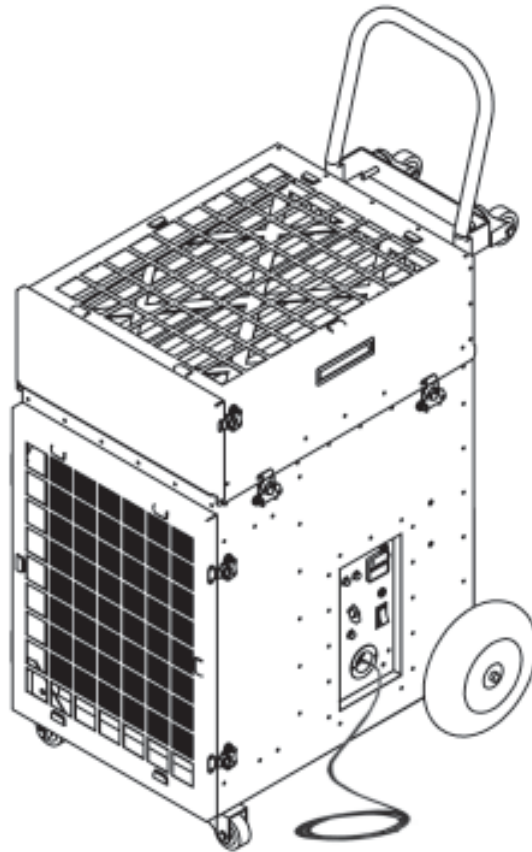


## HEPA-AIRE® PORTABLE AIR SCRUBBER - PAS2400

### INSTRUCTION MANUAL

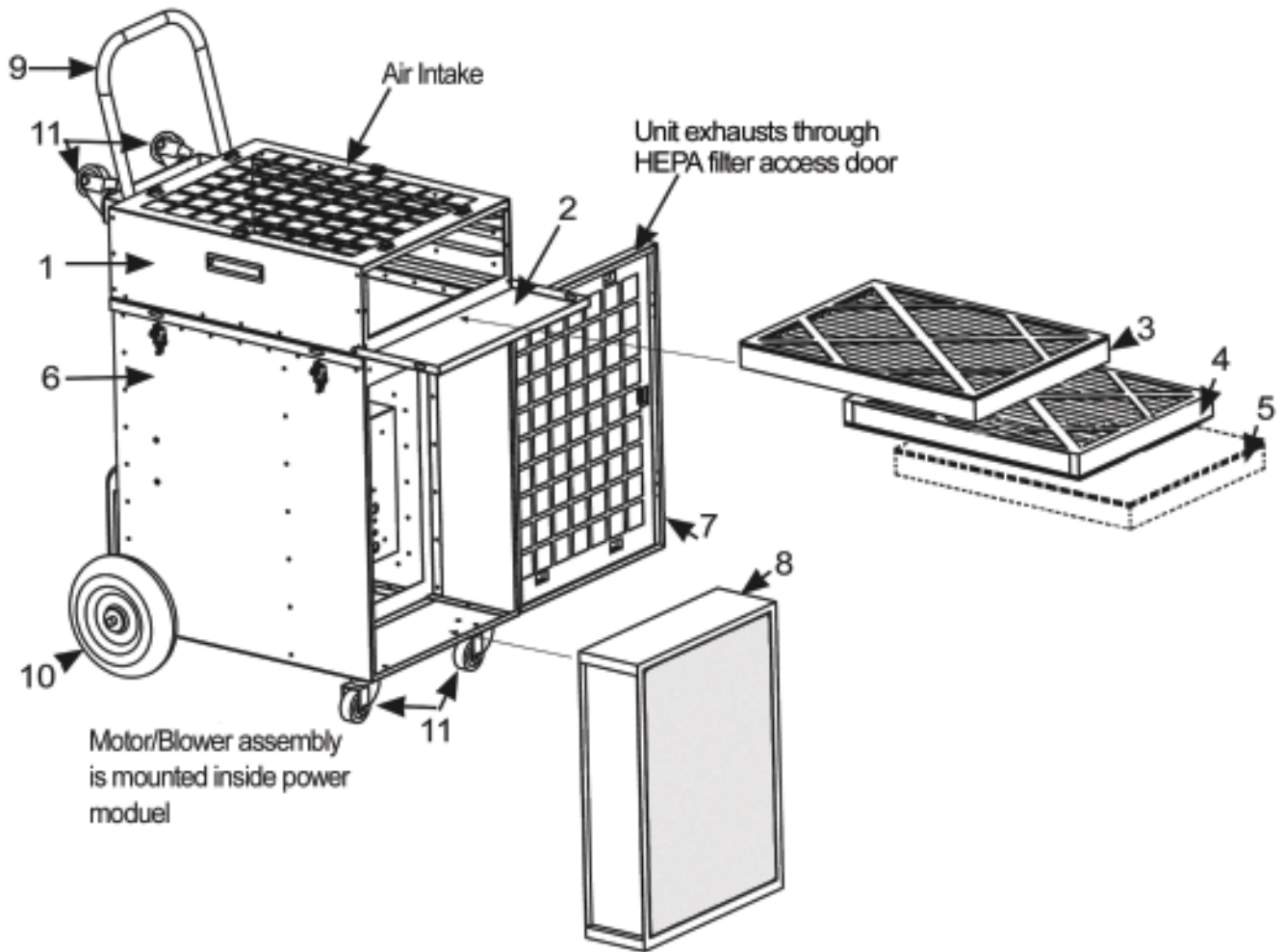


**Abatement Technologies, Inc./Remediation Products Division**

**Abatement Technologies, Inc.**  
Georgia, USA  
800-634-9091

**Abatement Technologies Ltd.**  
Ontario, Canada  
905-871-4720

# HEPA-AIRE® PORTABLE AIR SCRUBBER PAS2400



1. Inlet Module

2. Pre-filter Access Door

3. First Stage 1" Coarse/Particulate Pre-filter (P/N F1821)

4. Second Stage 2" Pleated Filter (P/N H1902). The H1902 may be substituted with an optional 2" High Capacity Carbon Filter (P/N VL2002).

5. Optional Third Stage 2" High Capacity Carbon Filter (P/N VL2002).

6. Power Module

7. HEPA Filter Access Door

8. Final Stage 99.97% HEPA Filter (P/N H2418-99)

9. Transport Dolly with Stair Climber Assembly and 1 3/4", 360° Swivel Casters

10. 10" Rear Wheels

11. 360° Swivel Casters

**HEPA-AIRE® Portable Air Scrubber**  
**Model: PAS2400**  
**Instruction Manual**

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**READ AND SAVE THESE INSTRUCTIONS!**

- Note:** 1. Read and understand all operating instructions before using the PAS2400 Portable Air Scrubber  
2. Save this manual for future reference.

This instruction manual provides important information on the use of the HEPA-AIRE® Portable Air Scrubber (PAS) - model PAS2400. These instructions must be carefully followed in order to operate the unit safely and correctly. If there are any questions regarding the use of the unit, 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.

**GENERAL INFORMATION**

The PAS2400 is a multi-use air filtration device, equipped with pre-filters 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         | • Lung-damaging particles | • Low concentrations of OVG                              |
| • Dust         | • Metal fumes             | • Low concentrations of Volatile Organic Compounds (VOC) |
| • Drywall dust | • Smoke                   | • Unpleasant nuisance odors                              |
| • Saw dust     | • Molds and fungal spores |  |

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

The PAS2400 is capable of providing particulate and odor, vapor, gas filtration with final stage filtration through a High Efficiency Particulate Air (HEPA) filter. The unit incorporates a series of particulate filters that successively remove larger size to smaller size particles from the air. In addition to providing HEPA filtration, the PAS2400 is 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.

The PAS2400 consists of an inlet module and power module that lock together with rotating latches. The inlet module houses the pre-filters and the power module houses the HEPA filter, control panel, motor and blower, and is attached to the transport dolly.

**Standard Air Cleaning Stages (filters supplied with the unit)**

The PAS2400 comes equipped with two progressively efficient particulate pre-filters mounted in the pre-filter compartment, and a final stage HEPA filter, located in the power module:

- The first-stage 2"-deep, coarse particulate pre-filter (F1821) is designed to capture particles 100 microns or larger.
- The second-stage 2"-deep, pleated particulate pre-filter (H1902) is designed to capture particles 10 microns or larger
- The HEPA filter (H2418-99) is tested & certified to capture at least 99.97% (9,997 out of 10,000) of 0.3-micron particles.

Note: The particulate filters in the PAS2400 do **not** remove odors, vapors or gases, including volatile organic compounds.

### **Optional Filters (must be purchased separately)**

Vapor-Lock® pleated, high-capacity, carbon filters (part # VL2002) are available for capturing OVG. This 2"-deep filter can be used as an optional second or third-stage pre-filter, 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 VL2002 filter is also designed to capture particles 10 microns or larger in size.

Effective carbon adsorption is dependent upon the amount of carbon & exposed carbon granule surfaces, and the dwell (contact) time the OVG molecules have with the carbon granules. Operating the unit at low speed 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 “Links and Articles Page” in the Mold Abatement, Restoration & Renovation section of the Abatement Technologies website, [www.abatement.com](http://www.abatement.com).

### **TO DETERMINE THE REQUIRED NUMBER OF UNITS**

Note: The Mold Abatement, Restoration & Renovation section of the Abatement Technologies website, [www.abatement.com](http://www.abatement.com), includes a handy Air Change Calculator for all PAS 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 2,100 CFM units are needed to provide at least 6 ACH in a 30' x 40' x 10' containment area, with a 20% safety factor?

$$V = 30 \times 40 \times 10 = 12,000 \text{ Cubic Feet}$$

$$\text{Total CFM} = (12,000 \times 6 \times 1.2) \div 60 = 1,440 \text{ CFM}$$

$$\text{Minimum \# Units Req'd} = 1,440 \text{ CFM} \div 2,100 \text{ CFM (airflow of unit)} = 0.7 = \underline{\mathbf{1 \text{ Unit Required}}}$$

**Example 2:**

How many 2,100 CFM units are needed to provide at least 5 ACH in a 50' x 45' x 10' containment area, with a 25% safety factor?

$$V = 50 \times 45 \times 10 = 22,500 \text{ Cubic Feet}$$

$$\text{Total CFM} = (22,500 \times 5 \times 1.25) \div 60 = 2,344 \text{ CFM}$$

$$\text{Minimum \# Units Req'd} = 2,344 \div 2,100 = 1.12 = \underline{\mathbf{2 \text{ Units Required}}}$$

Note: This example illustrates the importance of a Safety Factor. If no SF were used, only 1,875 CFM (1 unit) would be required.

**PAS2400 TRANSPORT**

**Note:** The PAS2400 can be transported in the vertical or 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.

This unit is mounted to a transport dolly that is equipped with a stair climber and 360° swivel casters. The transport dolly makes it easier to load and unload the unit from service vehicles and bring it up and down staircases.

**Caution:** Always use caution when moving the PAS2400 inside a building or home. The unit weighs 170 pounds. Older structures with weakened floors or staircases may require separation of the inlet and power modules or other special considerations for safe transport. To facilitate transport of the PAS2400 to and from the project site, the inlet and power modules can be separated; the inlet module weighs 25 pounds and the power module weighs 145 pounds.

**ELECTRICAL REQUIREMENTS**

1. The PAS2400 requires a minimum of 110 volts, 60 Hz to operate properly; however, maximum airflow performance requires 120 volts AC, 60 Hz.
2. Due to momentary start-up current surge, the unit requires 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 PAS2400 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 PAS2400 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 PAS2400 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 PAS2400 electrical system and power cord, do not connect or disconnect the power cord to an electrical outlet unless the unit's main power switch 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 PAS2400 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 the unit "OFF" and disconnect power cord from supply receptacle before separating the inlet and power modules, replacing the HEPA filter and before cleaning or servicing the unit.**

**Warning: The PAS2400 is 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 PAS2400 with any solid state speed control device. Do not use in a cooking area.**

**Warning:** Do not connect the unit's power cord to supply receptacle unless the inlet and power modules are in their proper position and latched together.

**Caution:** The PAS2400 is 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.

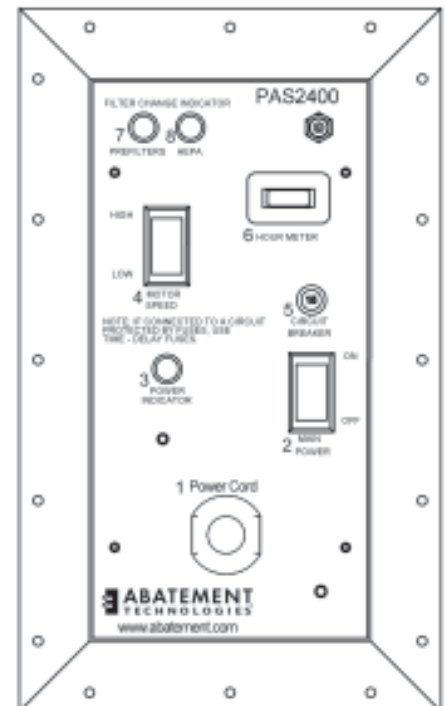
**Warning:** This equipment is not classified as "intrinsically safe" and should not be used in the following hazardous locations as defined by the Underwriters Laboratories: Class I Division 1, Class I Division 2, Class I Zone 0, Class I Zone 1, Class I Zone 2, Class II Division 1, Class II Division 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.

#### PAS2400 CONTROL PANEL

1. **Power Cord** - Hardwired, 10' power cord for connection to electrical outlet.
2. **Main Power Switch** - The main power "ON/OFF" switch.
3. **Power Indicator** - Green light that indicates main power switch is "ON" and unit is connected to power source.
4. **Motor Speed Switch** - Rocker-arm style switch that sets the motor to "HIGH" or "LOW" speed.
5. **Circuit Breaker** - 15 amp circuit breaker that provides protection for unit's electrical components.
6. **Hour Meter** - Provides a count of the total operating hours.
7. **Filter Change Indicator - Pre-filters** - Amber light that indicates excessive restriction on air intake or loading of the pre-filter(s) and that filter change procedures should be followed.
8. **Filter Change Indicator - HEPA** - Amber light that indicates excessive restriction on air exhaust or loading of the HEPA filter and that filter change procedures should be followed.

**Note:** Check the filter loading indicators when the when the unit is operating on "HIGH" speed.



#### BEFORE OPERATING THE UNIT, CHECK THE FOLLOWING:

Check to ensure that: (a) the inlet module is resting flush on top of the power module, and (b) the two modules are locked together with the rotating latches. The power module has four rotating latches that fit into four oval-shaped openings in the inlet module. To lock or release the latches, flip the metal tab on the latch "UP" then turn the tab clockwise to lock or counter-clockwise to release the latch.

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: (a) the inlet and power modules are in their proper position and latched together, (b) the pre-filters and HEPA filter are installed, and (c) the filter access doors are closed and locked in position.**

## **TO START UNIT**

1. Check to make sure that the Main Power switch is in the "OFF" position. Plug the power cord into a 120 volt AC, 60 Hz, 15 amp supply circuit.
2. Turn Main Power Switch to the "ON" position. The green Power Indicator will illuminate indicating that the main power switch is "ON" and the unit is connected to power source.



3. Set Motor Speed switch to “HIGH” or “LOW” speed.

Note: When the Motor Speed switch is set to “HIGH” speed, there is a 7 second delay before motor starts.

Note: Refer to the chart in this instruction manual entitled: “AIRFLOW RATINGS” that lists the airflows corresponding to the speeds for the PAS2400.

**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, after a brief delay.**

## **FILTER CHANGE INDICATORS**

“Pre-filters” light “ON” indicates one or more of the following:

1. Loaded pre-filter(s). Refer to filter change procedures.
2. Restrictions on air intake. Refer to Troubleshooting Guide.

“HEPA” light “ON” indicates the following:

1. Loaded HEPA filter. Refer to filter change procedures.
2. Restrictions on air exhaust. 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(s) on the control panel illuminates, this indicates one or more of the following: (1) pre-filter(s) are loaded, (2) the inlet is obstructed, (3) the exhaust is obstructed, (4) the flex duct, if attached to inlet or exhaust, is too long or has too many bends, and (5) 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 PAS2400 Portable Air Scrubber 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 PAS2400 “OFF” and disconnect the power cord from supply receptacle before separating the inlet and power modules, 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 counter-clockwise and open the door.
2. Remove the first stage filter and replace it with a new one.
3. Close the door, make sure it is flush against the cabinet and lock it in position.
4. If the filter change indicator for the pre-filters remains "ON" after changing the first stage filter, the second stage filter 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 door and lock it in position.
4. If the filter change indicator for the pre-filters remains "ON" after changing the second stage filter, the third stage filter (if one is being used) should be replaced.

### **To Change the Optional Third Stage Filter:**

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

**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 HEPA Filter:**

1. Turn the unit "OFF" and disconnect the power cord from the electrical outlet.
2. Rotate the latches on the HEPA filter access door counter-clockwise to release them and open the door.
3. Using a 1/2" wrench, loosen the HEPA filter retaining bolts and remove the corner brackets and metal discs.
4. Remove the filter from the power module using the handles attached to the sides of the HEPA filter.
5. Carefully install a new HEPA filter (part# H2418-99) inside the power module, gasketed-end first, until it is flush against its sealing surface. Note: The HEPA filter is delicate and should be handled with care.
6. Place the metal discs and corner brackets back into position and tighten the retaining bolts. Do not over-tighten the HEPA filter retaining bolts. Over-tightening the bolts could damage the HEPA filter frame and/or the mounting frame in the power module.
8. Close the HEPA 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.**

## PAS2400 SPECIFICATIONS

FEATURE	PAS2400
Net weight w/filters:	170 lbs. Inlet module = 25 lbs; power module = 145 lbs
Shipping weight:	192 lbs
Dimensions (LxWxH):	31 1/2"L x 25 1/4"W x 49 3/4"H
Power supply requirements:	120 volts AC, 60Hz, 15 amp circuit
Normal operating amps:	12 amps or less
Motor:	1.5 HP with thermal overload protection, auto re-set, 60 Hz single phase.
Automatic restart:	Motor will automatically restart itself after temporary power interruption or recovery from a thermal overload (overheating) condition.
Operating flow rate (with clean filters):	700 - Low Speed 2,100 - High Speed
Operational sound level:	71 - 83 dBA, reading taken at 5 feet
Cabinet material:	20 gauge stainless steel, assembled with solid rivets. Critical seams are gasketed.
Transportability:	2 each 10" rubber wheels in rear and 2 ea. 360° swivel casters in front. Unit is mounted to a transport dolly equipped with a stair climber and 360° swivel casters on handle.
Pre-filter and HEPA filter access:	Hinged access doors secured by rotating latches.
First stage pre-filter:	2" coarse particulate pre-filter (F1821)
Second stage pre-filter:	2" pleated particulate pre-filter (H1902)
Optional 2nd or 3rd stage pre- filter:	2" high capacity carbon filter (VL2002)
HEPA filter:	Tested and certified to an efficiency of 99.97% or higher against 0.3 micron size particles (H2418-99)

Note: Specifications subject to change without notice.

### AIRFLOW RATINGS

	Low Speed	High Speed
PAS2400	700 CFM	2,100 CFM

Note: Airflow ratings estimates are 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 MAIN POWER AND MOTOR SPEED SWITCHES ARE 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 GROUND FAULT CIRCUIT INTERRUPTER.	RESET GFCI AT POWER SOURCE.
	THERMAL OVERLOAD ON THE MOTOR HAS TRIPPED.	TURN UNIT "OFF", WAIT 30 MINUTES AND RESTART UNIT.
UNIT RUMBLES WHEN ATTEMPTING TO START.	LOW VOLTAGE OR LIMITED AMPERAGE 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 A 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 CIRCUIT.	REMOVE OTHER LOADS FROM SAME CIRCUIT.
FILTER CHANGE INDICATOR(S) "ON"	LOADED FILTERS.	CHANGE IN ACCORDANCE WITH INSTRUCTION MANUAL.
	EXCESSIVE RESTRICTIONS ON INTAKE OR EXHAUST.	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 Troubleshooting Guide, call Abatement Technologies' Service Department at 800-634-9091 (US) or 905-871-4720 (Canada) for assistance.**

### COMPONENT REPLACEMENT AND CARE OF UNIT

**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 separating the inlet and power modules, removing the control panel, replacing the HEPA filter, and before cleaning or servicing the unit. The PAS2400 is 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.**

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.

The unit 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.