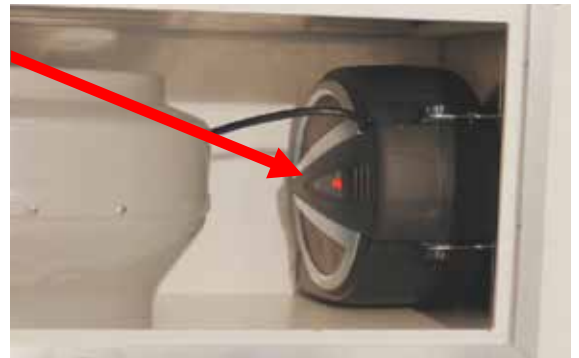
(Image 12)

TESTING

13. Next, remove the Pre-Filter (Image 14) in the Air scrubber section and note the location of the Circuit Breaker Button (Image 15) on the side of the Retractable Power Cord on the Right side of the Air Scrubber.



(Image 14)



(Image 15)

If the UVC bulbs are not on, turn on both UVC/UVGI switches on the black power units (Image 16) above the clear plastic shield.

If they are still not on, check that the door for the HEPA Filter is shut on the outside of the cart. (Not shown)



(Image 16)



WARNING!!

Unshielded UVC light can cause eye damage, so there is an interlock switch on the external HEPA door that will turn them off when changing the HEPA filter, even if the operator forgets to turn them off. Go to the outside of the cart and open the HEPA access door at the bottom of the rear panel by turning the latches and lowering it to be sure the UVC lights and the Air Scrubber Fan turn off as it is opened.

OPERATION

The Bio Cart HEPA-UVC 13 is the simplest portable containment cart to operate, and offers more features than other carts.

The Bio Cart HEPA-UVC 13 should first be moved to the area to be contained. Position under a ceiling tile or light fixture so that all 4 sides of the Bio Cart HEPA- UVC 13 are outside that area. The wheel brakes should be set.

Pull out enough power cord to reach a nearby power outlet. Always use a grounded outlet. Turn the battery switch to "OFF to charge the internal battery while The Bio Cart is plugged into the wall.

Step inside the door, close it and press the UP button (Image 17) on the control panel located near the door on the left wall. When the foam seal touches the ceiling, release the button. If the top is raised too far, the ceiling may be damaged.

The scrubber/blower power switch is built into the speed control on the control panel (Image 18). Turn it Clockwise to turn it ON. It starts in high, for lower speeds turn the knob clockwise.

The UVC/UVGI lamps should light with a blue glow through the narrow view window near the floor area. If they are not on, the switches are located on the UVC power units near the power receptacle that is above the sight window.

The Interior light is left on. A head mounted work light and a 120-volt halogen work light are included to illuminate the working area above the ceiling.

There is a power outlet on the control panel, (Image 19) and a second power outlet near the UVC Lights (Image 20). 2 power outlets include USB connectors for convenient charging of smart devices **on control panel only**.

Before opening the ceiling, put on your PPE (safety glasses, dust mask, disposable clothing, etc.).



(Image 17)



(Image 18)



(Image 19)



(Image 20)

OPERATION

Ladder Set-Up

Your Bio Cart comes with a telescoping extension ladder. During shipping the ladder is secured to the bottom of the unit (Image 21).

To use the ladder, unstrap the ladder and slowly extend the ladder to your desired length (the ladder can fully extend up to 15 feet). Also unstrap the cross-bar support strap (Image 22).

Position the ladder so it is placed on the non-skid pad at the bottom of the unit (Image 23), and rest the upper part on the cross-bar at the top.

The bottom of the ladder is secured using bottom strap (Image 24).

The top strap should extend across the ladder and secured firmly in place with the top strap (Image 25).



(Image 21)



(Image 22)



(Image 23)



(Image 24)



(Image 25)

OPERATION

Climb the ladder and move the ceiling tile out of the way and store it to the side of the opening. For re-lamping light fixtures, you will not normally need to remove any ceiling tiles.

If power tools are required, plug them in to the power outlet located on the control panel.

KEEP THE AIR SCRUBBER RUNNING DURING THE ENTIRE PROJECT AND EVEN WHEN YOU EXIT THE Bio CART. This will maintain Negative Pressure in the Bio Cart HEPA-UVC 13L and prevent any airborne particles from escaping into the area around the cart.

Once the job is complete, leave the air scrubber on while the ladder is lowered and secured with the strap. You can then safely lower the bellows.

Remove any protective clothing that may be contaminated with debris and store in a plastic bag inside the cart.

Step outside the Bio Cart HEPA-UVC 13 and close the door securely. It can be locked using the key provided with your Bio Cart HEPA-UVC 13.

If required, install the top cover of the Bio Cart HEPA-UVC 13 and secure with the draw string before it is moved to the next work area. This Top is NOT durable enough for transporting the Bio Cart HEPA-UVC 13 in an open trailer or truck at highway speeds!

Unplug the 40 ft retractable cord and let it wind back up into the Bio Cart.

Unlock the wheel brakes and carefully move the Bio Cart to the next work area. You can utilize the camera feature when moving your Bio Cart.

SAFETY INFORMATION

Air-Care Bio Carts are designed to minimize hazards from dust and debris released from the Ceiling area when work is performed there. The Bio Cart HEPA-UVC 13 has electrical power and components around which common sense and normal safety procedures must be followed to minimize exposure to any possible dangers.

The Electrical Plug should be plugged into a GFI (Ground Fault Interrupter) to shut down power if there is a defective device with improper ground plugged in to the Bio Cart power. Do NOT remove the ground pin on the plug. Always plug the power cord into a grounded electrical outlet.

When the Bio Cart is located in the work area, set the Wheel Brakes and swivel locks before stepping inside the Cart to prevent movement that May cause the technician to lose their balance.

The Ladder MUST be fully secured at the top and bottom supports with the ratchet straps provided prior to the technician stepping on to the Ladder. When moving the Ladder, it must be secured.



The Bio Cart is equipped with 2 UVC/UVGI lamps above the HEPA. To prevent eye damage the Bio Cart has a clear window filter that does not allow UVC light to escape, just the safe, "blue" component of the lamps, which is visible. When changing the HEPA filter, an interlock turns off the UVC/UVGI lamps and the Air Scrubber fan motor. DO NOT BY PASS this interlock and if the window is not in place, turn off the UVC/UVGI lamps with the switch on each box above that window.

Observe all electrical safety procedures when using lights, Power Tools or other electrical devices in the Bio Cart. 120 Volts AC is present in all the outlets. All power wires are enclosed in protective, insulated tracks or coiled cords. If any wire or covering appears to be damaged, it must be repaired immediately.



The top of the Bio Cart is raised and lowered with a powered actuator. As with all mechanical devices, use caution when operating it and keep all materials clear of the moving parts of the actuator.

If you have any questions regarding the safe and reliable operation of the Bio Cart, contact Air-Care, 800-322-9919 or cs@air-care.com.

MAINTENANCE

The single most important maintenance activity for the Bio Cart 13 is keeping them clean. Since the Bio Cart will be used in a variety of environments, the degree of cleaning will vary with each environment.

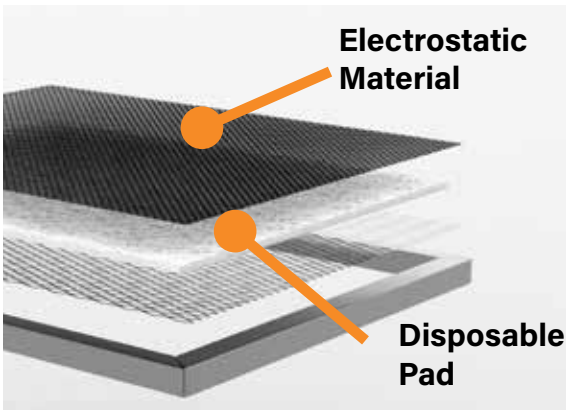
The cleaning protocol for each area that the Bio Cart will be used must be understood prior to transporting it to those areas. In Operating Room environments, the cart must be totally wiped down with the proper sanitizer inside and out and all wheel surfaces. In other areas, lesser measures are required. Consult with the staff in the planned work areas for detailed Infection Control procedures. Contact Air-Care if you have questions about how to meet specific requirements.

Generally, cleaning the inside of the cart after each use is recommended. With the Air Scrubber running, the air in the Bio Cart HEPA-UVC 13 is HEPA filtered. It is recommended that the air scrubber is left running while vacuuming debris off the floor, shelf, ladder and other surfaces.

Wiping down the pleats in the bellows with a damp cloth, inside and out, between all pleated surfaces is recommended. A suitable biocide can also be used.

The wall surfaces should also be wiped down regularly.

Cleaning and replacing the Pre-Filters



There are 2 layers for the standard prefilter in the Bio Cart HEPA-UVC 13 air scrubber unit.

The bottom layer in the filter frame is 1", non-woven, white polyester. The top layer is black, woven, electrostatic polypropylene. These are disposable and should both be replaced when soiled.

UVC/UVGI Lamps Replacement

The UVC/UVGI lamps have a useful life of 10,000 hours. This is just over 12 months of 24/7 illumination. In the Bio Cart, they will not be on continuously, but turning them OFF and ON can sometimes reduce their useful life. Use the observation window in the Bottom of the Air Scrubber section to verify that the bulbs are both operating. Register your Bio Cart and receive reminders to replace the filters and UVC lamps.



To replace the UVC/UVGI Bulbs, unplug both power cords for the UVC/UVGI power boxes, just above the Bulb Viewing window. Remove the 4- screws on the power unit to be re-lamped, and carefully remove the box and the bulb. Unscrew the bulb with built-in

To receive reminders when it is time to change the UVC lights, visit uvlightwarranty.com to register your lights.

Maintenance Continued Page 16

MAINTENANCE

ballast. And dispose of the bulb in the proper manner for other Fluorescent bulbs with mercury. It is best to replace both bulbs at the same time.

Do NOT touch the glass on the new bulb with your hands, oil from your fingers will cause local heating and early failure of the bulb. Use rubber gloves or other means to hold the new bulb, screw it into the socket and be sure it is secure.

Install the power box into the air scrubber section using the 4 screws removed earlier. The far end of the bulb must rest on a support bracket on the wall of the Bio Cart. Verify that the end of the bulb is on that bracket when reinstalling it. When both units are installed, plug them in to the electrical outlet.

HEPA Filter Replacement

DO NOT replace the HEPA while on a work site. Unplug the Bio Cart HEPA-UVC 13 and open the HEPA door by turning the 2 latches on the Door. Slide the old HEPA out and dispose in the proper manner. It is best to place it in a plastic bag and seal it with Tape before removing it from the area. Some contaminants require the HEPA be Doubled Bagged in 6 mil plastic bags and labeled – check your local regulations for disposing of contaminated materials.

Routine Inspection of Electrical Wiring and Interlock Observe the wires that are visible such as the Power Lift wires and the "IN USE" light wired and if the insulation appears compromised, have it repaired or replaced immediately. The Interlock switch on the HEPA Filter Door must turn off the UVC lights and the Air Scrubber Fan when the door is opened. Contact Air-Care if there are any questions on how to replace or adjust it.

Routine Inspection of the Ladder and its supports

Inspect the ladder itself for any missing or loose parts. Look for cracks in the side rails and the steps. If these are present, replace the ladder.

The Ladder Supports in the Bio Cart HEPA-UVC 13 must be in good working order with no missing or damaged parts. Check the pictures of the ladder supports if there is any question how it should look when in good operating condition.

Routine Inspection of the Wheels

The 4 caster wheels must not be broken or loose. Be sure the locking mechanisms work.

Handles, Door Lock, Hinges, Windows and Cart Frame

Test the Door Handle for secure latching when closed and verify that the lock works from both inside and outside. The hinges must not be damaged or missing parts.

Check the windows and frame for loose or missing screws and replace immediately. If the windows become so scratched that the operator cannot see through them clearly, call Air-Care and order replacement panels.

COMPLIANCE

Bio Cart HEPA-UVC 13 complies with all relevant health and safety guidelines for portable, negative air, dust containment carts used in healthcare facilities such as ICRA 1 through 4, and others listed below.

Because the occupants of healthcare facilities are often more susceptible to contaminants introduced into the air by routine maintenance work to and above the ceilings, the Center for Disease Control (CDC) has created strict guidelines for how this work must be performed while minimizing the risks to sensitive individuals in its guidelines for Infection Control in Healthcare Facilities (ICRA).

Activities such as testing fire and smoke sensors, adding or rerouting wires and fiber optic lines for IT equipment, cleaning air system components, changing electrical wiring, all must include consideration for controlling the amount of dust and infectious particles that might be disturbed and introduced into the air.

The Bio Cart HEPA-UVC 13 is a portable containment cart that extends to any ceiling 13 ft 2 in high, with a ladder that remains inside to reach the work area. The Bio Cart HEPA-UVC 13 provides negative pressure and air exchange rates to comply with CDC guidelines to contain dust and infectious particles. Bio Cart HEPA-UVC 13 adds UVGI irradiation in the HEPA Filter compartment to neutralize infectious particles captured by the 99.97% HEPA filter. The clean air is then exhausted out the bottom as a diffused flow so it cannot disturb documents on desks. The Bio Cart HEPA-UVC 13 complies with the CDC's ICRA 1-4 Guidelines, and also meets fire control guides for using flame retardant materials and able to quickly be relocated from fire evacuation routes.

Built to Complies, Standards, and Recommendations

ASHRAE 52.2:2007

ICRA Class 1-4 Compliant

OSHA 1910.1000 Air Contaminants: Nuisance Dust OSHA IMIS

- 9135, 9130

OSHA/ACGIH Respirable Dust Compliant

CDC/HICPAC Guidelines for Environmental Infection Control in Health-Care Facilities

- 3.b, 3.b, 3.d.iii, 3.d.iv

- Part IV Appendix B. Air,

VI.C.1. Environmental controls

- VI.C.1.a, VI.C.2, V.I.E.

SPECIFICATIONS

SPECIFICATION	DESCRIPTION
Accessories	150 Watt halogen work light. 5 LED portable head band light with magnetic holder and batteries.
Air Scrubber Fan	880 CFM@300 watt • 62 Db at maxspeed with variable speed control capable of reaching up to 6 air changes per minute.
Bellows	Fire retardant black and yellow vinyl that is 3 Inches high when collapsed and 90 Inches extended.
Cable Pass Through	Cable feed through with heavy bristle air seal.
Caution Sign	Externally visible LED "IN USE" light.
Construction	Extruded aluminum frame and walls made of white melamine with a thermal coating skin provide a durable and easy to clean surface. Motorized dual motor lifts.
Control Panel	Control panel with lift up/down switch and air scrubber fan speed control.
Document Protection	Document holder on door.
Door	Aluminum frame with a white thermal bonded skin that is 27 Inches W, 66 Inches H, locking from Inside or outside.
Filtration	Permanent and washable electrostatic pre-filter. 99.97% 0.3 Micron HEPA. UVGI germicidal lamps in HEPA chamber.
Interlock	HEPA door switch for fan and UVC/UVGI.
Ladder	15 ft. aluminum ladder that meets OSHA requirements for electrical safety and class A rated for 300 lbs.
Lighting	Interior white LED lighting.
Personal Protective Equipment	5 N95 dust masks, 5 sets of disposable clothing including shoe covers, first aid kit, 2 pairs of safety glasses.
Power Cord	Built in 14 gauge, 40 ft. long retractable power cord with grounded plug, roll up guide and circuit breaker.
Power Outlets	Power outlet on Control panel and near UVC window.
Size Collapsed	73 L, 32 W, 77 inches H.
Size Fully Extended	73 L, 32 W, 158 Inches H.
Tool Box	3 drawer locking steel tool box.
Top Lifting Mechanism	Multi-stage power lift with foam seal at top, for ceilings from 7 ft to 13 ft 2 in high.
Weight	720 lbs with ladder, tool box and all air scrubber filters installed.
Wheels	4 Inches dia x 2 Inches wide non-marking. Two with total lock for wheel brake and swivel and two with wheel brakes.
Windows	Back and front hinged pass through windows.

Specifications subject to change without notice.

LIMITED WARRANTY

Bio Cart Premium HEPA 13

Air-Care warrants this product to be free from defects in materials and workmanship to the original purchaser for a period of Five (5) years from the date of purchase. Components listed below are excluded from this Five year period and are covered for periods described below:

PART	COVERAGE	PART	COVERAGE
All wiring, control panels and electrical components	1 Year	Ladder	1 Year
Bellows	1 Year	LED Lighting	1 Year
Camera	1 Year	Lift Motor Assembly	1 Year
Blower Motor	1 Year	UV Light Assemblies	1 Year
Cord Reels	90 Days	Wheels and Filters	No Warranty

Warranty covers both parts and labor (labor is to be performed at Air-Care's facility located at 3868 E. Post Road; Las Vegas, Nevada).

Warranty is extended to the original purchaser and is NOT transferrable.

This warranty does not extend to any damage to a product caused by or attributable to freight damage, abuse, misuse, improper or abnormal usage. Warranty is also void if the product has been modified or altered in any way.

The purchaser is responsible for the cost of shipping the equipment to Air-Care's facility for evaluation. If found to be defective and covered by the terms of this warranty, Air-Care will pay FedEx ground shipping charges on the repaired or replaced item back to the purchaser's location. Any additional expedited service charges for quicker shipping shall be born by the purchaser. If the product or component is not found to be a warranty issue, the purchaser will be responsible for return shipping charges.

Air-Care is not responsible or liable for indirect, special, or consequential damages arising out of or in connection with the use or performance of the product; damages with respect to any economic loss, loss of property, loss of revenues or profits, loss of use, or other incidental or consequential damages of whatsoever nature.

The warranty extended hereunder is in lieu of any and all other warranties, and any implied warranties of any type.

This warranty gives you specific rights. These rights and others vary from state to state.

Division of D.P.L. Enterprises Inc.
3868 East Post Road, Las Vegas, Nevada 89120, (702) 454-5515, FAX (702) 454-5225
Website: www.air-care.com; E-mail: cs@Air-Care.com