Airocide HD-Titan

Photocatalytic Air Purifying Technology

Owner's / Maintenance Manual



Model

HD-Titan

800-627-4913
www.airocidesystems.com

Congratulations

By purchasing an Airocide HD-Titan photocatalytic air purifying system, the most advanced and effective airborne pathogen reduction system available, you've positioned yourself as a leader in your industry. The Airocide HD-Titan products were developed from NASA technology and us e a patented process to airborne microbes such as Bacteria, Mold/Fungi, Virus es, as well as any other airborne organics. The same process breaks down VOCs, like ethylene gas, formaldehyde and many odors, into micro amounts of harmless carbon dioxide and water vapor. AiroCide HD-Titan systems generates ZERO EMISSIONS (i.e. No Ozone or other toxic chemicals and gas).

Important Safety Instructions

For your safety and protection, read this entire Owner's Manual before you attempt to install or use your AiroCide HD Titan system. Keep this safety information where you can refer to it if necessary.

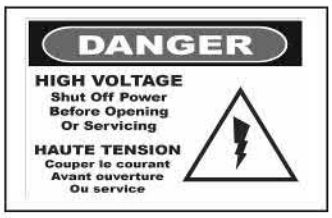
DO NOT run cord under carpeting. DO NOT cover cord with throw rugs, runners, or similar coverings. DO NOT route cord under furniture or appliances. Arrange cord away from traffic area and where it will not be tripped over.

Cautions & Symbols on Unit









For a French translation of this manual, please contact us at 800-627-4913

Warning

WARNING: To Reduce The Risk Of Fire, Electric Shock Or Injury To Persons, Do Not Use Replacement Parts That Have Not Been Recommended By The Manufacturer (e.g. Parts Made At Home Using A 3D Printer)

WARNING: If you spray any types of chemicals or cleaning agents in the room that contains that AiroCide HD-Titan unit(s), please turn off the AiroCide HD-Titan unit(s) during this spray period as well as (1) hour after spraying is complete (to allow for all residues to dissipate).

The various sprays and cleaning agents could possibly harm the catalyst located inside the AiroCide HD-Titan reactor bed.

DO NOT operate any fan with a damaged cord or plug. Discard fan or return to an authorized service facility for examination and/or repair.

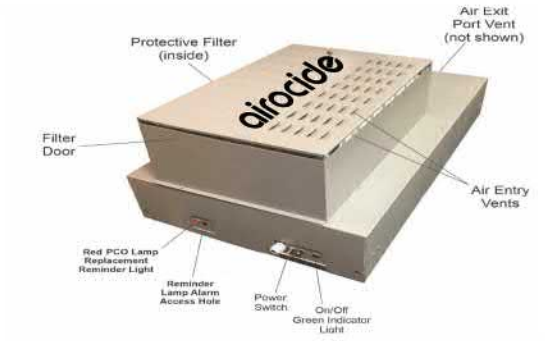
DO NOT run cord under carpeting. DO NOT cover cord with throw rugs, runners, or similar coverings. DO NOT route cord under furniture or appliances. Arrange cord away from traffic area and where it will not be tripped over.

Technology

As contaminated pathogenic air is processed through the photocatalytic reactor, the patented green technology, integrated with Photocatalytic Oxidation (PCO), works in unison to destroy harmful airborne microbes and dismantle volatile organic compounds (VOC) while not producing any by-products. Clinical studies show up to a 99.99% kill rate for microbials and removal of VOC's. The AiroCide HD Titan technology is a FDA Class II listed medical device. AiroCide HD Titan is energy efficient, consuming less Energy then (4) 100 watt light bulbs.

Titanium dioxide (TiO2) is a component photocatalyst material used in the device. A unique process is used to create the patented TiO2 formula that coats the catalyst material. When this material is irradiated with the ultraviolet photons from the AiroCide HD Titan proprietarty lamps inside, hydroxyl radicals and super-oxide ions are formed. These species will oxidize (reduce to trace elements of carbon dioxide and water) volatile organic compounds (VOC's) adsorbed on the catalyst surface. They will also kill and decom pose airborne pathogens like powdery mildew, mold, botrytis, bacteria, and yeast. Because the organic material is completely oxidized by this process, the photocatalytic reactor is self-cleaning relative to organic material on the catalyst surface. AiroCide HD Titan does not generate nor use ozone and/or any other type of gas or chemical.

Our Air Sanitation technology has been in commercial use since 1999. The technology has been deployed in a broad base of applications, from Cold storage for fruits and vegetables, food processors, wineries, medical health facilities, corporate/home offices, and many other market segments where clean air is needed.



* At approximately 11 months this Red LED light will illuminate, indicating it's time to re-order new Airocide HD-Titan Proprietary PCO Lamps. Refer to the maintenance section for more information.

Figure 1

Airoicde Titan uses truly breakthrough technology to remove airborne pathogens. It works by drawing in air through its Air Entry Port and then forcing it through its Reactor Bed where a photo-catalytic reaction kills living organic matter like mold/fungi, bacteria and viruses and breaks down organic gases (VOC's) like ethylene.

NOTE: Your AiroCide HD-Titan comes with a protective

4" Filter inside the unit. Additionally, your system comes with (1) extra protective 4" filter. This filter needs to be checked periodically to ensure it is not clogged. We estimate that each filter should last approximately 6 months. See Filter Replacement Instructions on page 9.

NOTE: Depending on the particular dust load in a given facility, the filter may need to be changed more frequently.

Installation – Wall or Ceiling Mount

NOTE: The TITAN unit will perform the best when it is located within the active air current that occurs within your facility. This allows for a gr eater distribution of the units processed (clean) air.

Note: Due to the size of the TITAN unit (70 lbs.) and the nature of its installation, it will require heavy-duty bolts to mount.

Important: The manufacturer has enclosed mounting hardware. However, some surfaces may require a different specific type of mounting hardware, which is not included and needs to be supplied by customer.

CAUTION: DO NOT plug unit in until final step is completed.

1) Take the unit carefully out of its shipping box.

NOT E: The unit will also come in three basic parts: mounting bracket, bas e unit, and the unit lid. Upon receiving the AiroCide HD-Titan unit, all three sections will be securely fastened together. See below for installation instructions. See Figure 2 and 3.

2) AiroCide HD-Titan systems are designed to mount to a wall or to the ceiling, as well as can be hung from the ceiling (see this option on page 5). If there is any doubt about the security of the mounting surface, con tact an engineer or other individual with knowledge of the wall or ceiling's construction.

NOTE: If wall or ceiling mounting, the unit can either be mounted horizontally or vertically. We recommend that the AiroCide HD-Titan unit be located centrally within the room and in an area with good airflow. If multiple units are being installed space equal distance apart. Please call our technical service department if you need any help deciding where to place AiroCide HD-Titan unit(s).

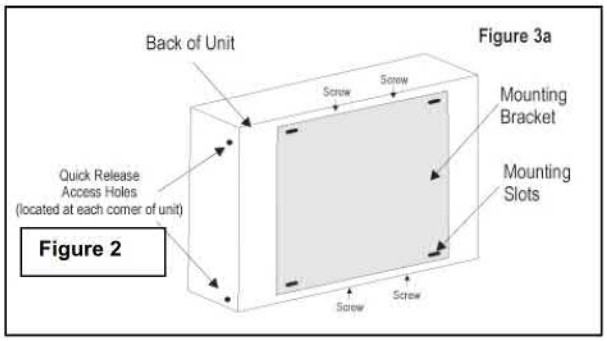
3) Determine where the unit will be mounted. It should be located centrally in the room so that walls, light fixtures or any other objects do not block the air vents. The air exit port must be at least 36" away from any obstructions. Do not obstruct the air entry port.

NOTE: The Exit Air Port (See figure 1 on pg. 3) should not be positioned where it is directly facing an incoming air current (i.e. from the evaporator) We do not want the direct air flow, from the evaporators, to impede any of the AiroCide HD-Titan exiting air. Position the AiroCide HD-Titan Unit(s) exit air flow into the stream of air from the evaporators.

4) The air exiting the unit will be warm, do not let any objects touch the air exit port or get trapped inside the air intake hood vent (see Figure 1 on page 3).

5) If the mounting bracket is not loose in the bottom of the box, follow this step below:

Remove mounting bracket from the AiroCide HD-Titan unit by first releasing the unit's lid. Press in the (4) quick release buttons located at each corner of the lid by simply inserting a screwdriver or some other object that will fit into the access holes. **See Figure 2 below.** To detach the mounting bracket from the base, unscrew the two ¼" Phillips head screws on top and the two screws on the bottom of the bracket and lifting up while pulling the hooks out of the AiroCide HD-Titan (see Figure 2). Keep the screws.



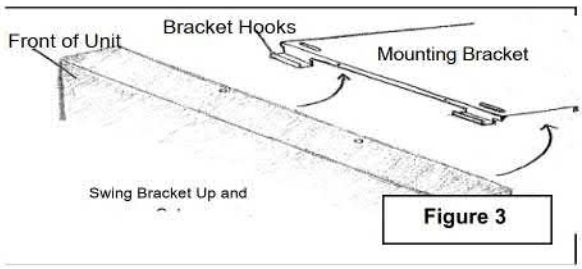


Figure 3

6) Using a level, place the mounting bracket on the mounting surface with bracket hooks on top and facing outward. (See Figure 4) The bracket hooks are the main support of the unit and will prevent the unit from falling.

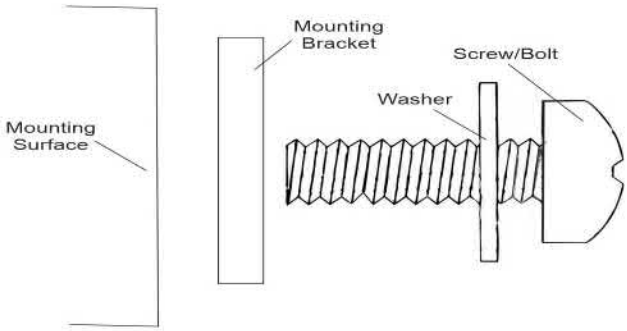


Figure 4

7) Due to the weight of the Titan (70 lbs), it is very important to install this mounting bracket to a solid surface - ideally to either wood or metal studs. The mounting bracket has (6) slots on 16" centers to all ow for attaching this bracket to studs. Your unit comes with (6) self tapping screws/washers (Part D in your installation hardware pack). If you have to mount the bracket to sheetrock, then use the drywall toggle bolts (Part E in your installation hardware pack). Note that the toggle bolts will require a 5/8"hole drilled into the sheetrock.

When installing this mounting bracket, use (6) screws or bolts to properly secure it to your mounting surface.

NOTE: For either install application – studs or drywall, always us e the supplied washer between the screw/bolt head and the mo unting bracket.



If your mounting surface is a pre-fab metal skin material (or some other type of surface outside of your standard sheetrock, etc) then you will need to provide the specific hardware that will be appropriate for your particular mounting surface.

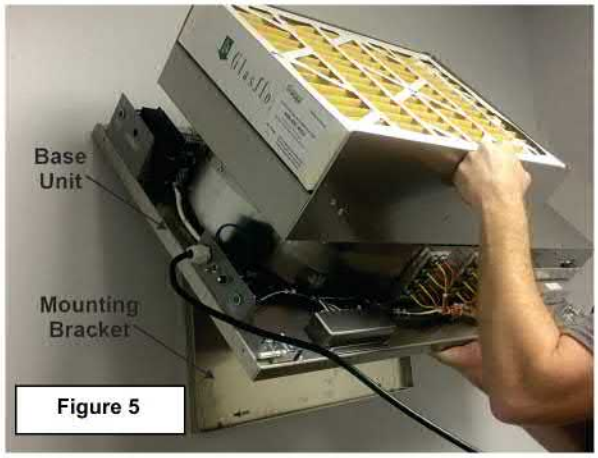
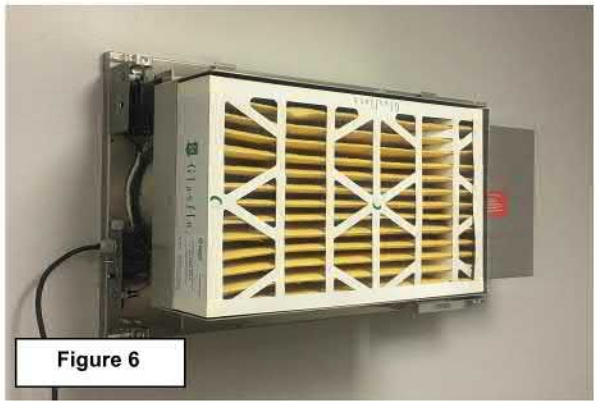


Figure 5


Figure 6

NOTE: Mounting slots are on 16" centers to allow mounting to a stud. **If mounting horizontally on wall, hook should be at the top of the mounting bracket.**

8) Attach unit to mounting bracket by aligning slots on the back of the base unit with the two hooks on the mounting bracket (see Figures 3 – 6) Push the unit until the hooks on the mounting bracket slide through the slots on the back of the unit and pull down where it is flush with the mounting bracket and wall.

9) When reattaching the mounting plate to the unit, it is important to completely tighten the (2) screws on the bottom first (opposite side of the J-hooks) then tighten the (2) screws on top. This is to ensure proper placement of the J-hooks so the lid will pass by the J-hooks and fasten properly. It is extremely important to ensure the unit is securely fastened to the mounting plate before attaching the lid.

10) Re-attach unit's lid (cover) back to the unit base.

Important: When attaching the cover back onto the unit, simply align each corner of the cover with the unit, then, press down on each corner, when done correctly, you should hear a "CLICK" noise when each of the fasteners are locked back in place. Pull up on each corner. If one corner is loose, push down again until you hear the fastener "CLICK" into position.

WARNING: If the Titan lid is not properly secure, prior to installation, seriously bodily harm can occur if the lid falls off.

11) Plug unit in and turn on power switch.

NOTE: The word "Unit" in step 8 above refers to the unit's base and not the unit's lid that is referred in step #10 above.

NOTE: The AiroCide HD-Titan unit can also be mounted vertically or on the ceiling. Follow the same steps in #'s 6 and 7 on page 4. (The only exception will be that the stabilizing screws, from step #5, will be on the left and right s ides of the unit, versus, the top and bottom.)

NOTE: The unit weighs 70lbs. Make sure that your installation materials can properly support the unit. If you have any doubt about the security of the mounting surf ace, contact an engineer or other individual with know ledge of the ceiling's construction.



Installation – Hang Unit From Ceiling - (Optional)

NOTE: The AiroCide HD-Titan unit will perform the best when it is located within the active air current that occurs within your facility. This allows for a greater distribution of the units processed (clean) air.

It appears that in most facilities – the most active air current tends to be in the center of the room.

To Hang Unit from the Ceiling

NOTE: Before attempting to hang the Titan from the ceiling, it is essential to ensure all 3 component parts (mounting bracket, base, and unit lid – see note on page 3) are securely fastened together.

Please ensure the unit's lid is securely attached by slightly pressing down on each four corners – this will ensure that the quick release fasteners are all properly locked in place. Please refer to page 7 for more information about quick release fasteners.

WARNING: If the Titan lid is not properly secure, prior to installation, seriously bodily harm can occur if the lid falls off.

NOTE: The air exiting the unit will be warm. Do not let any objects touch the air exit port or get trapped inside the air intake hood vent (see figure 1 on page 3).

NOTE: If installing multiple units, attempt to put the units' equal distance from each other. Hang from the ceiling and as close to center as possible as described above. The unit's air exit port must be at least 36" away from any obstructions. Do not have any other air source blowing directly into the unit's Air Exit Port.

1) You will see on the underneath side of the Airocide HD-Titan there are 4 U-clamps that will be used to hang the Airocide HD-Titan unit from the ceiling. **See figure 9 on page 6.**

2) The manufacturer has included 2 harnesses (one for the left side and one for the right side. These are interchangeable). **Please attach the harness per Figure 7 below (i.e. Hook 1 to u-clamp left top corner. Hook 2 to u-clamp lower left corner. Hook 3 to top right corner u-clamp. Hook 4 to lower right corner u-clamp. Hooks A & B will be used to attach the unit to your ceiling in step #5 on page 6.**

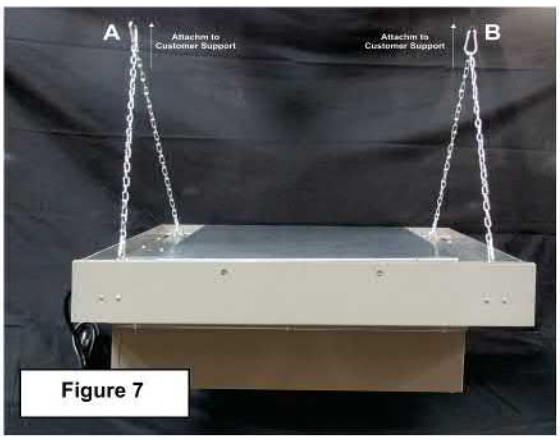


Figure 7

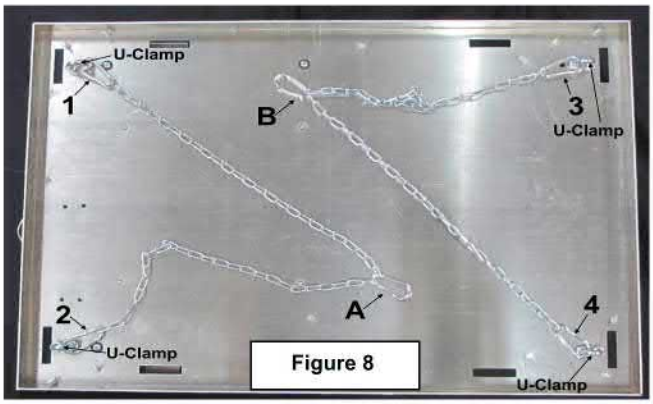


Figure 8

3) Prior to attempting step #5 on this page – ensure that the Airocide HD-Titan lid is securely in place by pressing in each of the top four corners on the lid itself.

NOTE: Refer to page 7 for more information on how the Quick Release Fasteners, on the Titan lid, function.

WARNING: If the Titan lid is not properly secure, prior to installation, seriously bodily harm can occur if the lid falls off.

NOTE: The unit weighs 70 lbs. Make sure that your installation materials can properly support the unit. If you have any doubt about the security of the mounting surface, contact an engineer or other individual with knowledge of the ceiling's construction.

4) You will need to provide the material to attach the harness to your ceiling. Attach two supporting lines to your ceiling- One from hook A to the ceiling support and one from hook B to the ceiling support. The manufacturer would recommend you use the same material that is used to hang your light fixtures (i.e. thread rod, metal chain, metal cable, etc.) **See figure 9 below.**

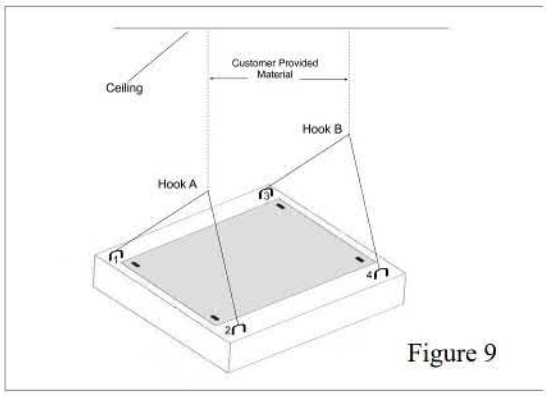


Figure 9

5) Once you have securely hung the Airocide HD-Titan and insured that the unit's lid is securely fastened, next, plug the HD-Titan into your power source and turn the unit on.

System Start Up

(Do not remove the cover when the unit is plugged in.)

NOTE: If proper power is supplied to the unit and the green LED light goes out, call for service.

DO NOT supply power to the Airocide HD-Titan unit until it is completely installed, and its cover is securely fastened.

As the unit turns on, the green power indicator light should come on and you should hear the fan come on.

Maintenance

Annual PCO Lamp Replacement Alarm / Reset

At approximately 11 months, from either the first time you turn your AiroCide HD-Titan unit on or the last time your re-set your reminder alarm (after last lamp change), the Red Indicator Light (See figure 1 on page 3) will illuminate and the Annual Maintenance Alarm will begin to beep 3 times a minute every 4 hours. This is a reminder that it's time to re-order your lamps.

Note: Your AiroCide HD-Titan unit will have (2) LED lights. One is the power light (green) and this light should be on anytime the HD-Titan unit is turned on. This light is located next to the On/Off switch. The second LED light (red) is located on the upper left side of the unit. This Red light will only illuminate once it is time to perform the annual PCO Lamp Replacement.

To re-order your annual replacement AiroCide HD-Titan PCO Lamps, please contact your local Airocide Systems distributor.

As mentioned above, the illuminating of the Red light and the beeping is just a 30 day reminder to order your Replacement PCO Lamps. Once you have ordered your lamps, and while you are awaiting the arrival of these lamps, you can turn off the alarm (beeping) and indicator light by getting a small Phillips head screw driver or ball point pen, insert into the alarm reset access hole (see figure #1 on pg. 3), you will feel the button depress and then hold the reset button until a rapid beeping should begin (approximately after 5 seconds). Hold the button for another 7-10 seconds and release. At this point the alarm has been reset. While performing this process, if for some reason you do not hear the rapid beeping, after depressing the button for approximately 5 seconds, try again and make sure you are making solid contact on the button and that it is depressed for at least 5 seconds to hear the rapid beeping. The Red LED light, on the upper left side of the unit should also not be illuminated once the alarm has been reset.

NOTE: The access hole/alarm is located on the upper left side next to the Red LED light. Once your new lamps have been installed, reset the timer to ensure the proper 11 month time period starts again from the time you replaced your PCO Lamps.

Because the expected life span of the AiroCide HD-Titan proprietary lamps used in systems is approximately one year, all PCO Lamps must be changed every 12 months. In addition, the protective 4" filter needs to be changed approximately every 3 – 6 months*. This filter keeps dirt out of the AiroCide HD-Titan reactor chamber. Failure to change this filter on a timely basis will reduce the unit's photocatalytic reaction and will cause the unit to not operate at its maximum capacity and efficiency.

*Note: Depending on the particular dust load in a given facility, the filter may last longer or may need to be changed more frequently.

Changing the AiroCide HD-Titan Proprietary Lamps

Lamp Warning -Use of any lamps other than those supplied by manufacturer may result in the malfunctioning of the *AiroCide* HD-Titan unit, as well as compromise its pathogen killing effectiveness. Use of any other lamps will void warranty.

Caution: Be sure unit is unplugged before beginning service.

1) Disconnect the power source. Make certain all power is turned off to the unit.

If your unit is installed on a wall, or hanging from a ceiling, the annual maintenance can perform without taking the unit down. However, if you prefer to take the unit down, to perform the maintenance, simply disconnect the unit from its mounting bracket or hanging harness (do the reverse of installation instructions starting on page 3) and place unit on a work bench.

Quick Release Fastener

Release the fasteners by locating the four access holes along the four corners of the cover and simply inserting a screwdriver (or some other object that will fit into the access holes) and push in the release mechanism (see picture) for the fastener. Repeat this process for the remaining three fasteners (i.e. one on each end of cover).

NOTE: A "POP" will sound when the fastener has been released.

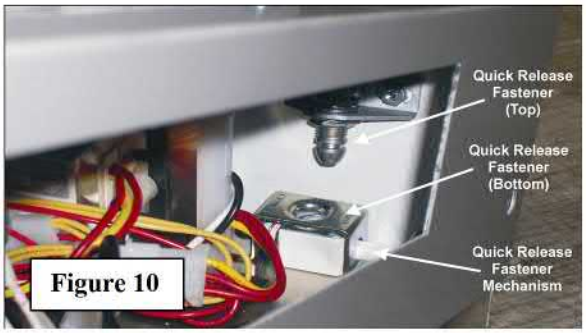


Figure 10

Once all four fasteners have been released, remove the cover from the unit and set aside.

Important: When attaching the cover back onto the unit, simply align each corner of the cover with the unit, then, press down on each corner, when done correctly, you should hear a "CLICK" noise when each of the fasteners is locked back in place. Pull up on each corner. If one corner is loose, push down again until you hear the fastener "CLICK" into position.

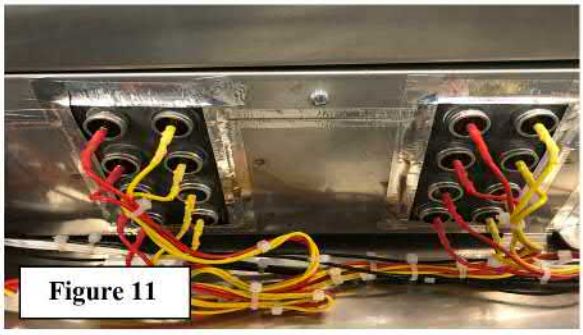
NOTE: Prior to disconnecting any of the wiring harness, observe how the unit is currently wired. See wiring diagram on page 10. Here are a few helpful tips.

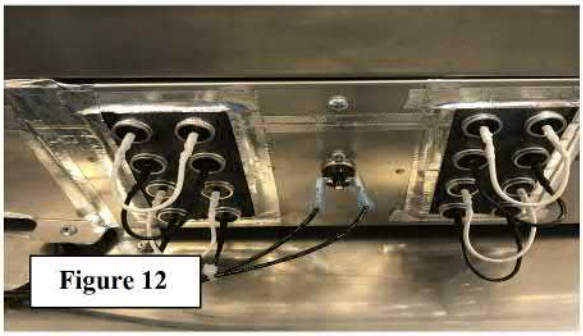
- Each ballast will run a group of 4 lamps (this group of 4 consists of 2 sets of 2 lamps which will be explained below).
- Each set of ballast will have a total of 4 wires coming off its outlet side – 2 red wires and 2 yellow wires. **See figures 11, 12, & 13 on this page.**
- Each set of 2 lamps will have (1) yellow wire going to one lamp and (1) red wire going to the second lamp. These 2 lamps are then connected via a small jumper wire (either white or black – these jumpers are interchangeable). **See wiring diagram on page 10.** Repeat the above for the second set of 2 lamps. Once completed, you have a group of 4 lamps wired into (1) ballast.

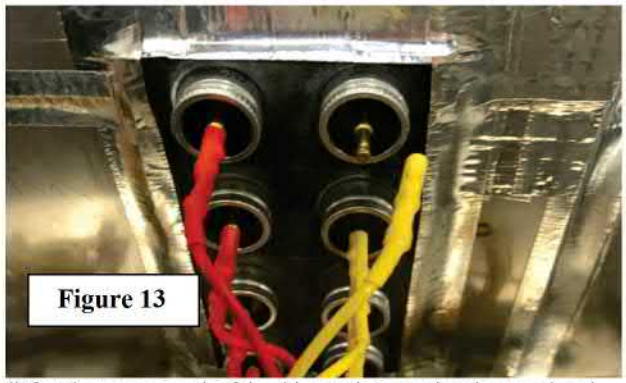
NOTE: Airocide Systems recommends that you replace 4 lamps at a time. This will help to ensure that the replacement lamps are wired correctly.

3) Starting at the end closest to the fan – take the first group of 4 lamps and disconnect the white and black jumpers. Then, on the other side of the lamp, disconnect the red and yellow wires. **See Figures 11, 12, & 13.**

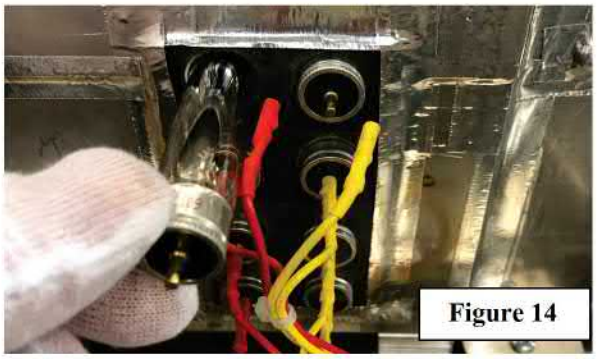
NOTE: To aid in removing the lamp, wet the grommets with a small amount of tap water or a cotton ball or swab.


Figure 11


Figure 12


Figure 13

4) Gently remove each of the 4 lamps by grasping the metal end on each lamp, and firmly sliding it out of the rubber grommet. **See figure 14 below.**


Figure 14

5) Place the old lamps to the side out of the way.

NOTE: Using the wet cotton swab (from above), slightly moisten the ends of the new lamps prior to inserting into the rubber grommets. It is also recommended that when handling the new PCO lamps – use gloves so the oils from your hand do not get on the PCO Lamps.

6) Insert (4) new AiroCide HD-Titan proprietary lamps (provided by manufacturer) into the rubber grommet in the reactor bed.

7) Re-connect all wires that were disconnected in step #3 on page 6.

8) Repeat the above steps for the remaining groups of lamps.

9) Reinstall cover.

10) Once all lamps have been replaced, take all of the old lamps and discard according to your local regulations, which pertain to disposal of UV related and related lamps.

11) Turn the power back on.

12) Now that the new PCO Lamps have been installed – we want to have the PCO Lamp Replacement timer re-set in order to properly alert again in exactly 11 months. To reset the timer, follow the steps listed under "Maintenance" on page 7.

Filter Replacement Instructions

Please note that the 4" protective filter should be replaced approximately every 6 months*. The purpose of this protective filter is to keep dust/dirt out of the AiroCide HD-Titan reaction chamber. Failure to change this protective filter will cause the AiroCide HD-Titan unit to not work at maximum capacity and efficiency. Additionally, failure to change out this protective filter per the recommended manufacturer schedule, could lead to a "clogged" filter which can then cause the unit's fan to pre-maturely burn out.

*Note: Depending on the particular dust load in a given facility, the filter may last longer or may need to be changed more frequently.

1. Turn the unit(s) off.

2. Remove, but do not discard the (2) screws that hold the Filter Door closed. **See image below.**



3. Swing the door open and remove the filter by pulling it straight out and discard. **See image below.**



4. With the new filter in hand, take note that the air-flow arrow points down.



NOTE: Air-Flow Arrow points down. See image above.

5. Insert filter completely making sure it is flush with the edge of the intake cover.

6. Swing the door closed and reapply the (2) screws being careful not to over tighten.

7. Turn unit(s) back on.

Limited Warranty

Airocide Systems offers a five year from date of invoice limited warranty on the material and workmanship of all metal, plastic and electrical components of this system, not to include lamps, labor, or returned freight charges. This warranty does not cover loss of or damage to any parts of this system not installed in accordance with the furnished installation and maintenance instructions. At its option, Airocide Systems will repair or replace any components, which upon inspection Airocide Systems finds to be defective. Airocide Systems will only repair or replace components if the components have been installed in accordance with the furnished instructions and that there have been no misuse or negligence. Use of any lamps other than those provided by Airocide Systems may result in the malfunctioning of the Airocide HD-Titan unit, as well as, compromise its pathogen killing effectiveness. Use of any other lamps will void warranty. If the protective filter, referenced in this manual, is not changed out on a timely basis and/or the customer uses a replacement filter that was not purchased thru the manufacturer of Airocide HD-Titan and either of these events causes the unit's fan (or any other component) to prematurely fail – these failed components will not be covered under the products warranty.

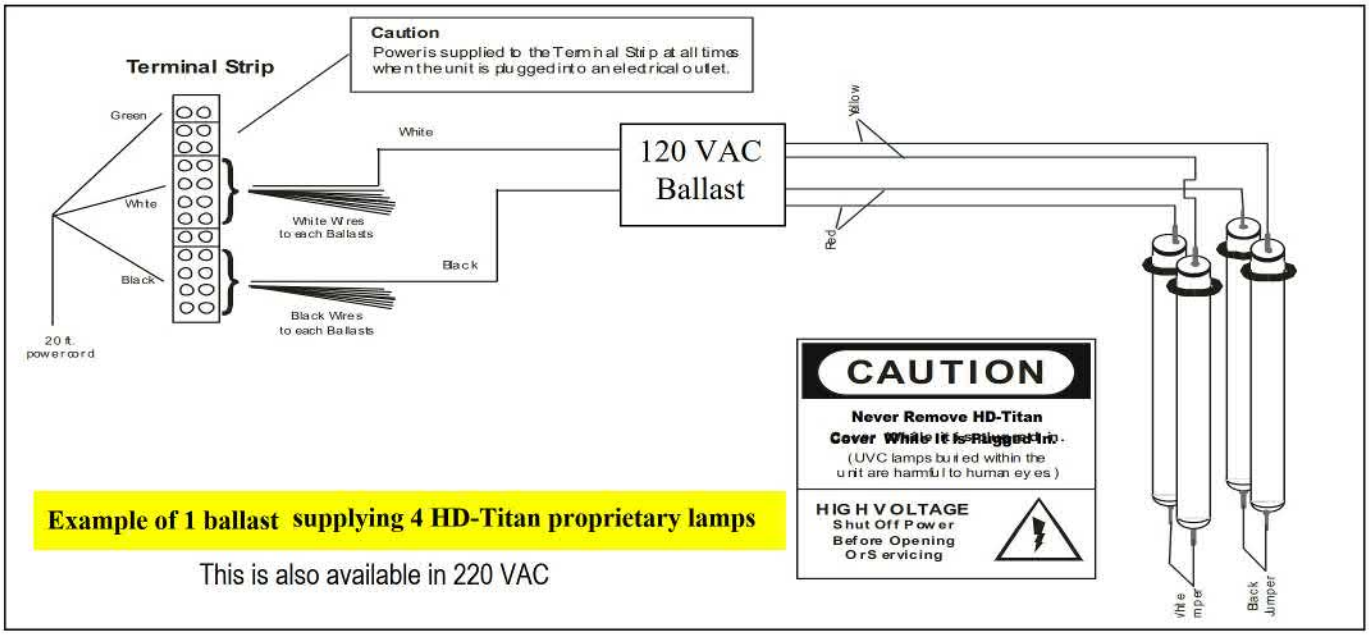
Specifications

SPECIFICATIONS Titan

Power Cord Length (Custom Lengths Available)	9 ft.
Power (Pre-Set / Non-Switchable)	120 Volt / 220 Volt
Recommended Available Amps	4 Amp / 2 Amp
Warranty	5 Years

Unit Dimensions	39" x 22" x 14 3/8" (.991 M x .559 M x .365 M)
Unit Dimensions With Shipping Box	45 1/2" x 29" x 19" (1.16 M x .737 M x 483 M)
Unit Weight	70 lbs (31.75 KG)
Shipping Weight (Excluding Pallet Weight If Used)	78 lbs (35.38 KG)

Wiring Diagrams

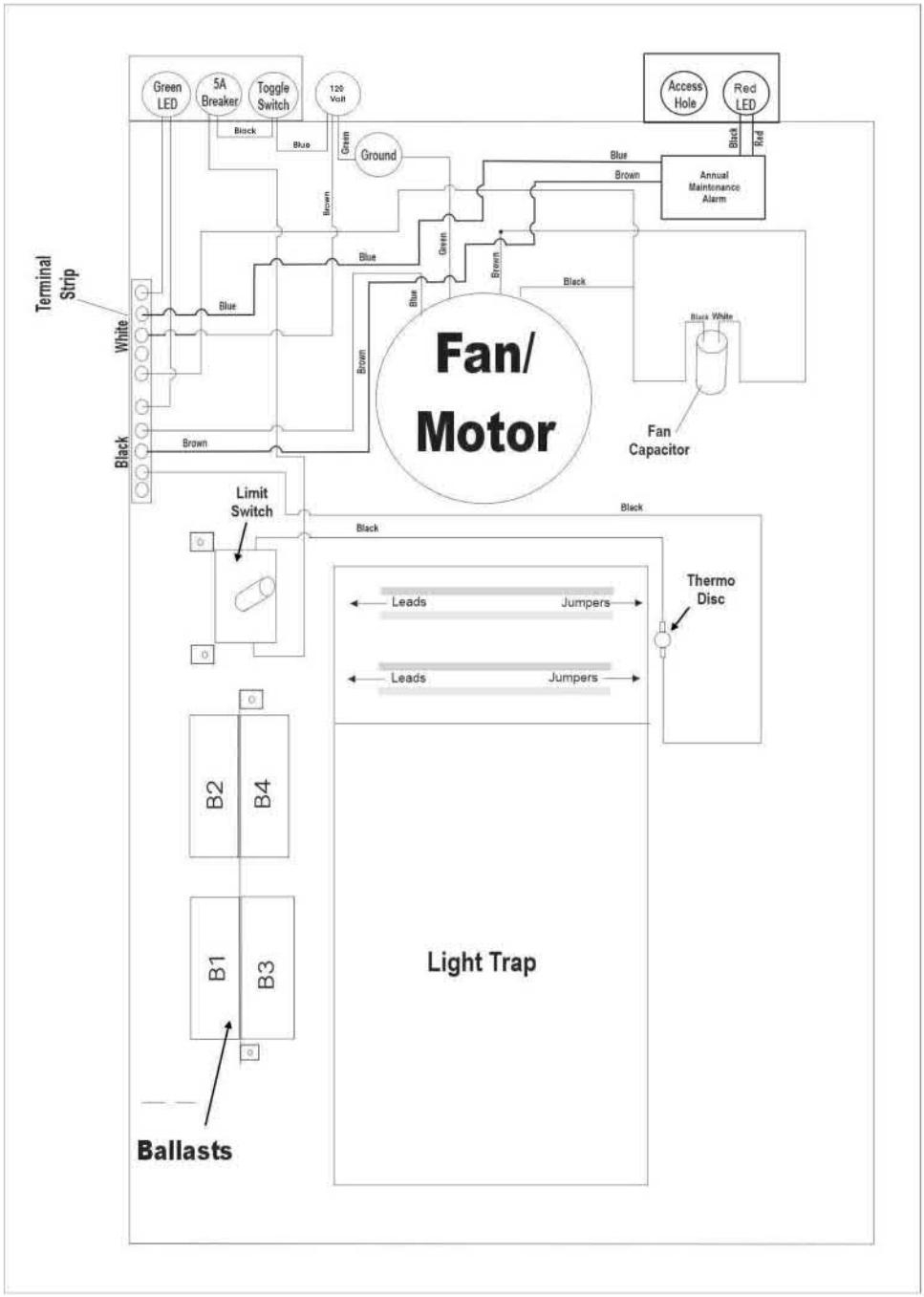


Example of 1 ballast supplying 4 HD-Titan proprietary lamps

This is also available in 220 VAC

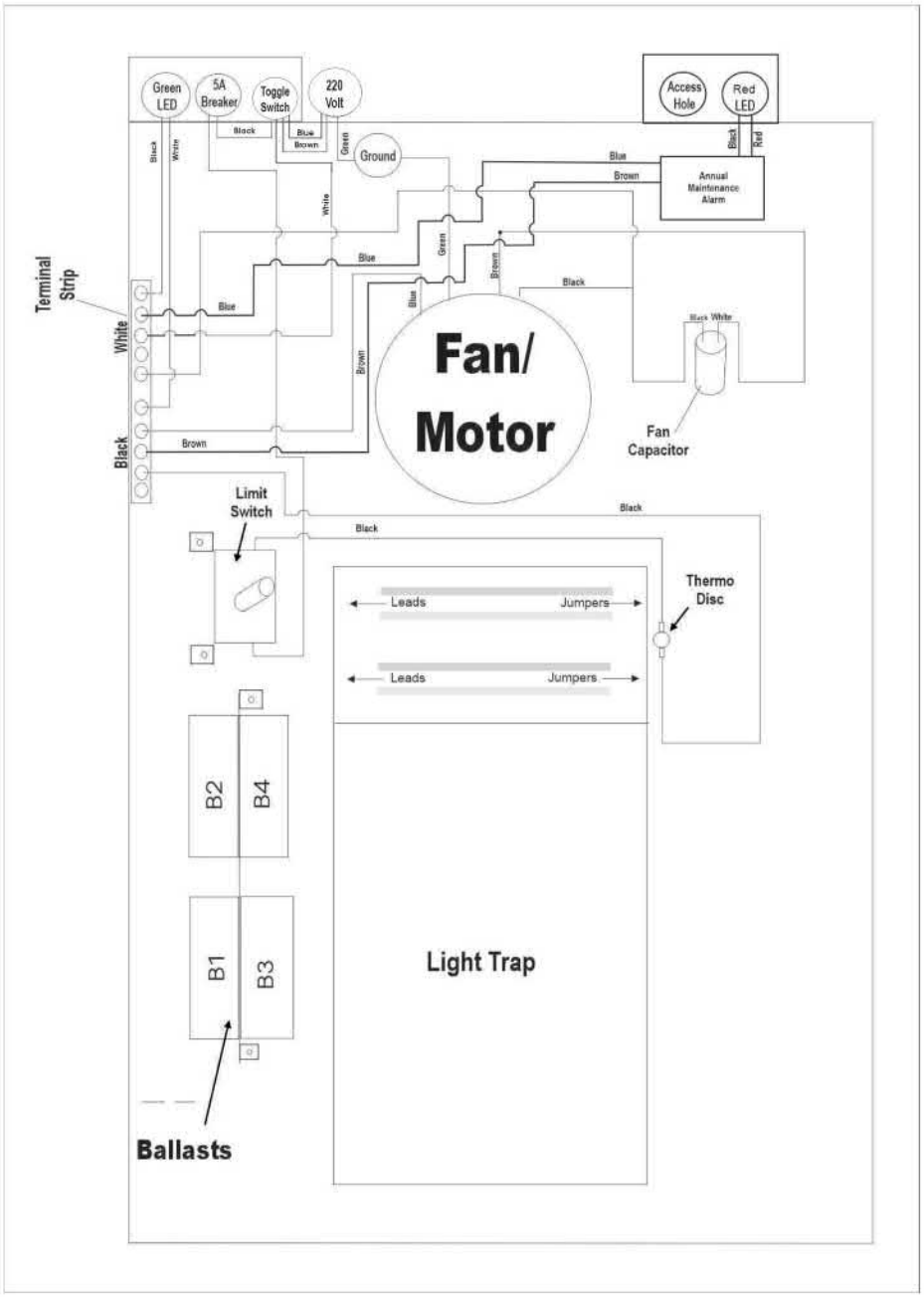
HD-Titan Wiring Diagrams – 120 Volt

HD-Titan Wiring Diagram – 120 Volt



HD-Titan Wiring Diagrams – 220 Volt

HD-Titan Wiring Diagram – 220 Volt



Filter Replacement Reminder

On behalf of Airocide Systems, we would like to thank you for the purchase of your new Airocide HD-Titan unit(s).

The protective 4" filter needs to changed approximately every 6 months*. This filter keeps dirt out of the Airocide HD-Titan reactor chamber. Failure to change this filter on a timely basis will reduce the unit's photocatalytic reaction and will cause the unit to not operate at its maximum capacity and efficiency.

Attached below is a schedule for you to fill in at your convenience that will help keep track of your filter change. If you have any questions regarding the unit(s) or the filter, do not hesitate to contact the number at the bottom of the page.

*Note: Depending on the particular dust load in a given facility, the filter may last longer or may need to be changed more frequently.

Event	Replacement Date
Purchase of HD- Titan Unit	
Filter Replacement	
Filter Replacement	
Filter Replacement	
Filter Replacement	
Filter Replacement	
Filter Replacement	

Maintenance Replacement Reminder

On behalf of Airocide Systems, we would like to thank you for the purchase of your new HD-Titan unit(s).

Please note that every 12 months, the lamps inside your Airocide Systems HD-Titan unit(s), need to be replaced to ensure the unit continues to function properly and eliminates airborne organics like Molds/Fungus, Bacteria, Viruses, allergens, and VOC's.

Attached below is a schedule for you to fill in at your convenience that will help keep track of your annual lamp replacements. If you have any questions regarding the unit or the lamp replacement kits, do not hesitate to contact the number at the bottom of the page.

Event	Replacement Date
Purchase of the HD-Titan Unit	
Kit Replacement 1 (12 months from purchase)	
Kit Replacement 2 (24 months from purchase)	
Kit Replacement 3 (36 months from purchase)	
Kit Replacement 4 (48 months from purchase)	
Kit Replacement 5 (60 months from purchase)	