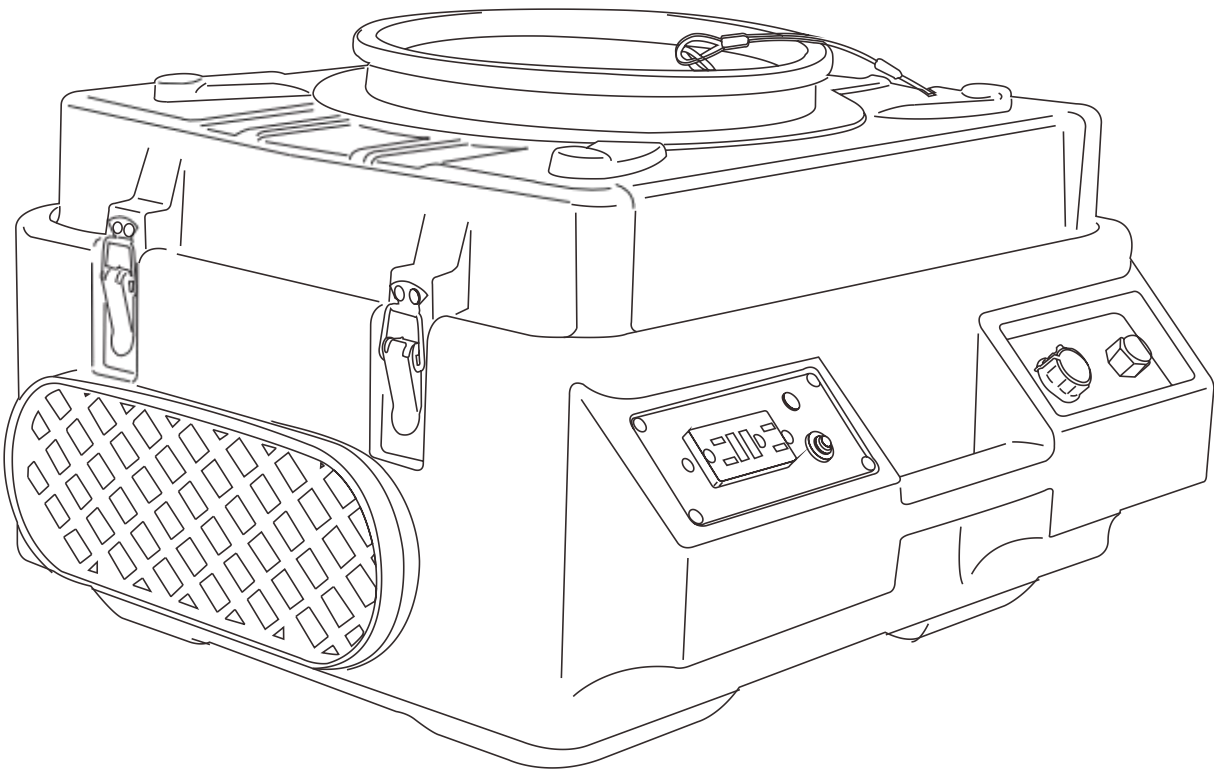


# Owner's Manual

# **patron<sup>®</sup>**



**AIR SCRUBBER AS-650**

READ AND SAVE THESE INSTRUCTIONS

# Read and Save These Instructions

The AS-650 Air scrubber is the a compact, portable unit which features a 20" x 23" footprint and stands only 15" tall. Weighing less than 35 lbs and featuring a molded handle and stackable design, the air scrubber is easy to carry, transport, and store.

For maximum versatility, the AS-650 air scrubber features variable airflow and can be operated vertically or horizontally. The Air scrubber is designed to accept 12" inlet flex duct and 10" lay flat outlet duct for a variety of operating set-up options.

The air scrubber delivers a maximum 650 CFM of HEPA filtered air, while drawing less than two amps of power. This makes the air scrubber perfect for a variety of remediation projects where space and power are at a premium. A single air scrubber is capable of providing 4 air changes per hour (the recommended minimum) in a 7500 cubic foot room (more than a 30' x 30'x 8').

The air scrubber'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 absorb a wide range of odors and gases.

## Feature Summary

- **Less than 2 amps**
- **Compact design**
- **Variable speed flow**
- **Multiple ducting options**
- **Tough, plastic cabinet**
- **3-Stage Filtration**
- **UV Light**

# Specifications

- **Model:** AS-650
- **Power:** 110-120V, 1.9 Amp
- **Airflow:** 650 CFM
- **1st Filter:** 1" Pleated, 16" x 16"
- **2nd Filter:** 1" Carbon and Potassium Permanganate, 16" x 16"
- **3rd Filter:** 2.5" Pleated HEPA, 19" x 16"
- **Warranty:** 1 Year
- **Dimensions (W x H x D):** 20" x 15" x 23"
- **Weight:** 33 LBS

## 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

Connect to GFCI outlet

Do not use an extension cord

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."

# Operation

## Transporting the AS-650 Air scrubber

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

## Electrical Requirements

The AS-650 Air scrubber can be plugged into a grounded 15 Amp circuit. It draws 1.9 Amps with clean filters and no ducting. The amp draw will decrease slightly with added ducting and as the filters load with particulate. Due to the presence of GFCI receptacle, it must be plugged directly into a wall outlet. No extension cords should be used.

## *Air Ducting*

### A 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 12" 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.

### B Outlet Ducting

A detachable trapezoid shaped exhaust ring is supplied that will allow 10" round lay-flat plastic duct to be attached to the AS-650 Air scrubber outlet. 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 overlaps the outside of the ring. Clip the ring back onto the exhaust grill.

### C Negative Air Ducting

The AS-650 Air scrubber 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.

# Operation

## 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 AS-650 Air scrubber 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 AS-650 Air scrubber is running.
- C. Direct the outlet duct from the Air scrubber 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 Air scrubber is running to guarantee that they are not backdrafting.

## 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.*

# Operation

## Resettable Circuit Breaker

The 12 AMP thermal response resettable circuit breaker protects the unit and devices connected to its duplex GFCI outlet.

The circuit breaker is designed to sense the total current draw through the circuit. The circuit breaker "trips" when more than 12 amps of electrical current are drawn through the device's power cord. Should an over-current condition occur, the Air scrubber on-board circuit breaker prevents nuisance visits to a remote power junction box.

### **IMPORTANT**

**IMPORTANT:** Total amperage of the AS-650 plus all devices plugged into the receptacle must not exceed 12 amps. The circuit breaker will not allow for loads in excess of 12 amps, although there is a time delay before the overloaded circuit is broken.

### **IMPORTANT**

**IMPORTANT:** when the AS-650 is plugged into a standard "powered" wall outlet the AS-650's duplex outlet is electrically "HOT" and AC voltage is present.

## GFCI Protection and the On-Board Duplex VAC Outlet

The standard AC voltage outlet GFCI (Ground Fault Circuit Interrupter) protection promotes operator safety in wet applications. GFCI devices trip when a fault to electrical "ground" is sensed.

It is recommended to check the GFCI protection prior to operation. To check, push the "TEST" button located on the GFCI duplex outlet. If operating properly the "RESET" button on the GFCI outlet will pop out. A tripped GFCI is indicated by a small LED. The device can only be "RESET" when the Air scrubber is connected to a wall outlet providing standard voltage. This duplex AC outlet allows the inter-connection of other AC powered devices. The sum total amperage of all devices plugged into the receptacle must not exceed 10 amps.

## Servicing

Before each use inspect for damage, blocked inlet or outlet.

Inspect the GFCI to ensure it is not in a "tripped" condition. Push "RESET" to reset the GFCI. When the AS-650 Air scrubber 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.

# 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.*

## Air Filters

The standard AS-650 Air scrubber HEPA system is equipped with three 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 three 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. ≥90% gaseous removal efficiency, Carbon & permanganate pleated filter
- C. 99.97% DOP efficient HEPA filter.

## ***Filter replacement***

### A

when the amber "filter change light" illuminates. It may be time to replace one or both filters. To check airflow accurately, an airflow meter or anemometer must be used:

- . when the filter change light illuminates; remove all ducting and run on high speed. if the filter light remains lit; replace the pre-filter and run on high again. If the light remains; it is time to replace the HEPA filter for full 650 CFM performance.

Airflow on high speed with all filters clean and no ducting is slightly over 650 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 250 CFM vs. 650 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.

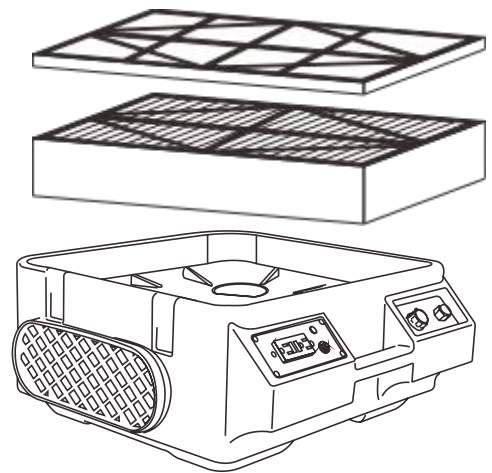
If the airflow is still too low, the HEPA filter must be changed. To remove the HEPA filter, follow these steps:

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

# Maintenance

## B Optional Activated carbon/potassium permanganate Filters

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.

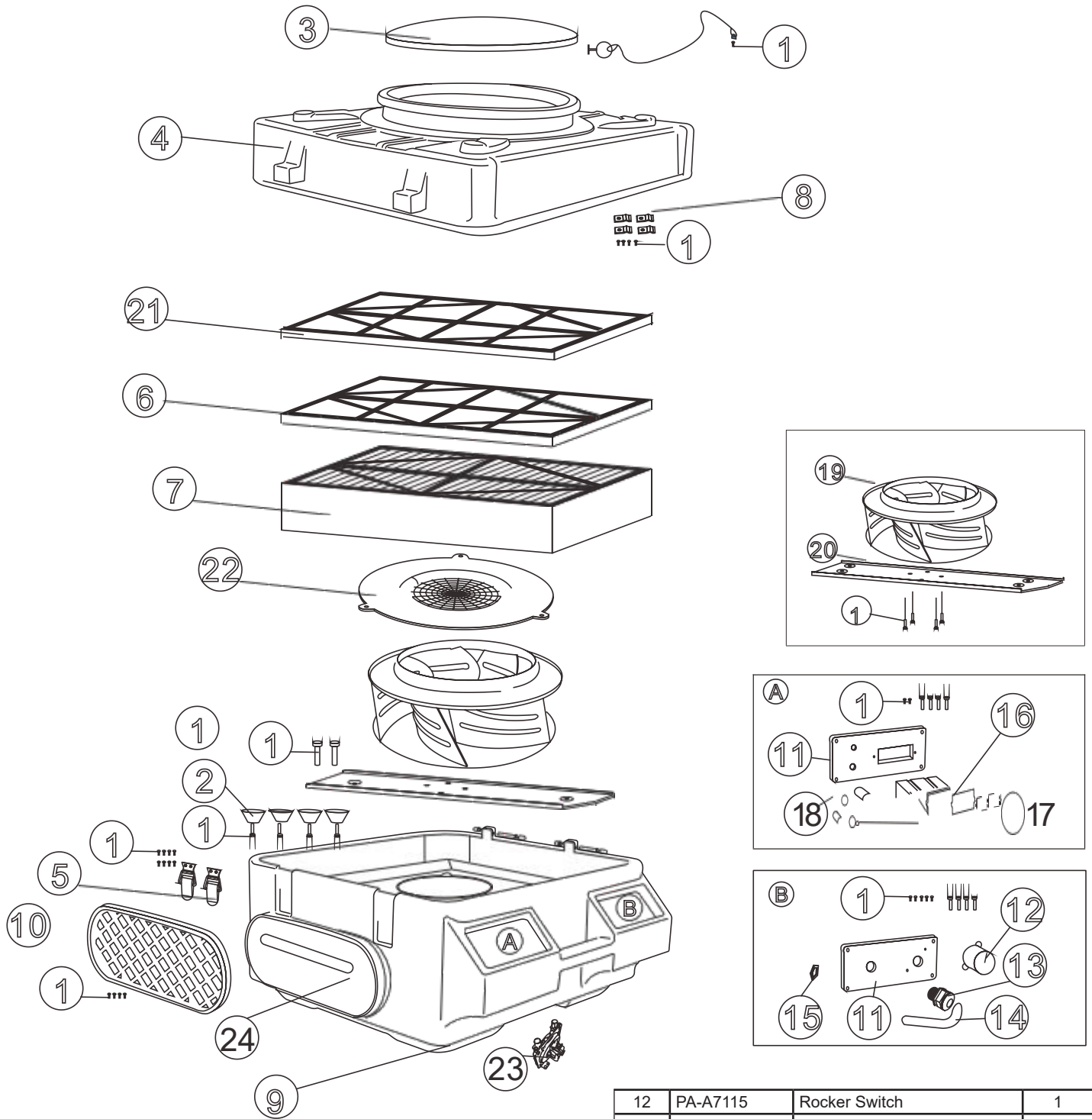


The filter is the same size as the pleated fabric filter. Install it in place of the pleated fabric filter.

# Warranty

A warranty certificate has been enclosed with this unit. Read it before any repair is initiated. If a warranty repair is required, call us at first time for warranty claim authorization and technical assistance.

# PATRON AS-650 PARTS BREAKDOWN



1	PA-A7110	Screw	42
2	PA-A7111	Rubber Foot	4
3	PA-A7123	Air Inlet Cover	1
4	PA-A7124	Upper Housing	1
5	PA-A7112	Buckle	2
6	PA-A7101	Primary Filter	1
7	PA-A7103	HEPA Filter	1
8	PA-A7113	Fixed Buckle	4
9	PA-A7125	Lower Housing	1
10	PA-A7126	Air Outlet Grill	1
11	PA-A7114	Switch Panel	1

12	PA-A7115	Rocker Switch	1
13	PA-A7116	Waterproof Connector	1
14	PA-A7127	Power Cord	1
15	PA-A7117	Nut	1
16	PA-A7118	GFCI Outlet	1
17	PA-A7119	Circuit Breaker	1
18	PA-A7120	Filter Indicator Light	1
19	PA-A7128	Motor w/ Fan	1
20	PA-A7129	Motor Bracket	1
21	PA-A7102	Activated Carbon Filter	1
22	PA-A7130	Air Inlet Grill	1
23	PA-A7121	Airflow Sensor	1
24	PA-A7122	UV Lamp	1