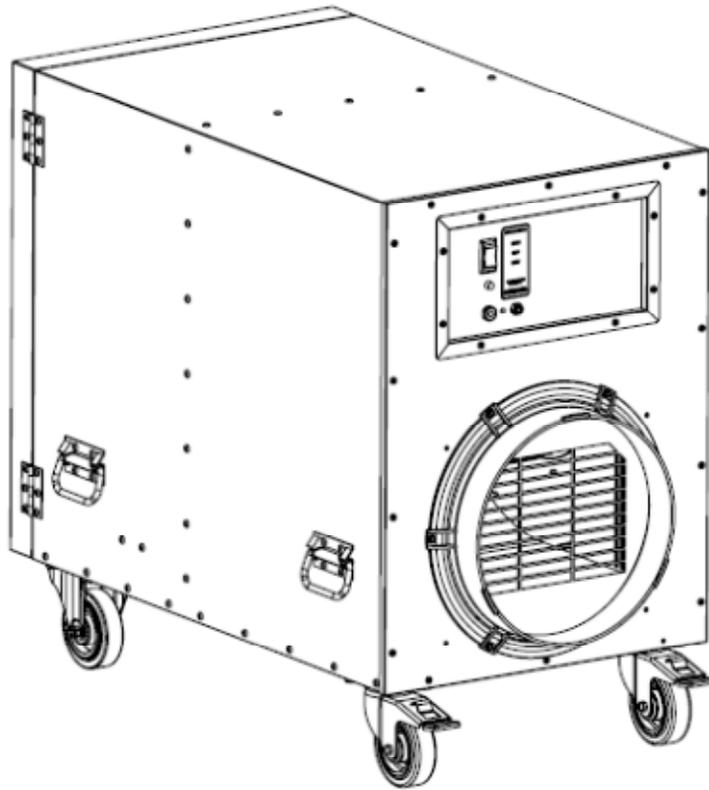




HEPA-AIRE H1990M

INSTRUCTION MANUAL



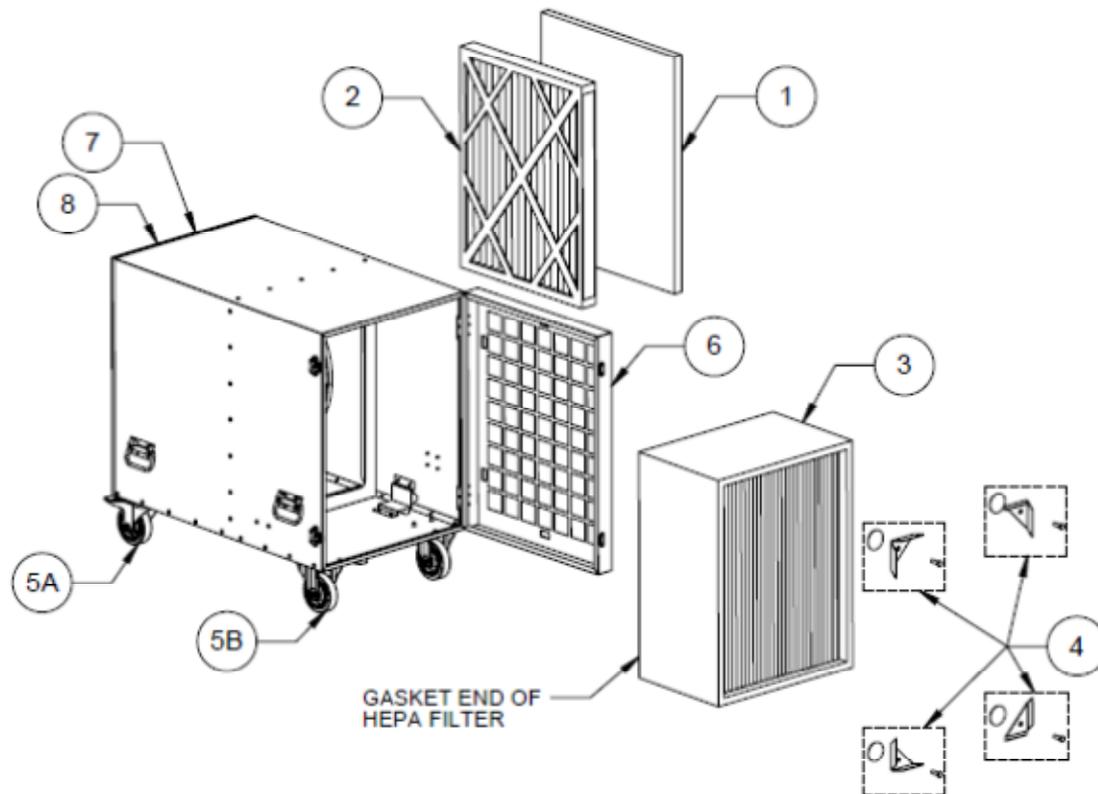
Abatement Technologies, Inc./Asbestos Abatement Division

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www.abatement.com

HEPA-AIRE Portable Air Filtration Unit Model: H1990M



1. First Stage Filter

- 1" coarse particulate polypad pre-filter (P/N H1901)

2. Second Stage Filter

- Standard: 2" pleated particulate pre-filter (P/N H1902)
- Optional: 2" high capacity VAPOR-LOCK® carbon filter (P/N VL2002)

3. Final Stage - 11 1/2", 99.97% HEPA filter (P/N H1910M)

4. HEPA filter corner brackets, metal discs and retaining bolts

5. Casters:

- A. 2 each 4" fixed position casters
- B. 2 each 4" 360° swivel casters with locking feature

6. Filter access door

7. Control panel - on rear panel of unit

8. Exhaust outlet 12" diameter - on rear panel of unit

**HEPA-AIRE® Portable Air Filtration Unit
Model: H1990M
Instruction Manual**

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READ AND SAVE THESE INSTRUCTIONS!

- Note: 1. Read and understand all operating instructions before using the H1990M Portable Air Filtration Unit.**
2. Save this manual for future reference.

This instruction manual provides important information on the use of the HEPA-AIRE Portable Air Filtration Unit - model H1990M. 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.

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 H1990M is a multi-use air filtration machine, 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 H1990M 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 which successively remove larger size to smaller size particles from the air. In addition to providing HEPA filtration, the H1990M 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.

Standard Air Cleaning Stages (filters supplied with the unit)

The H1990M comes equipped with three progressively efficient particulate filters. The first and second stage filters mount in the pre-filter access door channel and the final stage HEPA filter is located inside the cabinet:

- First stage: 1" coarse particulate poly-pad (H1901) is designed to capture particles 100 microns or larger.
- Second stage: 2" deep, pleated pre-filter (H1902) is designed to capture up to 85% of particles 3-10 microns or larger.
- Final stage: 11½" deep, fiberboard frame HEPA filter (H1910M) is tested & certified to capture at least 99.97% (9,997 out of 10,000) 0.3-micron particles.

Note: The particulate filters in the H1990M do **not** remove odors, vapors or gases, including volatile organic compounds.

Optional Filters (must be purchased separately)

There is an optional second stage filter that can be used in the H1990M:

- 2" deep, Vapor-Lock® pleated high-capacity carbon filter (VL2002) for capturing OVG and particles 10 microns or larger.

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.

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 Abatement Technologies website, www.abatement.com.

HOW TO DETERMINE THE REQUIRED NUMBER OF AIR FILTRATION DEVICES (AFD)

1. Calculate the total air volume (V) in cubic feet (ft³) within the enclosed containment area by multiplying the length (L) x the width (W) x the height (H), all in feet ($V = L \times W \times H$).
2. Determine the minimum number of air changes per hour (ACH) specification. When no ACH number is specified, most users target at least 6 ACH for construction areas. Building in a safety factor to compensate for filter loading, duct losses, reduced voltage and other factors that can reduce actual installed airflow is a good practice. For example, if 6 ACH is the objective, you might design for 8 ACH.
3. Select an Abatement Technologies air filtration device (AFD) model and determine the peak airflow rating for that model in cubic feet per minute (CFM).
4. Determine the total number of AFD required using the following formula:
Quantity = $(V \times \text{Design ACH}) / (\text{AFD Rating} \times 60)$

5. Always round up to the next whole number. For example, if the total number of AFD required is 2.13, 3 units are recommended, not 2.

Example: How many air filtration devices (each with 600 CFM rated airflow) would be required to provide 8 ACH (including a safety factor) in a 40ft L x 24ft W x 10ft H containment area?

1. $V = 40\text{ft} \times 24\text{ft} \times 10\text{ft} = 9,600\text{ft}^3$
2. Design ACH = 8
3. Quantity of AFD required = $(9,600\text{ft}^3 \times 8 \text{ ACH}) / (600 \text{ CFM} \times 60) = 76,800/36,000 = 2.13 = 3 \text{ units}$

H1990M TRANSPORT

Note: The H1990M 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 H1990M inside a building or home. The unit weighs 125 pounds. Older structures with weakened floors or staircases may require special considerations for safe transport.

ELECTRICAL REQUIREMENTS

1. The H1990M unit requires 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 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 H1990M must be UL-listed, heavy duty No. 12/3 AWG SJTW 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 H1990M 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 H1990M 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 H1990M electrical system and power cord, do not connect or disconnect the power cord to an electrical outlet unless the motor is "OFF" (middle position of Motor Speed Switch).

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 H1990M 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 H1990M 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 H1990M with any solid state speed control device. Do not use in a cooking area.

Caution: The H1990M 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.

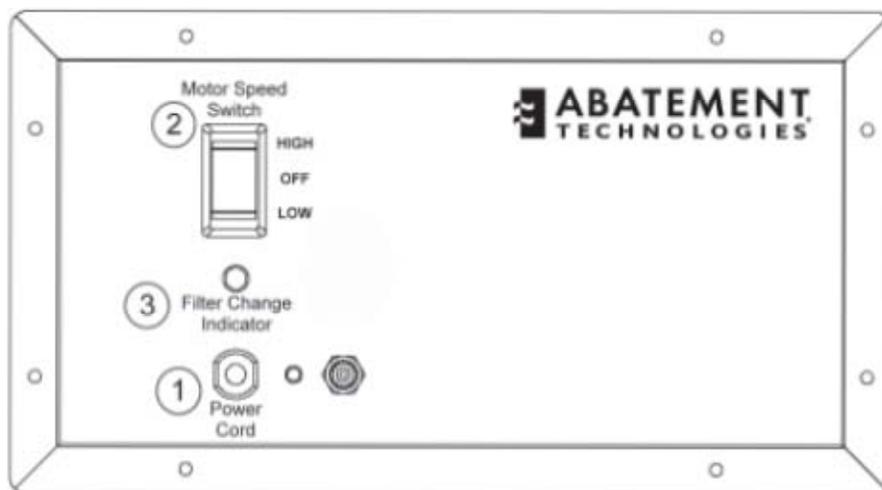
Warning: This equipment is not classified as “intrinsically safe” and should not be used in the following hazardous locations as defined by the Underwriters Laboratories: Class I Division 1, Class I Division 2, Class I Zone 0, Class I Zone 1, Class I Zone 2, Class II

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.

CONTROL PANEL COMPONENTS

1. **Power Cord** - Hardwired, 8 ft 18/3 AWG SJTW power cord for connection to electrical outlet.
2. **Motor Speed Switch** - Three position switch, "HIGH", "OFF" (middle position of switch), and "LOW", that controls 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 the Filter Loading Indicator when the unit is operating on "HIGH" speed.



BEFORE OPERATING THE UNIT, NOTE THE FOLLOWING:

Units should be secured in place in the location of use using the locking casters (2) mounted on the bottom of the unit.

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 the swivel caster or personal injuries such as severe pinching or cuts could result. Use work shoe to lock and unlock caster.

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 UNIT 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 and HEPA filter are installed, and the filter access door (if applicable) is in place and closed.

TO START UNIT

1. Check to make sure that the Motor Speed switch is in the "OFF" (middle) position. Plug power cord into a 120 volt AC, 60 Hz, 15 amp supply circuit.
2. Set the Motor Speed switch to the "HIGH" or "LOW" position.
Note: Refer to the chart in this instruction manual entitled "AIRFLOW RATINGS" that lists the airflows corresponding to the various speeds for the H1990M.

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 INDICATOR

Filter Change Indicator light "ON" indicates 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 unit or relocating unit 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", this indicates one or more of the following: (1) pre-filter is 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 H1990M Portable Air Filtration Unit is 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 filter access door latches approximately ½ turn counterclockwise and open the door.
2. Remove the first stage filter from the channel in the filter access door and replace it with a new one.
3. Close the 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" after changing the first stage filter, the second stage pleated filter should be replaced.

To Change the Second Stage Filter:

1. With the unit operating, turn the filter access door latches approximately ½ turn counterclockwise and open the door.
2. Remove the second stage filter (located behind the first stage polypad filter) and replace it with a new one.
3. Return the first stage filter into place in front of the new second stage filter.
4. If the Filter Change Indicator light remains "ON" after changing both the first stage filter and 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 HEPA Filter

1. Turn the unit "OFF", disconnect the unit's power cord from the electrical outlet and open the filter access door.

2. Make note of the position of the HEPA filter retaining bolts, corner brackets, and metal discs that secure the HEPA in place before removing them. After removing the retaining bolts, corner brackets, and metal discs, remove the HEPA filter from the cabinet.
3. Carefully place a new HEPA filter (H1910M) inside the cabinet, gasketed end first. Place the HEPA filter on the two L-shaped guides that are fastened to the lower left and right sides of the cabinet interior. Once the HEPA filter is positioned on the guides, slide the filter back until it is flush against its sealing surface.
4. Re-install the mounting brackets, metal discs, and retaining bolts to secure the HEPA filter in place. The brackets fit under the front lip of the cabinet and a metal disc should be positioned at each corner of the HEPA filter to prevent the bolts from coming in direct contact with the HEPA filter frame. The bolts should be snug but not over-tightened.
5. Close the 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 affect engineered performance levels.

HEPA-AIRE H1990M SPECIFICATIONS

FEATURE	H1990M
Net weight with filters:	125 lbs.
Shipping weight:	141 lbs.
Dimensions - L x W x H:	35 1/8"L x 19 1/8"W x 30 1/4"H
Power supply requirements:	120 volts AC, 60Hz, 15 amp circuit.
Normal operating amps:	9.0 amps or less.
Motor:	1 HP, 2 speed motor with thermal overload protection, auto reset, 60Hz, single phase
Operational sound level:	High speed: 73 dBA at intake & sides, 83 dBA at exhaust. Low speed: 68 dBA at intake & sides, 77 dBA at exhaust. Readings taken at a distance of 5 feet.
Cabinet material:	.040" thick galvanized steel
Transportability:	2 each removable 4", 360° swivel casters with locking feature. 2 each removable 4", fixed position casters.
First stage pre-filter:	1" coarse particulate polypad pre-filter (H1901).
Second stage pre-filters:	Standard: 2" pleated particulate pre-filter (H1902). Optional: 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 (H1910M) @ 2000CFM.

Note: Specification subject to change without notice.

AIRFLOW RATINGS

	HIGH Speed	LOW Speed
H1990M	1600 CFM	1050 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 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 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.
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 AMPERAGE IS SUPPLIED.	CHECK POWER SUPPLY. FOR MAXIMUM PERFORMANCE, THE UNIT REQUIRES 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 50FT 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".	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 unit does not start or malfunctions after carefully following the Troubleshooting Guide, call Abatement Technologies service department at 800-634-9091 (U.S.) or 905-871-4720 (Canada) for assistance.

COMPONENT REPLACEMENT AND CARE OF THE UNIT

Warning: To reduce the risk of fire, electrical shock or personal injury, always turn the unit "OFF" and disconnect power cord from supply receptacle before removing the control panel, replacing the HEPA filter and before cleaning or servicing the unit. The H1990M 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 Diagram and Wiring Schematic 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.

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 ETL (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. **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' H1990M 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-CC001.4 (Type A HEPA and ULPA Filters)

IEST-RP-CC021.2 (Testing HEPA and ULPA Filter Media)

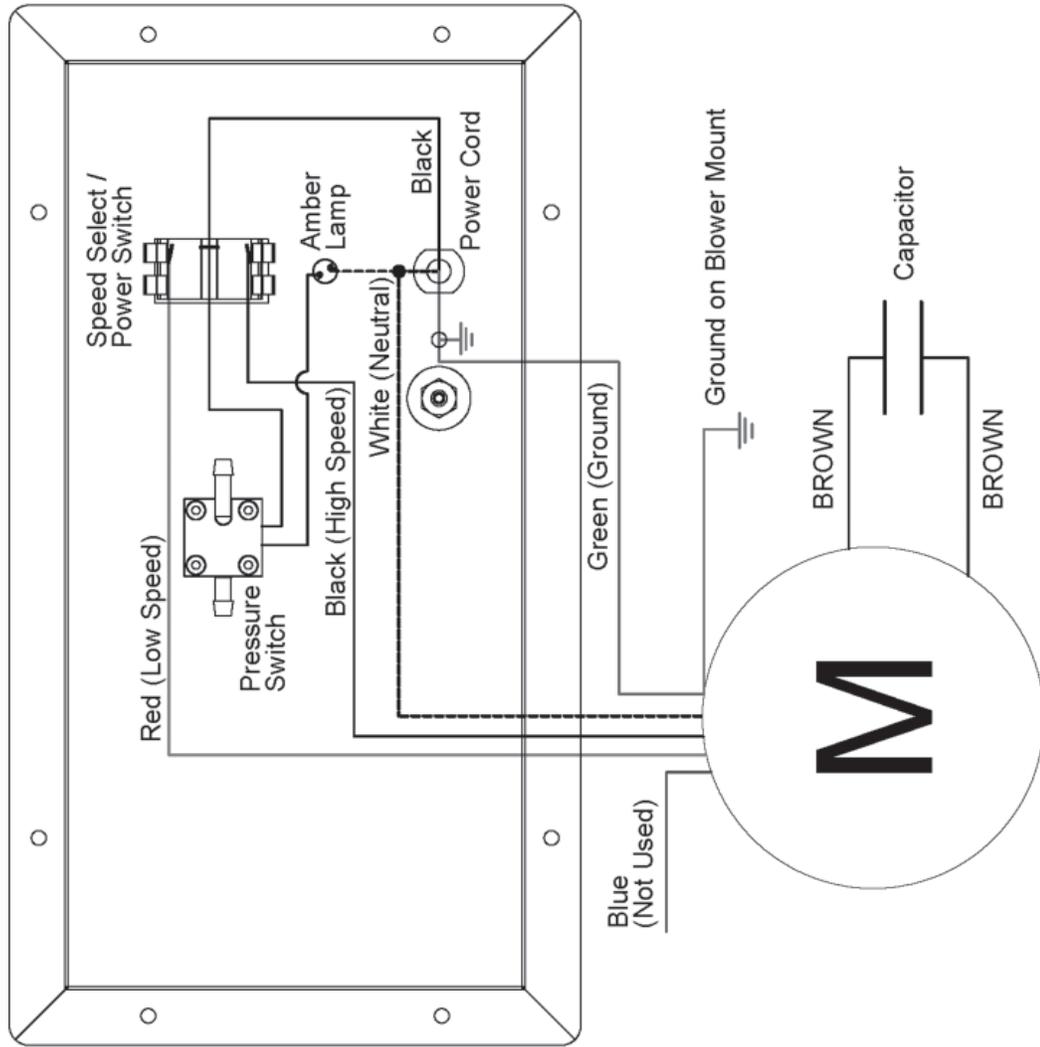
Underwriters Laboratories

UL900, Class II (Flammability Specifications)

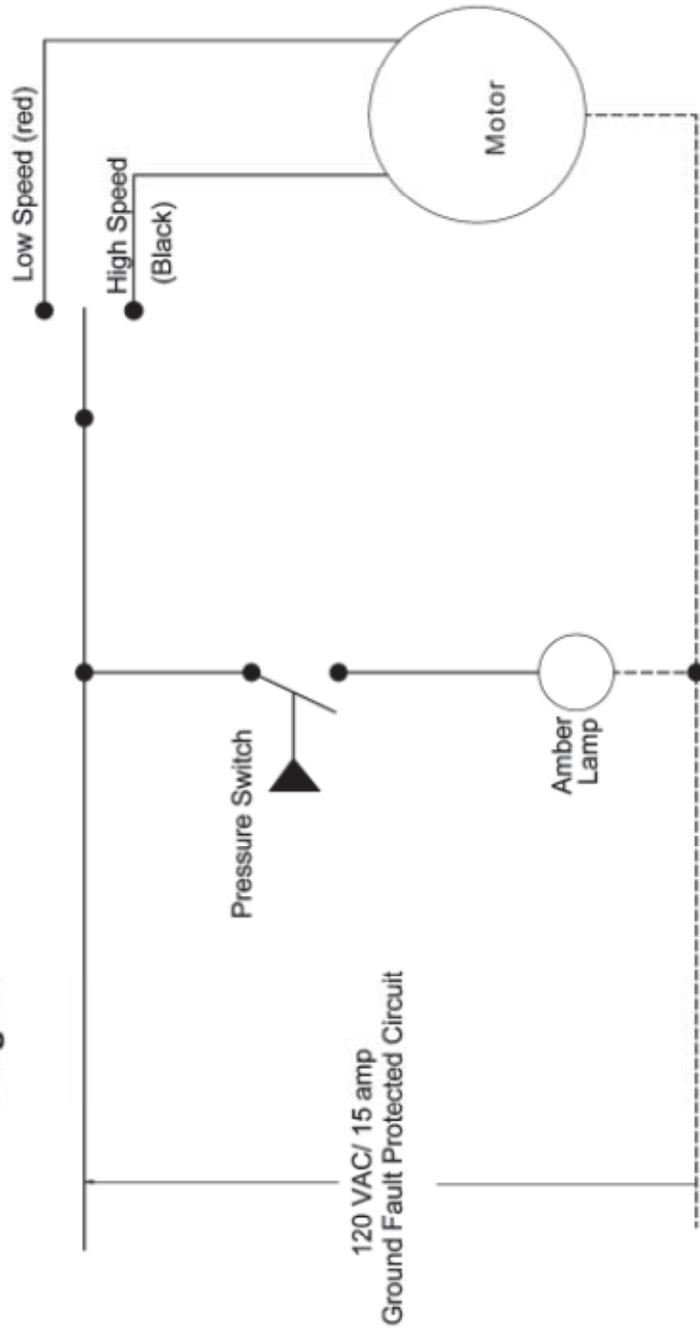
100% Efficiency Tested

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-CC034.2.

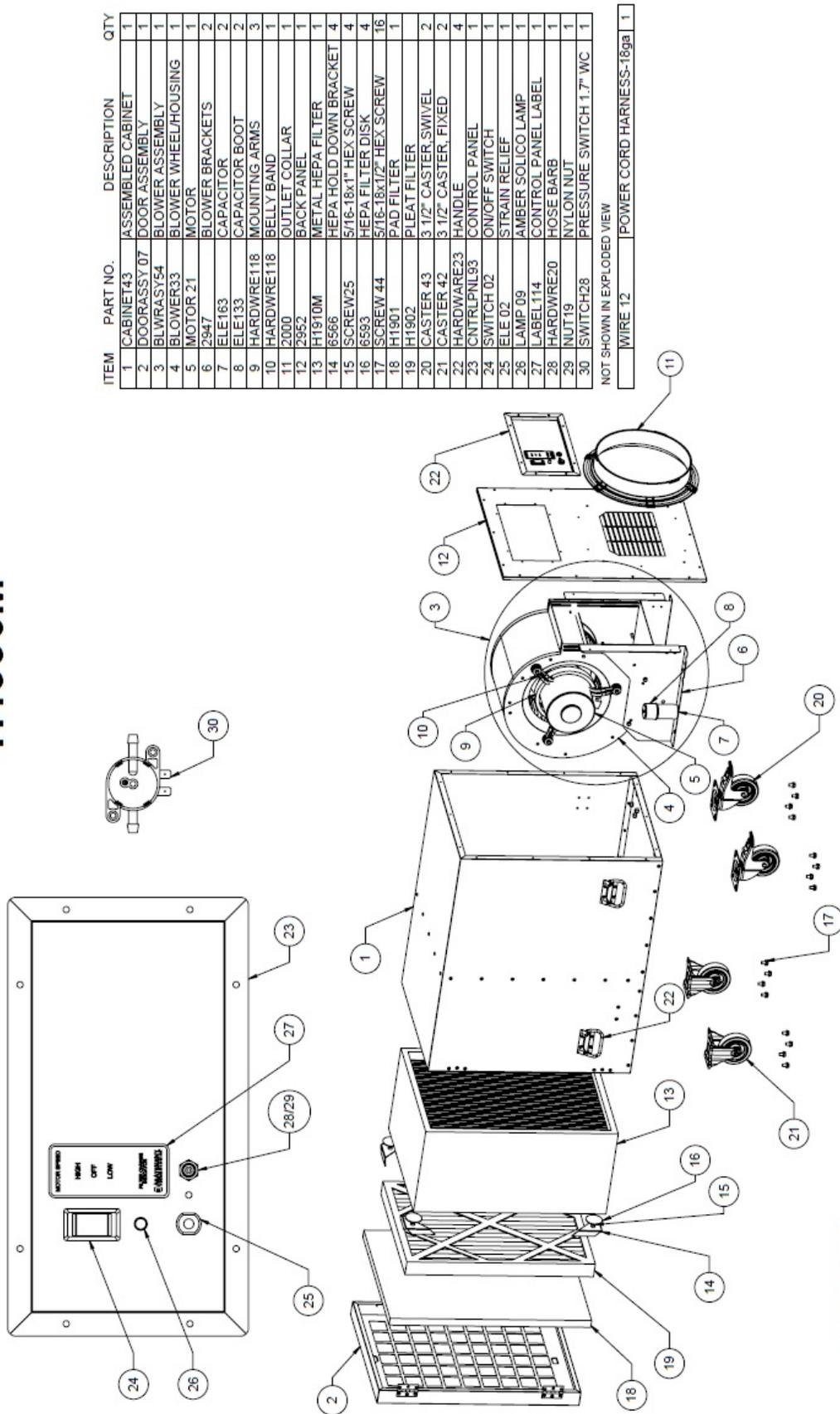
H1990M Control Panel Wiring Diagram



H1990M Wiring Schematic



H1990M



ITEM	PART NO.	DESCRIPTION	QTY
1	CABINET43	ASSEMBLED CABINET	1
2	DOORASSY 07	DOOR ASSEMBLY	1
3	BLWRASY54	BLOWER ASSEMBLY	1
4	BLOWER33	BLOWER WHEEL/HOUSING	1
5	MOTOR 21	MOTOR	1
6	2947	BLOWER BRACKETS	2
7	ELE163	CAPACITOR	2
8	ELE133	CAPACITOR BOOT	2
9	HARDWRE118	MOUNTING ARMS	3
10	HARDWRE118	BELLY BAND	1
11	2000	OUTLET COLLAR	1
12	2952	BACK PANEL	1
13	H1910M	METAL HEPA FILTER	1
14	6566	HEPA HOLD DOWN BRACKET	4
15	SCREW25	5/16-18x1" HEX SCREW	4
16	6593	HEPA FILTER DISK	4
17	SCREW 44	5/16-18x1/2" HEX SCREW	16
18	H1901	PAD FILTER	1
19	H1902	PLEAT FILTER	1
20	CASTER 43	3 1/2" CASTER, SWIVEL	2
21	CASTER 42	3 1/2" CASTER, FIXED	2
22	HARDWARE23	HANDLE	4
23	CNTRLPNL93	CONTROL PANEL	1
24	SWITCH 02	ON/OFF SWITCH	1
25	ELE 02	STRAIN RELIEF	1
26	LAMP 09	AMBER SOLICO LAMP	1
27	LABEL114	CONTROL PANEL LABEL	1
28	HARDWRE20	HOSE BARB	1
29	NUT19	NYLON NUT	1
30	SWITCH28	PRESSURE SWITCH 1.7" WC	1
NOT SHOWN IN EXPLODED VIEW			
WIRE 12			POWER CORD HARNESS-19ga 1

H1990MREVB
11/12/13
STARTING SERIAL #B13013201232