

# Owner's Manual — Phoenix GuardianR 50Hz

## Installation, Operation & Service Instructions

### Read and Save These Instructions

The Phoenix GuardianR HEPA System is the most compact, portable unit in our popular line of high performance airscrubbers. The Phoenix GuardianR features a 56 cm x 61 cm (22" x 24") footprint and stands only 34 cm (14") tall. Weighing less than 16 kg (35 lbs) and featuring a molded handle and stackable design, the GuardianR is easy to carry, transport, and store.

For maximum flexibility, the Phoenix GuardianR features variable airflow and can be operated vertically or horizontally. The GuardianR is designed to accept 41 cm (16") inlet flex duct and 10" lay flat outlet duct for a variety of operating set-up options.

The GuardianR delivers a maximum 825 m<sup>3</sup>/hr (485 CFM) of HEPA filtered air, while drawing less than 1.2 amps of power. This makes the GuardianR HEPA System perfect for a variety of remediation projects where space and power are at a premium. A single GuardianR is capable of providing 4 air changes per hour (the recommended minimum) on more than 205 m<sup>3</sup> (7500 cubic foot) room (more than a 9m x 9m x 2.5m).

The GuardianR HEPA System's 2-stage filter design - with documented true HEPA filtration performance - will remove hazardous particles from the air and, with the addition of an optional carbon/potassium permanganate filter, will adsorb a wide range of odors and gases. The GuardianR is designed to accept 41 cm (16") inlet flex duct and 26 cm (10") lay flat outlet duct for a variety of operating set-up options.



Phoenix GuardianR Pro 50Hz  
PN 4031040

#### The Phoenix GuardianR HEPA System

- Less than 1.2 amps
- Compact design
- Variable speed flow
- Multiple ducting options
- Tough, plastic cabinet
- Optional carbon/potassium permanganate filter

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Serial No. \_\_\_\_\_

Purchase Date \_\_\_\_\_

Dealer's Name \_\_\_\_\_

Read the operation and maintenance instructions carefully before using this unit. Proper adherence to these instructions is essential to obtain maximum benefit from your Phoenix GuardianR HEPA System.

## 1 Specifications

<b>Part No.</b>	4031040
<b>Power</b>	230/50Hz, 1.2 amps
<b>Blower</b>	825 m3/hr (485 CFM)
<b>Filters:</b>	1st stage 2.5 cm (1") Pleated Media, 46 cm x 46 cm (18" x 18") (optional) 2.5 cm (1") Carbon and Potassium Permanganate
	2nd stage 6.35 cm (2.5") Pleated HEPA 46 cm x 46 cm (18" x 18")
<b>Warranty</b>	One Year, 100% Parts and Labor
<b>Dimensions</b>	Width 56 cm (22") Height 36 cm (14") Depth 61 cm (24") Weight 15.9 kg (35 lbs)

## 2 Important Safety Instructions

### CAUTION

**CAUTION: Risk of electric shock. Can cause injury or death. To reduce the risk of electric shock:**

- Do not expose to standing water or rain
- Unplug fan before servicing or changing filters.
- Do not block air intake or outlet. One foot minimum distance to obstructions.

#### **Indoor use only**

- Do not use as stool or bench
- Do not operate with damaged cord or plug.
- 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."

## 3 Operation

### 3.1 Transporting the Phoenix GuardianR

The GuardianR should be transported vertically or horizontally on the appropriate feet located on the bottom of the unit or opposite the handle

### 3.2 Electrical Requirements

The Phoenix GuardianR HEPA System can be plugged into a grounded 10 Amp circuit. It draws about 1.2 Amps with clean filters and no ducting. The amp draw will decrease slightly with added ducting and as the filters load with particulate.

#### 3.2A International Cord/Plug Set

Connect the appropriate Cord/Plug set (provided) to the IEC C13 connector. The Phoenix GuardianR draws 1.2 Amps; 230 volts and should be plugged into an appropriate grounded (earthed) outlet.

### 3.3 Air Ducting

#### 3.3A Inlet Ducting

Occasionally the area to be filtered is difficult to access and/or the unit cannot be located in the area. In such cases, the air can be ducted to the unit's inlet.

A round 41 cm (16") diameter flexible duct can be attached to the unit inlet. It connects by placing the wire in the duct over the duct collar lip at one location and working over it over the lip gradually. It may be removed after use for easier transport and storage. Flexible 41 cm (16") duct is available from Therma-Stor LLC. (4028357)



#### 3.3B Outlet Ducting

A detachable trapezoid shaped exhaust ring is supplied that will allow 26 cm (10") round lay-flat plastic duct to be attached to the Phoenix GuardianR HEPA System outlet. Lay-flat plastic ducting is available from Therma-Stor LLC. (4024935)

To attach ducting to the collar, remove the ring from the unit by pressing release tab at the top of the grill. Put the plastic duct end through the inside of the ring. Roll the duct end outward so that it over-laps the outside of the ring. Clip the ring back onto the exhaust grill.



**To remove ducting**

#### 3.3C Negative Air Ducting

The Phoenix GuardianR HEPA System can be used to filter and exhaust air from a space. When exhausting to outside the space, the space will be under a slight negative pressure. This will help prevent airborne particles from leaving the space, because the negative pressure will draw air in through openings in the space's exterior surfaces.

### CAUTION

**CAUTION:** Exhausting too much air from a space with open combustion devices (e.g. furnace, fireplace or water heater) can cause those devices to backdraft. This can contaminate the space with potentially fatal gases.

In such cases, the Phoenix GuardianR HEPA System must be used in one of the following three ways:

- A. As a filtering unit only. Exhausting no air from the space and thus causing no negative pressure or backdrafting.
- B. Exhausting a very limited amount of air which does not cause backdrafting. In case B, the open combustion devices must be thoroughly checked to guarantee that they do not backdraft while the Phoenix GuardianR HEPA System is running.
- C. Direct the outlet duct from the GuardianR HEPA System to the room with the open combustion device(s). This will positively pressurize the room with HEPA filtered air, thus preventing backdrafting. As in case B, those combustion devices must be checked after the GuardianR HEPA System is running to guarantee that they are not backdrafting.

### 3.4 Power/Speed Control

The power/speed switch is located on the control panel. When turned on to any speed, it powers the impeller fan.

Occasionally the impeller fan may not start on low speed. If this occurs, rotate the speed control to high speed until the impeller fan starts, then adjust it to a lower speed.

### CAUTION

**CAUTION:** Do not remove HEPA filter with the unit on. Removing the top and filters while running will expose the dangerous rotating impeller fan. Disconnect the appliance before changing filters.

### 3.5 Servicing

When the Phoenix GuardianR is first turned on, check for excessive vibration. If the unit vibrates excessively or if impeller rubs on housing, turn off the unit immediately. Have a service technician inspect the unit to locate the problem.

## 4 Maintenance

### **⚠ WARNING**

*Use extreme caution when changing the HEPA filter as hazardous material could be trapped in the media. Always make sure to dispose of filters in the appropriate way. If you are unsure of how to safely dispose of any filter-consult an industrial hygienist to ensure that all hazardous materials are contained and disposed of properly.*

#### 4.1 Air Filters

The standard Phoenix GuardianR HEPA System is equipped with two filters that progressively filter out smaller particles. An optional activated carbon/potassium permanganate filter can be also added. These filters must be checked regularly. Operating the unit with dirty filters will reduce the airflow, but will do no harm to the unit. The unit can be run indefinitely with dirty filters.

The two standard filters used are listed below (as installed in the unit from top to bottom):

- A. 25 to 30% efficient (per ASHRAE 52.1-1992), MERV-7, pleated fabric pre-filter.
- B. 99.97% DOP efficient HEPA filter.

#### 4.2 Filter replacement

##### 4.2A

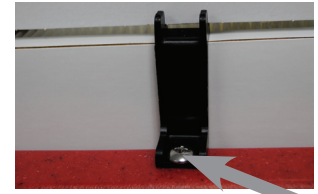
Airflow on high speed with all filters clean and no ducting is slightly over 825 m<sup>3</sup>/hr (485 CFM). The unit can be run with very dirty filters and virtually no flow without harming the unit. The operator's decision to change filters should be based on filter cost vs. the unit's filtering effectiveness. If airflow is 412 m<sup>3</sup>/hr vs. 825 m<sup>3</sup>/hr (250 CFM vs. 485 CFM), the unit will filter particles from a space at half the rate. The operator must judge if that is acceptable.

If the operator determines the filters should be changed due to low airflow, it is most economical to change them in the following order:

Change the pre-filter (top) first. This is the least expensive filter. Recheck the airflow. If the airflow is acceptable, no other filters need to be changed.

If the airflow is still too low, the HEPA filter must be changed. To remove the HEPA filter, follow these steps:

1. Loosen the eight screws one revolution
2. Rotate all eight clips out of the way.
3. Remove old filter.
4. Installing the new filter is the reverse of these instructions



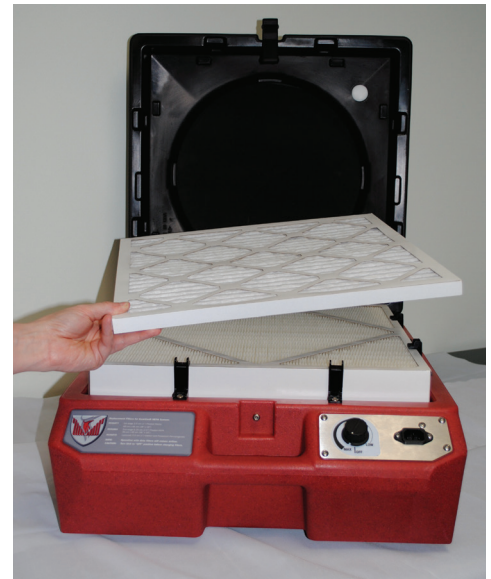
The photo depicts clip in a locked position. Turn screw counter-clockwise to remove.

#### 4.2B Optional Activated Carbon/Potassium Permanganate Filters

Optional gas phase filters are available from Therma-Stor. They use a blend of activated carbon and potassium permanganate. This blend removes the vast majority of gaseous contaminants encountered in most filtering applications. The activated carbon removes the heavier volatile organics while the potassium permanganate removes lower molecular weight contaminants. This is well suited to the smoke odors present after fire damage.

The life of the media blend depends upon both the hours used and the contamination level. Another advantage of the blended media versus activated carbon only is that part of the blend changes color as it loads up with contaminants. It starts out black, then turns pink, then brown, and finally white. It is best changed when it passes the brown stage and begins to turn white. It has lost most of its effectiveness at that point.

The filter is the same size as the pleated fabric filter. Install it in place of the pleated fabric filter.



## 5 Service

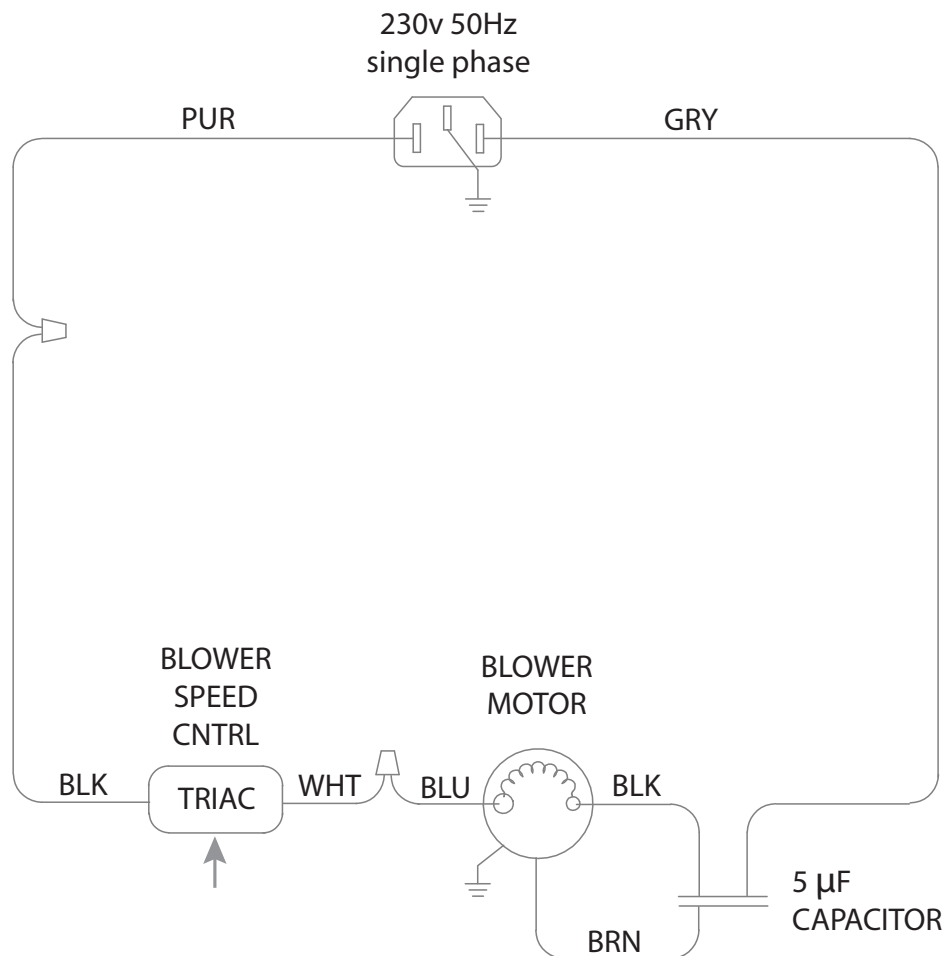
### CAUTION

**CAUTION:** Servicing the Phoenix GuardianR HEPA System with its high voltage circuitry presents a health hazard that could result in death, serious bodily injury, and/or property damage. Disconnect the appliance from the power supply before servicing. Only qualified service people should service this unit.

#### 5.1 Warranty

A warranty certificate has been enclosed with this unit. Read it before any repair is initiated. If a warranty repair is required, call the factory first at 1-608-237-8400 for warranty claim authorization and technical assistance.

## 6 Wiring Diagram



## 7 Service Parts

Item	Part No.	Description	Optional Parts
1	4031877	Air Filter, Pleated, 1" x 18" x 18"	4031878 Air Filter, Disposable Carbon/ Potassium Permanganate
2	4031864	Air Filter, HEPA, 2.5" x 18" x 18" (99.97% Efficient)	4028357 Duct, Flex, 16" x 25'
3	4031863	HEPA filter hold down clip	4024935 Duct, Lay Flat, 10" x 250'
4	4033857	Impeller Fan (not shown)	
5	4032846	Impeller Fan Speed Control	
6	4032143	Impeller Fan Speed Control Knob	
7	4028265	Cord (not shown)	
8	4027315	Run Capacitor, 5 mfd, 440V (not shown)	
9	4031861	10" Lay flat duct collar ring	



## Phoenix GuardianR HEPA System Limited Warranty

**Warrantor:**

Therma-Stor LLC  
4201 Lien Rd  
Madison, WI 53704  
Telephone: 1-800-533-7533

**Who Is Covered:** This warranty extends only to the original end-user of the GuardianR HEPA System, and may not be assigned or transferred.

**First Year Warranty:** Therma-Stor Products warrants that, for one (1) year the GuardianR HEPA System will operate free from any defects in materials and workmanship, or Therma-Stor Products will, at its option, repair or replace the defective part(s), free of any charge.

**End-User Responsibilities:** Warranty service must be performed by a Servicer authorized by Therma-Stor Products. If the end-user is unable to locate or obtain warranty service from an authorized Servicer, he should call Therma-Stor Products at the above number and ask for the Therma-Stor Products Service Department, which will then arrange for covered warranty service. Warranty service will be performed during normal working hours.

The end-user must present proof of purchase (lease) upon request, by use of the warranty card or other reasonable and reliable means. The end-user is responsible for normal care. This warranty does not cover any defect, malfunction, etc. resulting from misuse, abuse, lack of normal care, corrosion, freezing, tampering, modification, unauthorized or improper repair or installation, accident, acts of nature or any other cause beyond Therma-Stor Products' reasonable control.

**Limitations and Exclusions:** If any GuardianR HEPA System part is repaired or replaced, the new part shall be warranted for only the remainder of the original warranty period applicable thereto (but all warranty periods will be extended by the period of time, if any, that the GuardianR HEPA System is out of service while awaiting covered warranty service).

UPON THE EXPIRATION OF THE WRITTEN WARRANTY APPLICABLE TO THE GuardianR HEPA System OR ANY PART THEREOF, ALL OTHER WARRANTIES IMPLIED BY LAW, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL ALSO EXPIRE. ALL WARRANTIES MADE BY THERMA-STOR PRODUCTS ARE SET FORTH HEREIN, AND NO CLAIM MAY BE MADE AGAINST THERMA-STOR PRODUCTS BASED ON ANY ORAL WARRANTY. IN NO EVENT SHALL THERMA-STOR PRODUCTS, IN CONNECTION WITH THE SALE, INSTALLATION, USE, REPAIR OR REPLACEMENT OF ANY GuardianR HEPA System OR PART THEREOF BE LIABLE UNDER ANY LEGAL THEORY FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES INCLUDING WITHOUT LIMITATION WATER DAMAGE (THE END-USER SHOULD TAKE PRECAUTIONS AGAINST SAME), LOST PROFITS, DELAY, OR LOSS OF USE OR DAMAGE TO ANY REAL OR PERSONAL PROPERTY.

Some states do not allow limitations on how long an implied warranty lasts, and some do not allow the exclusion or limitation of incidental or consequential damages, so one or both of these limitations may not apply to you.

**Legal Rights:** This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

