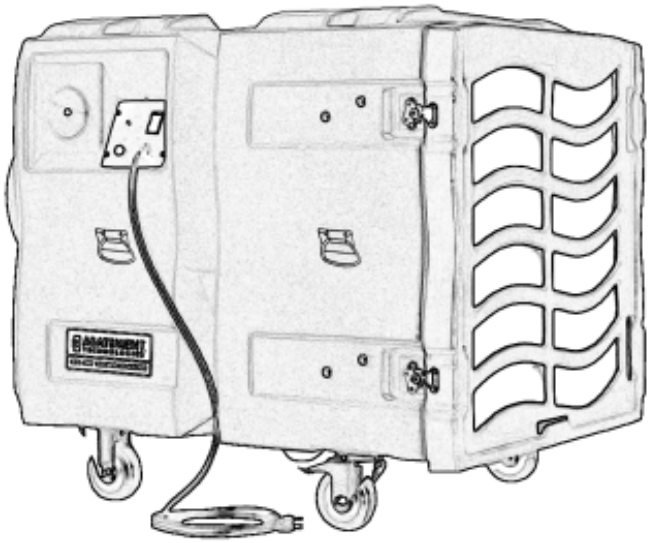
ABATEMENT TECHNOLOGIES
Technologically Advanced Air Purification Products

BULLDOG® PORTABLE AIR FILTRATION UNIT
Models BD2KLV and BD2KLAV

INSTRUCTION MANUAL



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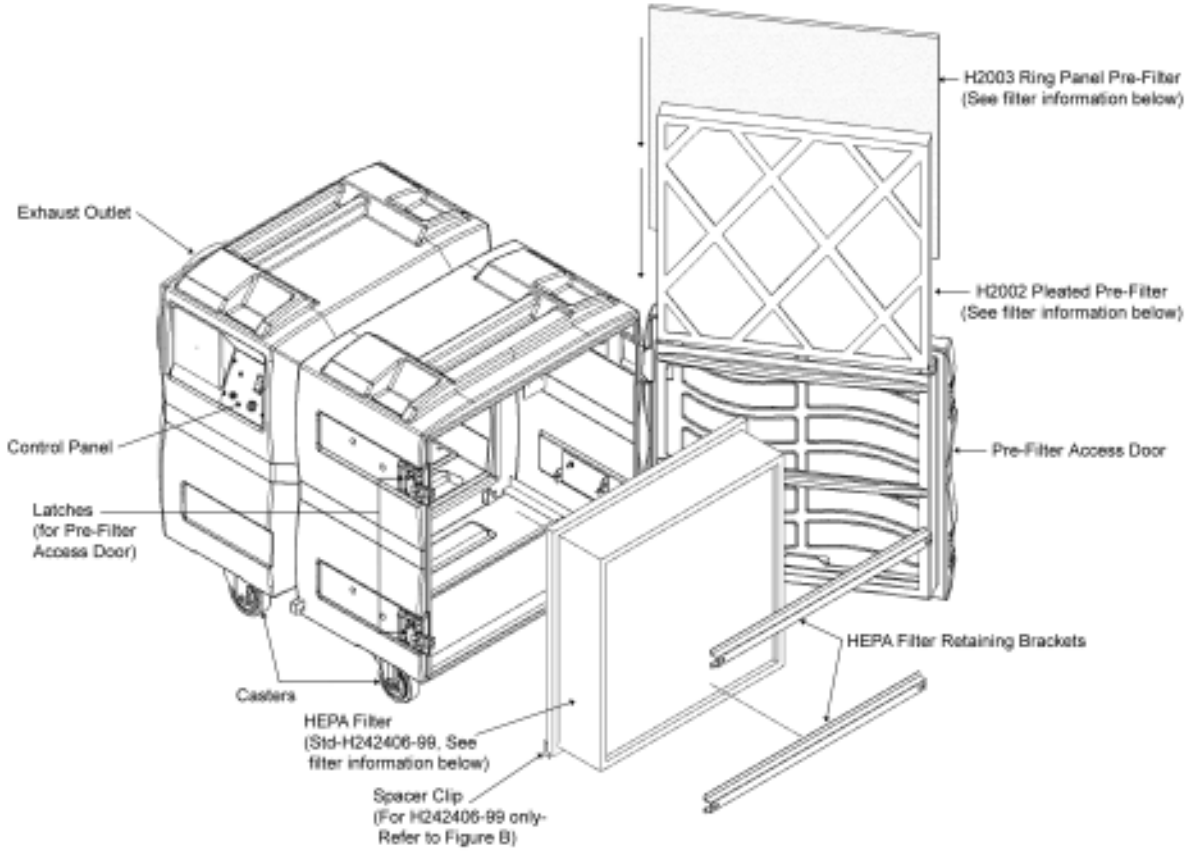
Models BD2KLV and BD2KLAV



1. First Stage:
    - BD2KL - Standard: 1" coarse/particulate ring panel-style pre-filter (P/N H2003)
    - BD2KL - Optional: 2" pleated particulate pre-filter (P/N H2002)
    - BD2KLA - Standard: 2" pleated particulate pre-filter (P/N H2002)
    - BD2KLA - Optional: 1" coarse/particulate ring panel-style pre-filter (P/N H2003)

2. Optional Second Stage:
    - BD2KL - Option 1: 2" pleated particulate pre-filter (P/N H2002)
    - BD2KL - Option 2: 2" high capacity Vapor-Lock® carbon filter (P/N VL2024)
    - BD2KLA - 2" high capacity Vapor-Lock® carbon filter (P/N VL2024)

3. Final Stage:
    - Standard: 6" deep, 99.97% HEPA filter (P/N H242406-99)
    - Optional: 11½" deep, 99.97% HEPA filter (P/N H2010 or H2010M)

4. HEPA filter retaining brackets

5. Casters:
    - 2 each 4" 360° swivel casters with locking feature
    - 2 each 4" fixed position casters

6. Pre-filter access door

7. Control panel

8. Exhaust outlet - 12" diameter

BULLDOG® Portable Air Filtration Unit
Models: BD2KLV and BD2KLAV
Instruction Manual

READ AND SAVE THESE INSTRUCTIONS!

Note: 1. Read and understand all operating instructions before using the BD2KLV and BD2KLAV Portable Air Filtration Units.
2. Save this manual for future reference.

This instruction manual provides important information on the use of the BULLDOG Portable Air Filtration Units- models BD2KLV and BD2KLAV. These instructions must be carefully followed in order to operate the units safely and correctly. If there are any questions regarding the use of the units, please contact Abatement Technologies immediately at 800-634-9091 U.S. or 905-871-4720 Canada.

Abatement Technologies strongly urges users of air filtration units and related accessories to follow the most recent guidelines and/or standards published by the Occupational Safety and Health Administration, Environmental Protection Agency, and all other federal, state, provincial and local regulations.

Note: The U.S. Environmental Protection Agency's publication "Guidance for Controlling Asbestos-Containing Materials in Buildings", EPA 560/5-85-024, includes helpful information on air filtration systems. Abatement Technologies strongly urges anyone performing asbestos abatement to read the most recent edition of this EPA publication before using any air filtration system.

GENERAL INFORMATION

The BD2KLV and BD2KLAV are multi-use air filtration machines, equipped with a pre-filter and a HEPA filter that are capable of filtering many airborne contaminants. An optional carbon pre-filter for capturing low concentrations of odors, vapors, gases, and volatile organic compounds, collectively known as OVG, is also available.

Types of contaminants captured by particulate pre-filters, HEPA filter, or carbon filters:

- Dirt
- Dust
- Drywall dust
- Saw dust
- Lung-damaging particles
- Metal fumes
- Smoke
- Mold and fungal spores
- Low concentrations of OVG
- Low concentrations of Volatile Organic Compounds (VOC)
- Unpleasant nuisance odors

Note: To capture low concentrations of OVG, a Vapor-Lock® carbon filter must be used.

The BD2KLV and BD2KLAV are capable of providing particulate and odor, vapor, gas filtration with final stage filtration through a High Efficiency Particulate Air (HEPA) filter. The units incorporate a series of particulate filters which successively remove larger size to smaller size particles from the air. In addition to providing HEPA filtration, the BD2KLV and BD2KLAV are primarily used in a negative pressure or recirculation mode. A negative pressure condition is created in order to confine contaminated airborne particles. This condition exists when the static pressure inside the room containing the unit is lower relative to the pressure of the environment outside the room. The static pressure differential is created and maintained by continuously exhausting air out of a given room at a faster rate than air enters the room from all other sources. In the recirculation mode, all of the filtered air is exhausted back into the room containing the unit.

Standard Air Cleaning Stages (filters supplied with the unit)

The BD2KLV and BD2KLAV come equipped with two progressively efficient particulate pre-filters. The first stage filter is mounted in the pre-filter access door channel and the final stage HEPA filter is located inside the cabinet:

- First stage: 1" deep, coarse particulate ring panel-style pre-filter (H2003) is designed to capture particles 100 microns or larger.
- Final stage: HEPA filter (H242406-99) is tested and certified to capture at least 99.97% (9,997 out of 10,000) 0.3-micron particles.

Note: The particulate filters in the BD2KLV and BD2KLAV do **not** remove odors, vapors or gases, including volatile organic compounds.

Optional Filters (must be purchased separately) – Refer to table below

There are four optional filters that can be used in both the BD2KLV and BD2KLAV.

- 2" deep, particulate pleated pre-filter (H2002) for capturing particles 10 microns or larger. This filter mounts in the pre-filter access door channel.
- 2" deep, Vapor-Lock® pleated high-capacity carbon filter (VL2024) for capturing OVG. This filter mounts in the pre-filter access door channel.
- 11½" deep, fiberboard frame HEPA filter (H2010) is tested & certified to capture at least 99.97% of 0.3-micron particles.
- 11½" deep, metal frame HEPA filter (H2010M) is tested and certified to capture at least 99.97% of 0.3-micron particles.

The various filter combinations that can be used in the BD2KLV and BD2KLAV are as follows:

Filter Combinations

BULLDOG BD2KLV & BD2KLAV	Standard Filters	Option A	Option B	Option C
First stage (pre-filter)	H2003	H2003	H2002	H2002
Second stage (pre-filter)	---	H2002	---	VL2024
Final stage (HEPA filter)	H242406-99, H2010 or H2010M	H242406-99, H2010 or H2010M	H242406-99, H2010 or H2010M	H242406-99, H2010 or H2010M

The 2" deep Vapor-Lock® pleated, high-capacity carbon filter can be used to reduce airborne OVG by chemically bonding the OVG molecules to the surface area of the carbon granules, via a process known as adsorption. The VL2024 filter also provides a similar level of particulate filtration efficiency to the H2002 pre-filter.

Effective carbon adsorption is dependent upon the amount of carbon and exposed carbon granule surfaces, and the dwell (contact) time the OVG molecules have with the carbon granules. Operating the unit at lower speed settings to increase dwell time can therefore improve OVG adsorption, though it is highly unlikely that all of the OVG will be removed in one pass of air through the unit. Operating the unit in the recirculation mode can increase effectiveness, by exposing OVG particles to multiple passes through the Vapor-Lock® filter.

It is almost impossible to provide accurate estimates to two commonly asked questions: "how much time will it take to capture all of the OVG?", and "how do I know when a carbon filter should be replaced?" Unfortunately, unknown factors, such as concentration levels, fresh-air intake volume,

temperature, and humidity prevent establishment of any more accurate 'rule of thumb' than one's sense of smell. Since off-gassing of adsorbed OVG can occur when the adsorption capacity of the filter is reached, replace the carbon filter as soon as odor breakthrough is sensed. More detailed information on carbon adsorption can be found in an article titled: "***Activated Carbon: How Is It Used? How Does It Work?"***, which can be found on the Abatement Technologies website, www.abatement.com.

TO DETERMINE THE REQUIRED NUMBER OF PORTABLE AIR FILTRATION UNITS

Note: The (a) "Asbestos Abatement Contractors" and (b) "Mold Abatement, Restoration & Renovation" sections of the Abatement Technologies website, www.abatement.com, include a handy Air Change Calculator for all BULLDOG models. This calculator provides users with a simple way to determine how many units are needed to provide a given number of air changes per hour (ACH) in any size containment area, and eliminates the need for user calculations. Simply enter the dimensions of the containment area, the ACH required, and select a built-in safety factor (SF) , to compensate for potential losses due to filter loading, inlet and exhaust collars, ducting, etc. (Please note that use of a SF is recommended, but not required). The calculator does the rest.

To determine the number of units required without using the Air Change Calculator, proceed as follows:

1. Calculate the volume inside containment (V), in cubic feet, by multiplying the length of the area (L) x the width of the area (W) x the ceiling height (H), in feet.

2. Determine the minimum ACH required in the job specification.

3. Select a safety factor (SF). Most users build-in between 10% (SF = 1.1) and 25% (SF = 1.25), or more. If you don't wish to use a SF, proceed to Step 4.

4. Calculate the minimum total airflow required (Total CFM), as follows:
   Total CFM = (V x ACH x SF) ÷ 60.

5. # Units Required = Total CFM ÷ CFM rating for the Unit.

6. Always round up to the next whole number. For example, if the minimum requirement is 2.1 units, 3 units are recommended, not 2.

Example 1:
How many 1,800 CFM units are needed to provide at least 6 ACH in a 35' x 30' x 10' containment area, with a 20% safety factor?
V = 35 x 30 x 10 = 10,500 Cubic Feet
Total CFM = (10,500 x 6 x 1.2) ÷ 60 = 1,260 CFM
Minimum # Units Req'd = 1,260 CFM ÷ 1,800 CFM (airflow of unit) = 0.7 = **1 Unit Required**

Example 2:
How many 1,800 CFM units are needed to provide at least 5 ACH in a 40' x 50' x 10' containment area, with a 25% safety factor?
V = 40 x 50 x 10 = 20,000 Cubic Feet
Total CFM = (20,000 x 5 x 1.25) ÷ 60 = 2,084 CFM
Minimum # Units = 2,084 ÷ 1,800 = 1.16. = **2 Units Required**

Note: This example illustrates the importance of a Safety Factor. If no SF were used, only 1,667 CFM (1 unit) would be required.

BD2KLV AND BD2KLAV TRANSPORT

Note: The BD2KLV and BD2KLAV should be transported in the horizontal position. If extremely poor road conditions exist, or excessive shock and vibration are expected, take precautionary measures by padding the unit to provide impact absorption during transport.

Caution: Always use caution when moving the BD2KLV and BD2KLAV inside a building or home. The units weigh 105 pounds with the H242406-99 HEPA filter and 122 pounds with the H2010 or H2010M HEPA filter. Older structures with weakened floors or staircases may require special considerations for safe transport.

ELECTRICAL REQUIREMENTS

1. The BD2KLV and BD2KLAV units both require a minimum of 110 volts AC, 60 Hz to operate properly; however, maximum airflow performance requires 120 volts AC, 60 Hz.
2. Due to momentary start-up current surge, the units require a 15 amp circuit that is free of other loads.
3. If the unit is connected to a circuit that is protected by fuses, use time delay fuses.
4. Extension cords used for the BD2KLV and BD2KLAV must be UL-listed, heavy duty No. 12/3 AWG industrial grade 3-wire type. Use of larger numerical gauge (lower capacity wire) power cord(s) may result in electrical shock, fire hazards and/or damage to unit. The cord(s) must be in good condition and in continuous lengths (no splicing) and should not exceed a total of 50 feet in length. Make certain that any extension cords used do not reduce power to the unit to less than 110 volts. Use of a voltmeter to confirm adequate voltage is recommended.
5. Check to ensure that any circuit to which the unit is connected is protected by a 15 ampere circuit breaker.
6. The BD2KLV and BD2KLAV should be connected to a three-prong, properly grounded electrical outlet equipped with a Ground Fault Circuit Interrupt (GFCI) device. A GFCI is an electrical safety device that will trip the circuit and stop the flow of electricity if leakage of current is detected. **Important Note: The BD2KLV and BD2KLAV should be plugged into a GFCI receptacle at the power source to protect the power cord and the unit. This GFCI will trip the circuit if it detects leakage of current from the power cord or unit.**
7. To avoid personal injury, fire hazards and/or damage to the BD2KLV and BD2KLAV electrical system and power cord, do not connect or disconnect the power cord to an electrical outlet unless the motor is “OFF”.

REQUIREMENTS FOR SAFE OPERATION

1. Never allow unauthorized individuals or children to operate the unit at any time.
2. Abatement Technologies urges anyone operating the BD2KLV or BD2KLAV to wear the proper personal protective equipment and follow safe work practices in accordance with federal, state, provincial and employer regulations.
3. Check the condition of power cord(s) before using them. Damaged cords can cause fatal electric shock and/or motor failure.
4. Power cord(s) should never be exposed to water, heat, sharp, or abrasive objects; in addition, they should never be kinked or crushed. Avoid tightly wrapping the cords to prevent kinking of the internal wires. Always replace damaged power cords immediately.
5. Never pull the unit by the power cord.
6. Avoid running over power cords with utility equipment and vehicles.

Important Safety Instructions

a. **Do not operate any unit with a damaged cord or plug. Discard unit or return it to an authorized service facility for examination and/or repair.**
b. **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.**

Caution: As with any piece of electrical equipment, always make sure that the unit is turned "OFF" prior to connecting the power cord to an electrical outlet or disconnecting it from an electrical outlet. Failure to do so will cause "arcing", and could result in personal injury, fire hazards and/or damage to the unit. Do not disconnect the power cord from supply receptacle while the unit is operating.

Warning: To reduce risk of electrical shock, do not expose this unit to water or rain. Do not touch the electrical outlet or power cord(s) with wet hands or while standing on a wet or damp surface.

Warning: Risk of electrical shock! Can cause injury or death! Turn unit "OFF" and disconnect power cord from supply receptacle before replacing the HEPA filter and before cleaning or servicing the unit.

Warning: The BD2KLV and BD2KLAV are equipped with an automatic restart motor and blower assembly that will restart without warning after a temporary power interruption or recovery from a thermal overload (over-heating) condition. Keep clear of the motor and blower assembly at all times to reduce the risk of injury.

Warning: To reduce risk of fire or electrical shock, do not use the BD2KLV or BD2KLAV with any solid state speed control device. Do not use in a cooking area.

Caution: The BD2KLV and BD2KLAV are designed for indoor use only.

CAUTION: For General Ventilating Use Only. Do Not Use To Exhaust Hazardous Or Explosive Materials And Vapors.

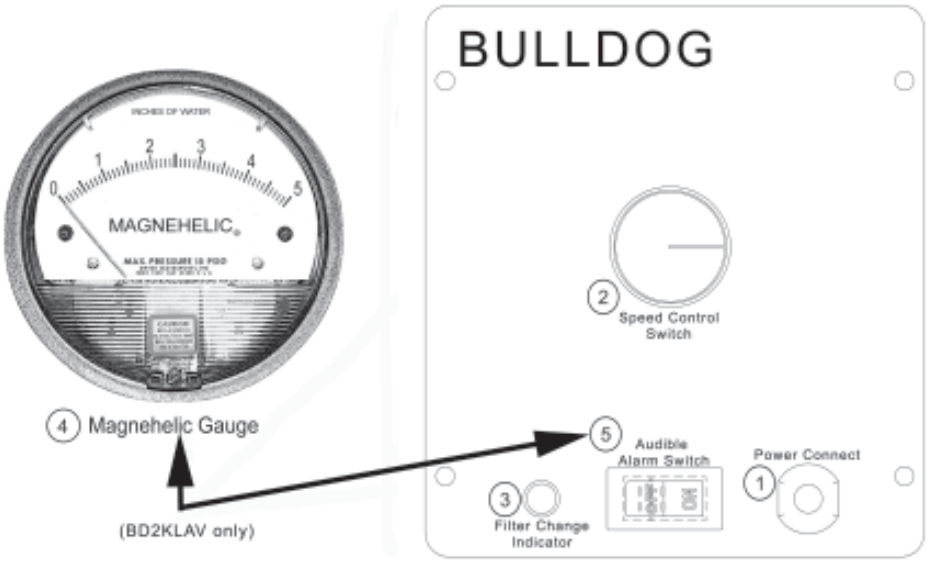
Warning: Abatement Technologies air filtration systems are not intrinsically safe for use in hazardous environments. Always consult a certified industrial hygienist before using them. Do NOT use this equipment in any atmosphere that is or may be immediately dangerous to life or health (IDLH), combustible, flammable, explosive, oxygen deficient, and/or contains odors, vapors, gases or particulates that exceed permissible exposure levels. Such atmospheres may require the use of intrinsically safe equipment, specific engineering controls, and personal protective equipment in accordance with Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), Canadian Standards Association (CSA), and other federal, state, provincial and local regulations.

Warning: This equipment is not classified as "intrinsically safe" and should not be used in the following hazardous locations as defined by the Underwriters Laboratories: Class I Division 1, Class I Division 2, Class I Zone 0, Class I Zone 1, Class I Zone 2, Class II Division 1, Class II Division 2, Class III Division 1, Class III Division 2. Refer to the UL web site: http://www.ul.com/hazloc/define.htm.

Warning: Do not use this unit near sparks, open flames or other possible sources of ignition.

CONTROL PANEL

1. **Power Cord** - Hardwired 18/3 SJTW power cord for connection to electrical outlet.
2. **Speed Control Switch** - Serves as the power switch and provides a variable adjustment to the speed of the motor.
3. **Filter Change Indicator** - Amber light that indicates excessive restriction on intake or loading of the filter(s) and that filter change procedures should be followed. Check Filter Change Indicator when the unit is operating at “HIGH” speed.
4. **Magnehelic Gauge** (BD2KLAV only) - Indicates total system differential pressure in inches of water column (WC). An increase in differential pressure indicates excessive restriction on intake or loading of the filter(s) and that filter change procedures should be followed. Check the gauge when the unit is operating at “HIGH” speed.
5. **Audible Alarm Switch** (BD2KLAV only) - Rocker-arm style switch that turns the Filter Change Audible Alarm “ON” and “OFF”.
   Filter Change Audible Alarm - not shown (BD2KLAV only) - Tone that indicates excessive restriction on intake or loading of the filter(s) and that filter change procedures should be followed.



BEFORE OPERATING THE UNIT, NOTE THE FOLLOWING:

Assemble the 4 casters to the bottom of the BD2KLV or BD2KLAV cabinet. Refer to Figure A. The casters are packed inside the unit’s cabinet. Open the pre-filter access door to gain entry to the inside of the cabinet.

Inspect and tighten any HEPA filter retaining bolts that may have loosened during transportation. Inspect the filters for any material or structural damage prior to use and replace any damaged filters before operating the unit. When removing any filters prior to operation, always put them back in place with airflow indicator on filter housing oriented in the proper direction (if applicable).

As with any air filtration system, external airflow losses not attributable to the air filtration unit will reduce the airflow of the system. The following recommendations can minimize airflow losses created by external static resistance.

1. Always use the minimum length of ducting possible with the fewest possible number of turns and bends.

2. Rigid metal ducting creates less turbulence and consequently less airflow loss than flexible ducting. Regardless of the type of ducting used, rigid, “sweep-type’, radiused connections should be used for all turns and bends.
3. If flexible ducting is used, it must be kept as taut as possible to avoid flattening.

LOCATION OF THE UNITS AND MODES OF OPERATION

1. **Negative Pressure** - used to help ensure that airborne contaminants do not escape from a contained area, by maintaining negative (lower) air pressure within that area compared to adjacent areas. This is generally accomplished by placing the unit inside the containment area and exhausting filtered air from the unit out of the area. The filtered air must be exhausted outside of the containment area, either directly to the outdoors, or into another part of the building. To maintain negative pressure, the air exhaust must exceed the air supply by the greater of 10% or 100 CFM. To achieve this differential, the air supply volume to the area may have to be reduced. Negative pressure levels should be continuously monitored.
2. **Recirculation** - used to reduce concentrations of airborne contaminants in a room or area by continuously cleaning the air and exhausting it back into the same room or area.
3. **Positive Pressure** - used to help prevent airborne contaminants from entering a containment area, by keeping that area under positive pressure compared to adjacent spaces, so any air leakage will be an outflow of clean air, and not inflow of contaminated air. This pressure differential can be established by:
    a. placing the unit inside the containment area, and using it to pull air into the area by attaching flex duct between the inlet collar and a location outside of the containment area.
    b. placing the unit outside of containment area, and using it to push HEPA-filtered air into the area through flex duct attached between the outlet collar and a location inside the area.

    To ensure that the proper pressure differential is maintained, the volume of HEPA-filtered air supplied to the area must be the greater of 10% or 100 CFM higher than the volume of air exhausted from it by the HVAC system. Positive pressure levels should be monitored continuously.

Important Note: Do not operate the unit unless the pre-filter(s) and HEPA filter are installed, and the filter access door and panel (if applicable) are in place and closed.

TO START UNIT

1. Check to make sure that the Speed Control switch is in the “OFF” position. Plug power cord into a 120 volt AC, 60Hz, 15 amp supply circuit.
2. Turn Speed Control switch clockwise past the click at the "HIGH" setting to turn power "ON".
3. Set Speed Control switch to desired setting.
   Note: Refer to the chart in this instruction manual entitled “AIRFLOW RATING” that lists the airflow for the BD2KLV and BD2KLAV.

Note: In the event of a power failure while the unit is running, or loss of power due to any other cause, this unit’s motor will re-start when power is restored.

FILTER CHANGE INDICATORS

Filter Change Indicator light “ON”, Audible Alarm tone and/or a differential pressure reading of 1.7" WC or greater on the Magnehelic Gauge, indicate one or more of the following:
1. Loaded filter(s). Refer to filter change procedures.
2. Restrictions on air intake. Refer to Troubleshooting Guide.

FILTER REPLACEMENT

Note: Personnel responsible for changing filters, servicing units or relocating units within the facility are urged to wear the proper personal protective equipment and follow safe work practices in accordance with federal, state, provincial, and employer regulations.

Note: Filters being replaced must be disposed of in accordance with federal, state, provincial, local and facility regulations.

System airflow reduction is generally the result of filter loading, blockage of the unit's inlet or use of excessive lengths of flex duct that is connected to the inlet.

The size and concentration of airborne contaminants, temperature and humidity conditions, and duration of use determine how often filters need replacement. If the Filter Change Indicator light turns "ON", the Audible Alarm sounds and/or the Magnehelic Gauge displays a reading of 1.7" WC or greater, this indicates one or more of the following: (1) pre-filter(s) are loaded, (2) the inlet is obstructed, (3) the flex duct, if attached to inlet, is too long or has too many bends, and (4) the HEPA filter is loaded.
The method of determining when to replace the optional activated carbon filter is somewhat subjective. As the odor, vapor, and/or gas filtration capacity decreases, the user will begin to sense a slight odor or taste of the contaminant, indicating that the filter should be replaced.

Note: The filters are not reusable, therefore, do not attempt to clean and reuse them.

Caution: Abatement Technologies BD2KLV and BD2KLAV Portable Air Filtration Units are designed to meet or exceed standards for high efficiency air filtration equipment. Use only Abatement Technologies parts, including replacement filters. Use of non-Abatement Technologies parts and filters voids the product warranty and all performance claims.

Warning: To reduce the risk of fire, electrical shock or personal injury, always turn the unit "OFF" and disconnect the power cord from supply receptacle before replacing the HEPA filter and before cleaning or servicing the unit.

FILTER CHANGE PROCEDURE

To Change the First Stage Filter:

1. With the unit operating, turn the latches on the pre-filter access door counterclockwise (approx ½ turn), and open the door.
2. Remove the first stage filter and replace it with a new one.
3. Close the pre-filter access door and lock it in position by turning the latches clockwise. Make sure the door is flush against the cabinet before closing latches.
4. If the Filter Change Indicator light remains "ON", the Audible Alarm continues to sound and/or the Magnehelic Gauge displays a reading of 1.7" WC or greater after changing the first stage filter, the second stage filter (if one is being used) should be replaced.

To Change the Second Stage Filter:

1. Open the pre-filter access door.
2. Remove the second stage filter and replace it with a new one.
3. Close the pre-filter access door and lock it in position.

4. If the Filter Change Indicator light remains “ON”, the Audible Alarm continues to sound and/or the Magnehelic Gauge displays a reading of 1.7" WC or greater after changing the second stage filter, the HEPA filter should be replaced.

Note: If an optional Vapor-Lock® filter is being used, be sure to remove it from its poly bag before installing it in the unit. Vapor-Lock® filters are packaged in poly bags to preserve the integrity of the carbon granules.

To Change the H242406-99 HEPA Filter

1. Turn the unit “OFF”, disconnect the unit’s power cord from the electrical outlet and open the pre-filter access door.
2. Remove the bolts that secure the HEPA filter retaining brackets in place (remove the lower bracket first, then the top bracket), set the brackets aside, and remove the HEPA filter from the cabinet.
3. Before installing a replacement H242406-99 HEPA filter, two spacer clips must be attached to the bottom left and right rear corners of the filter frame. For reference purposes, the top panel of the filter has various labels affixed to it and the rear of the filter is the gasketed end. Note the position and attachment location of the spacer clips on the original H242406-99 filter that is being replaced, and refer to Figure B. Two spacer clips are packed inside the replacement HEPA filter carton. **Important Note: The spacer clips must be attached to the H242406-99 HEPA filter frame as illustrated in Figure B; otherwise, the filter will NOT slide into the cabinet and seal properly.**
4. Carefully install a new HEPA filter inside the cabinet, gasketed end first. Slide the filter into the cabinet until it is flush against its sealing surface.
5. Re-attach the HEPA filter retaining brackets to secure the filter in its proper position. The top bracket should be re-attached first, then the bottom bracket. Do not over-tighten the bolts.
   Note: The HEPA filter is delicate and should be handled with care. When removing or re-attaching the HEPA filter retaining brackets, do not touch the filter media; otherwise, damage to the filter and leakage of contaminated air could result.
6. Close the pre-filter access door and lock it in position.

To Change the H2010 or H2010M HEPA Filter

1. Turn the unit “OFF”, disconnect the unit’s power cord from the electrical outlet and open the pre-filter access door.
2. Remove the bolts that secure the HEPA filter retaining brackets in place (remove the lower bracket first, then the top bracket), set the brackets aside, and remove the HEPA filter from the cabinet.
3. Carefully install a new HEPA filter (part# H2010 or H2010M) inside the cabinet, gasketed end first. Slide the filter into the cabinet until it is flush against its sealing surface.
4. Re-attach the HEPA filter retaining brackets to secure the filter in its proper position. The top bracket should be re-attached first, then the bottom bracket. Do not over-tighten the bolts.
   Note: The HEPA filter is delicate and should be handled with care. When removing or re-attaching the HEPA filter retaining brackets, do not touch the filter media; otherwise, damage to the filter and leakage of contaminated air could result.
5. Close the pre-filter access door and lock it in position.

Warning: Use only Abatement Technologies pre-filters, HEPA filters, and replacement parts. Substitute parts void the warranty, jeopardize worker and environmental safety, and adversely effect engineered performance levels.

SPECIFICATIONS

FEATURE	BD2KLV and BD2KLAV
Net weight w/filters:	105 lbs. w/original H242406-99 HEPA (122 lbs. with H2010 HEPA)
Shipping weight:	120 lbs. w/original H242406-99 HEPA (137 lbs. with H2010 HEPA)
Dimensions (WxDxH):	27.5"W x 30.5"D x 32"H
Power supply requirements:	120 volts AC, 60 Hz, 15 amp circuit.
Normal operating amps:	6.5 amps on highest speed and 8.0 amps on lowest speed
Motor:	0.90 HP motor with thermal overload protection, auto re-set, 60 Hz, single phase
Operational sound level:	72 dBA at 5' on HIGH speed
Cabinet material:	UL94HB flame retardant resin
Transportability:	2 each 4", 360° swivel casters with locking feature 2 each 4", fixed position casters
Pre-filter access:	Easy-operating hinged door is secured by 2 rotating latches to protect against filter by-pass.
First stage pre-filter:	1" coarse particulate ring panel-style pre-filter (H2003)
Optional pre-filter:	2" particulate pleated pre-filter (H2002), 2" high capacity carbon filter (VL2024)
Original HEPA filter:	Tested and certified to an efficiency of 99.97% or higher against 0.3 micron size particles (H242406-99)
Optional HEPA filter:	Tested and certified to an efficiency of 99.97% or higher against 0.3 micron size particles (H2010 or H2010M)

Note: Specifications subject to change without notice.

AIRFLOW RATINGS

	Highest Speed	Lowest Speed
BD2KLV and BLD2LVA	1,800 CFM	600 CFM

Note: Airflow ratings estimates are inlet airflows based on factory and independent testing @ 120 VAC with an air straightener and a traverse of readings taken with a computing vane-anemometer. Actual results may vary for various reasons, including motor and blower and HEPA filter tolerances. Factors such as filter loading, reduced voltage to the motor, and inlet and outlet ducting will reduce airflow. Use these ratings as a general guideline only.

TROUBLESHOOTING GUIDE

PROBLEM	POSSIBLE CAUSE	SOLUTION
NO RESPONSE WHEN THE POWER IS TURNED "ON".	POWER CORD UNPLUGGED.	PLUG POWER CORD FIRMLY INTO ELECTRICAL OUTLET IN WALL.
	DEFECTIVE POWER CORD.	CHECK ALL CONNECTIONS AND CONDITION OF ALL CORDS. DO NOT OPERATE WITH DAMAGED POWER CORD(S).
	TRIPPED CIRCUIT BREAKER.	RESET BREAKER FOR BUILDING.
	TRIPPED GOUND FAULT CIRCUIT INTERRUPTER.	RESET GFCI AT POWER SOURCE.
	THERMAL OVERLOAD ON THE MOTOR HAS TRIPPED.	TURN UNIT "OFF", WAIT 30 MINUTES AND RESTART UNIT.
CIRCUIT BREAKER FOR BUILDING "TRIPS".	OVERLOADED CIRCUIT.	REMOVE OTHER LOADS FROM CIRCUIT. RESET CIRCUIT BREAKER.
UNIT RUMBLES WHEN ATTEMPTING TO START.	LOW VOLTAGE OR LIMITED AMPREAGE IS SUPPLIED.	CHECK POWER SUPPLY. FOR MAXIMUM PERFORMANCE, THE UNIT REQUIRES A 120 VOLT 15 AMP CIRCUIT THAT IS LOAD FREE.
	EXTENSION CORD IS TOO LONG OR OF TOO HIGH GAUGE.	EXTENSION CORD(S) SHOULD NOT EXCEED A TOTAL OF 50 FT IN LENGTH. USE GROUNDED 3-WIRE 12 GAUGE CORD(S).
	OTHER MACHINES OR LOADS ON SAME CORD OR CIRCUIT.	REMOVE OTHER LOADS FROM SAME CIRCUIT.
FILTER CHANGE INDICATOR "ON", READING OF 2.0" WC OR GREATER ON MAGNEHELIC GAUGE OR AUDIBLE ALARM SOUNDS.	LOADED FILTERS.	CHANGE IN ACCORDANCE WITH OPERATING INSTRUCTIONS.
	EXCESSIVE RESTRICTIONS ON INTAKE.	REDUCE BENDS, LENGTH OF FLEX DUCT OR ELIMINATE RESTRICTIONS.
	CARBON FILTER HAS NOT BEEN REMOVED FROM POLYBAG.	REMOVE CARBON FILTER FROM POLYBAG.

Note: If the unit does not start or malfunctions after carefully following the **Trouble Shooting Guide,** call Abatement Technologies at 800-634-9091 for assistance.

COMPONENT REPLACEMENT

Warning: To reduce the risk of fire, electrical shock or personal injury, always turn the unit “OFF” and disconnect it from the power source before removing the control panel, replacing the HEPA filter, or servicing the unit. The BD2KLV and BD2KLAV are equipped with an automatic restart motorized impeller that may restart without warning. Keep clear of the motorized impeller at all times.

Occasionally a defective component will cause the unit to operate improperly or not at all. Any electrical component can fail. Refer to the Wiring Diagrams and Wiring Schematics to diagnose the failure of any component. Diagnostics should only be performed by a technician qualified to service electrical equipment.

CARE OF THE UNIT

The unit is plastic and should be cleaned with a damp cloth or a water-based cleaner/sanitizer. Do not use harsh chemicals, solvents or detergents to clean the unit.

Warning: Keep electrical components dry as their exposure to liquids poses a safety hazard and can damage components.

CERTIFICATION OF ROOM AIR FILTRATION UNITS

The Abatement Technologies room air filtration units have been tested by Intertek Testing Services (ITS) and are ETL and ETLC (Canada) listed for electrical safety.

ITS is accredited by the U.S. Occupational Safety and Health Administration (OSHA) as a Nationally Recognized Testing Laboratory (NRTL).

LIMITED WARRANTY

Abatement Technologies, Inc (ATI) warrants that goods sold to the original user shall be free from defects in material and workmanship for a period of 1 year, except such as are commercially acceptable. This warranty does not include useful filter life. The plastic cabinet has a lifetime warranty period for the original user. **ATI does not warrant that the goods sold are merchantable or fit for any particular purpose. ATI makes no warranties other than as stated in this paragraph. All other warranties, guaranties, or representations, express or implied, by operation of law or otherwise, are expressly disclaimed.** Goods found by ATI to be defective or not to conform to specification shall upon return be replaced or repaired by ATI without any additional charges, or, at ATI's option, ATI may refund the purchase price of such goods. ATI will pay return transportation charges on returned goods not exceeding the transportation charges applicable to shipment from original destination unless the returned goods are free from defect and conform to specifications. Returned goods which are found by ATI to be free from defect and to conform to specifications shall be held for Purchaser's shipping instructions, which instructions Purchaser shall furnish promptly upon request. **ATI's liability shall in no event extend beyond replacement, repair or refund of the purchase price and ATI shall not be liable under any circumstances for special, contingent or consequential damages, nor for loss, damages, or expenses directly or indirectly arising from the use of the goods, including without limitation, warehousing, labor, handling and service charges, die, equipment, or machine breakage, nor for costs, lost profits or loss of good will. The use of substitute, non-ATI parts and/or filters, in any ATI product, voids all warranties and performance claims. The remedies set forth herein are exclusive**.

For warranty information and assistance contact Abatement Technologies' Customer Service Department at 800-634-9091 (U.S.) or 905-871-4720 (Canada.)

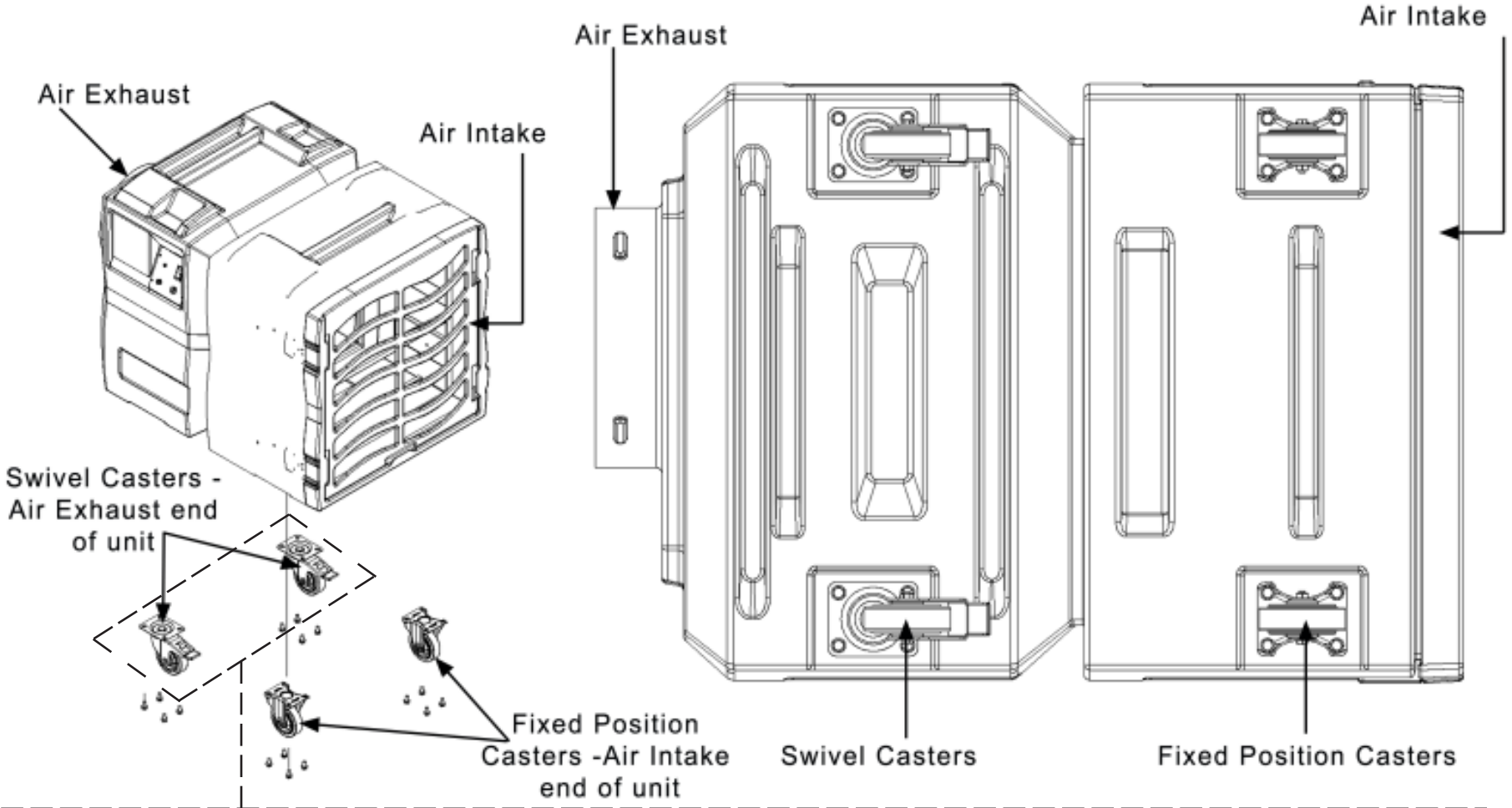
Abatement Technologies' BD2KLV and BD2KLAV high-efficiency air filtration units are originally equipped with true HEPA (High Efficiency Particulate Air) filters designed to maximize the performance of the equipment, and to meet the following industry standards:

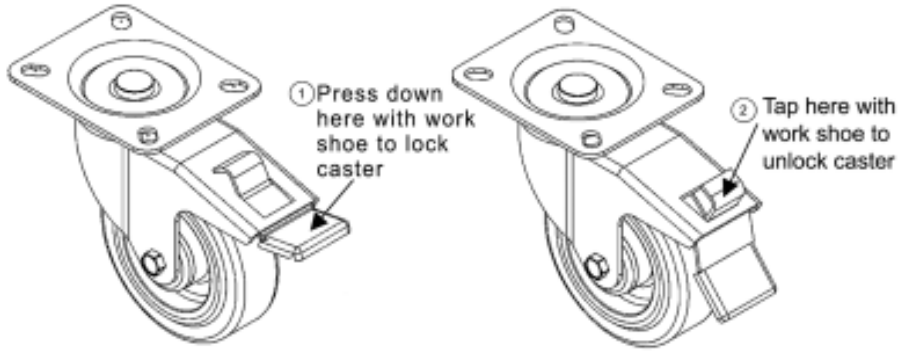
Institute of Environment Sciences and Technology
IEST-RP-CC001.3 (Type A HEPA and ULPA Filters)
IEST-RP-CC021.1 (Testing HEPA and ULPA Filter Media)

Underwriters Laboratories
UL900, Class II (Flammability Specifications)

100% Efficiency Tested
Abatement Technologies HEPA filters are individually tested and certified to ensure that the completed filter provides an overall minimum efficiency of 99.97% when challenged by a thermally generated test aerosol, 0.3-microns in size, in accordance with IEST-RP-CC001.3.

Figure A: Caster Assembly and Operation



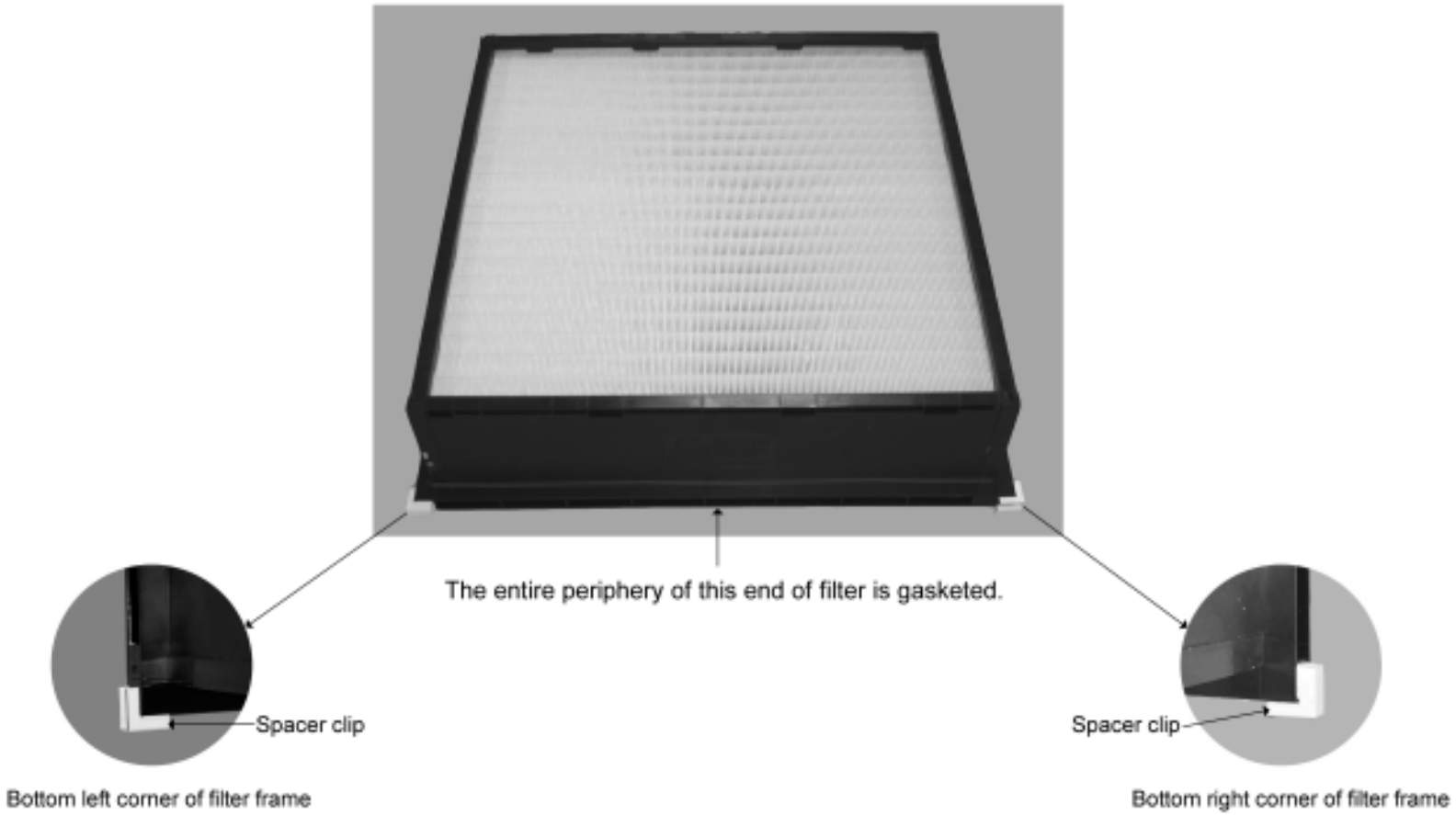


1. Press down on caster flange with work shoe until flange locks in downward position. Once locked, the caster will not roll or swivel.
2. Tap with work shoe to release caster from locked position.

Warning: Pinch Hazard! Do not use hands or fingers to lock or unlock this swivel caster or personal injuries such as severe pinching or cuts could result. Use work shoe to lock and unlock caster.

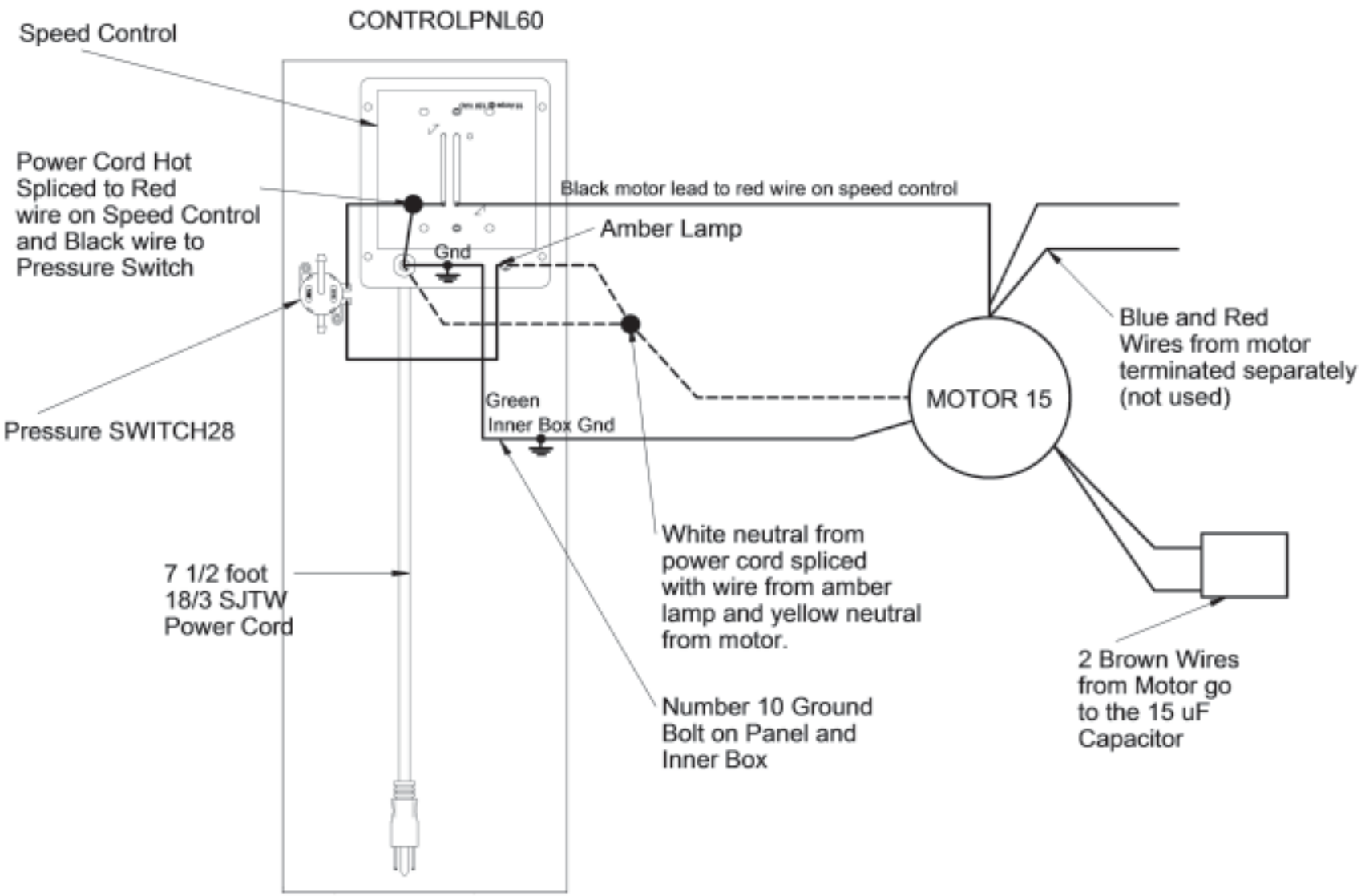
Figure B - Attachment of Spacer Clips to H242406-99 HEPA Filter

Before installing a replacement H242406-99 HEPA filter, two spacer clips must be attached to the bottom left and right rear corners of the filter frame as illustrated below. For reference purposes, the top panel of the filter has various labels affixed to it and the rear of the filter is the gasketed end. Note the position and attachment location of the spacer clips on the original H242406-99 filter that is being replaced. Two spacer clips are packaged inside the replacement HEPA filter carton. **Please note the position and attachment location of the clips.**

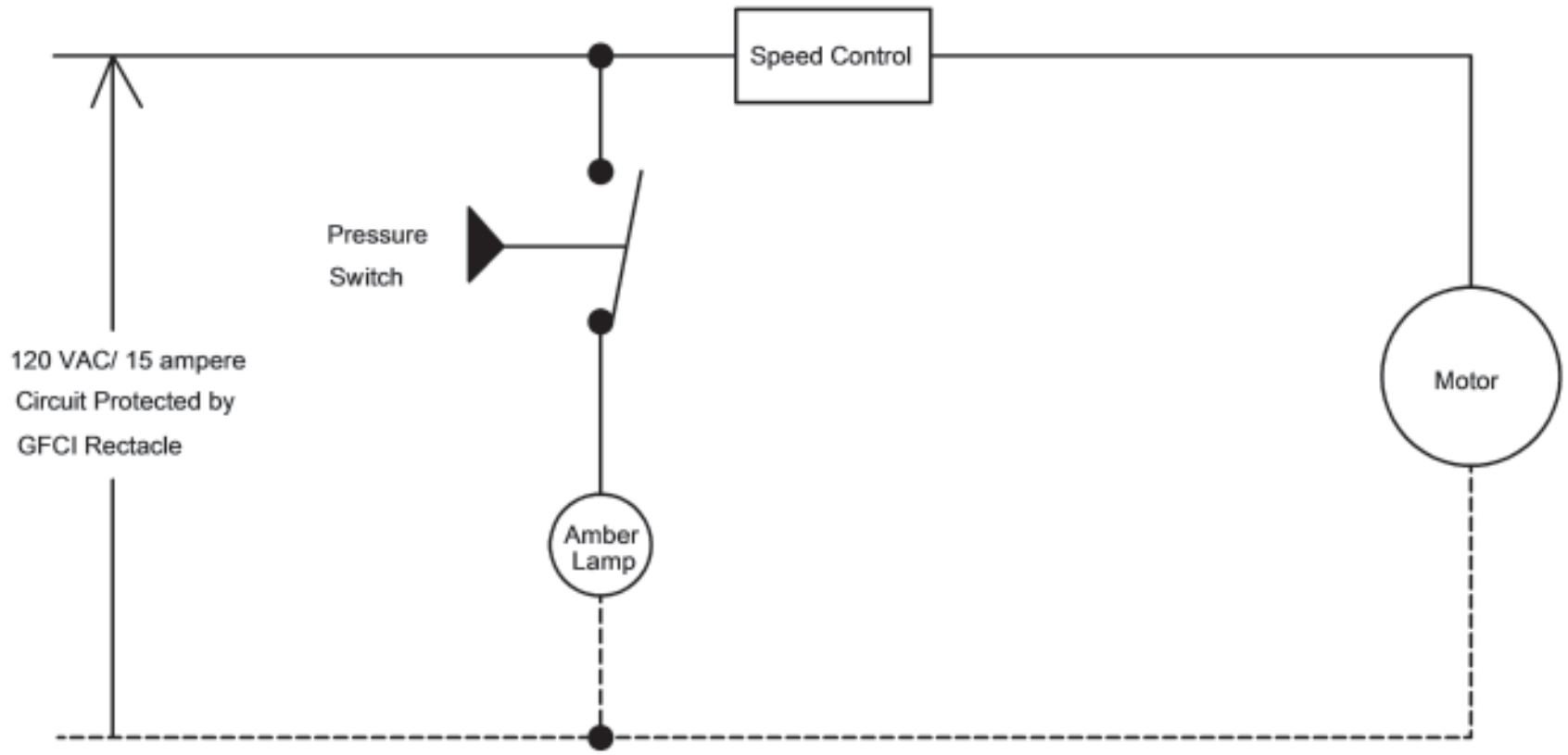


Important Note: The spacer clips must be attached to the H242406-99 HEPA filter frame as illustrated; otherwise, the HEPA filter will NOT slide into cabinet and seal properly.

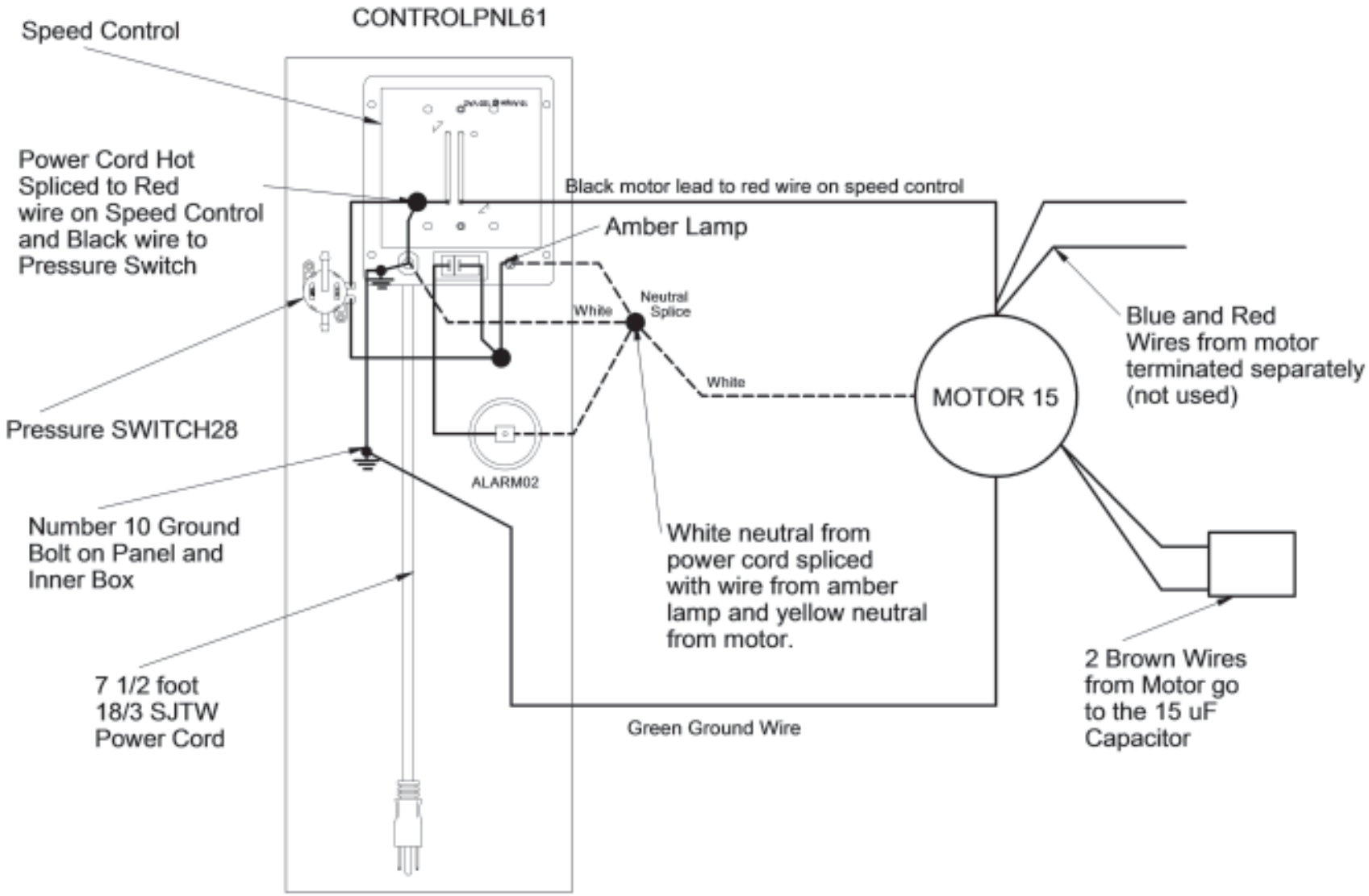
BD2KL Wiring Diagram



BD2KLV Wiring Schematic



BK2KLAV Wiring Diagram



BD2KLAV Wiring Schematic