



# **Installation & Service Manual**

## **Portable Fume Booth**

**MODEL 30"**

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## **Disclaimer:**

Although instructions and recommendations are included for installation of your **Portable Fume Booth** equipment, the manufacturer does not assume responsibility for the installation of this equipment nor shall he be held liable for direct or consequential damages resulting from improper installation, application, maintenance or use.

The immense variety of contaminants make it impossible to list all of the potential hazards that may be encountered with air pollution control systems. It is therefore important that the application of the equipment be discussed with an AER Control Systems representative or application engineer prior to use. Additionally, users should consult and comply with all National and Local Fire, Electrical and /or other appropriate codes when determining the application, location and operation of any air pollution control equipment.

Collection of combustible or explosive materials and collection on flame or spark-generating operations may require specific system configurations (contact AER Control Systems LLC. Applications Engineering Department for questions and/or design assistance). The combined collection of combustible or explosive materials and contaminants from spark or flame generating operations, with a common collector or duct system, is not recommended, unless special design provisions have been made to the system (sparks or flames resulting from such operations may ignite the combustible or explosive material). Under no circumstances should anyone be allowed to discard a lighted cigarette, other burning materials, or refuse into an inlet hood or the duct of the collection system. It is the responsibility of the end user to comply with all applicable national, state, and local fire and safety codes.

This manual should be read completely before attempting Operation or Maintenance of this equipment. All work should be performed by qualified personnel according to local requirements.

### **WARNING**

**Failure to comply fully with the following instructions and local code requirements may increase your risk of physical injury due to fire, explosion or electrical shock.**

All data and dimensions in this manual have been thoroughly checked however, we cannot assume responsibility for possible errors or omissions. We reserve the right to change designs and/or specifications without notice.

## **SECTION 1**

### **Uncrating**

1. Remove banding and cardboard shipping carton and packing.
2. Add-ons for example Attenuators are typically labeled and packed with the unit to be installed, Mounting hardware is included for mounting these items. Be sure to check all boxes for any miscellaneous parts or hardware items before discarding.
3. Inspect the exterior of the unit and accessories for shipping damage or shortages that may not have been noticed or recorded when the shipment was initially received; you have 30 days to notify AER Control Systems LLC. of any discrepancies. Contact the shipping company if any damage or shortages have occurred.

### **Description & Operation**

The standard Portable Fume Booth consist of several filter stages depending on application, the standard filter configuration is a ring polyester pad, MERV 14 or 95% ASHRAE efficient fiberglass box filter, two 28 lb activated carbon re-fillable cells, a final ring polyester pad a blower and an external out of the airstream motor. The Portable Fume Booth is designed for 750 CFM and uses a 1 HP single phase motor. The fiberglass filter area is 58 square feet . The downdraft table of the booth is 30" wide by 24" deep with hinged side panels and an enclosed light fixture. An on/off switch with a 10' power cord is standard.

## **SECTION 2**

### **Applications - General**

1. Dust, smoke, & vapor - The Portable Fume Booth is designed for the capture and removal of dust, smoke, & gas/vapor contaminants from a wide variety of manufacturing processes. The standard Fiberglass Filter is 95% efficient and its main purpose is to protect the activated carbon, but it is also effective at stopping dust and fume. Activated carbon is designed to remove the odors from the gas and vapor.

## **SECTION 3**

### **Installation**

#### **Assembly and Installation Portable Fume Booth**

Standard Collectors are pre-assembled such as optional items like silencers. The Portable Fume Booth can be gently lifted off the skid and is ready to go, simply plug the cord into a single phase outlet, (Wired according to order) and turn on switch. The blower and light will automatically come on.

### **Electrical**

1. Single phase 115V 60HZ units are standard prewired from the factory, and include an On/Off switch wired to the electric motor with a power cord for single phase power. Single phase 230V and three phase units are an option, but do not include a switch, cord, or plug. All three phase and 230V single phase units are wired for the input voltage specified on the purchase order.
2. Motors used on the Portable Fume Booth are UL recognized and internal wiring is UL rated at 600 volts. Input power line protection is required for the motor and electrical components. Line load and current requirements are identified on the motor nameplate. Unless ordered with the machine, the power switch for operating the machine, any fusible disconnect, motor starter or controller are to be provided by the customer/user and located externally to the machine.
3. All connections to the non-standard units are made at the motor electrical box (three phase & 230V single phase). Wiring diagrams can be found on the motor nameplate or on the motor electrical box. Verify the incoming voltage and that the motor has been properly wired prior to connecting it to the machine.
4. Verify proper rotation of the blower motor. It will be necessary to view the blower wheel from the blower exhaust on the Portable Fume Booth series unit to verify the rotation. Proper rotation is marked on the motor housing. The blower wheel should be rotating clockwise when viewed from the motor end of the wheel. Counterclockwise from the blower inlet cone side of the wheel. If opposite rotation is experienced, see Figure 2 for directions to switch rotation.

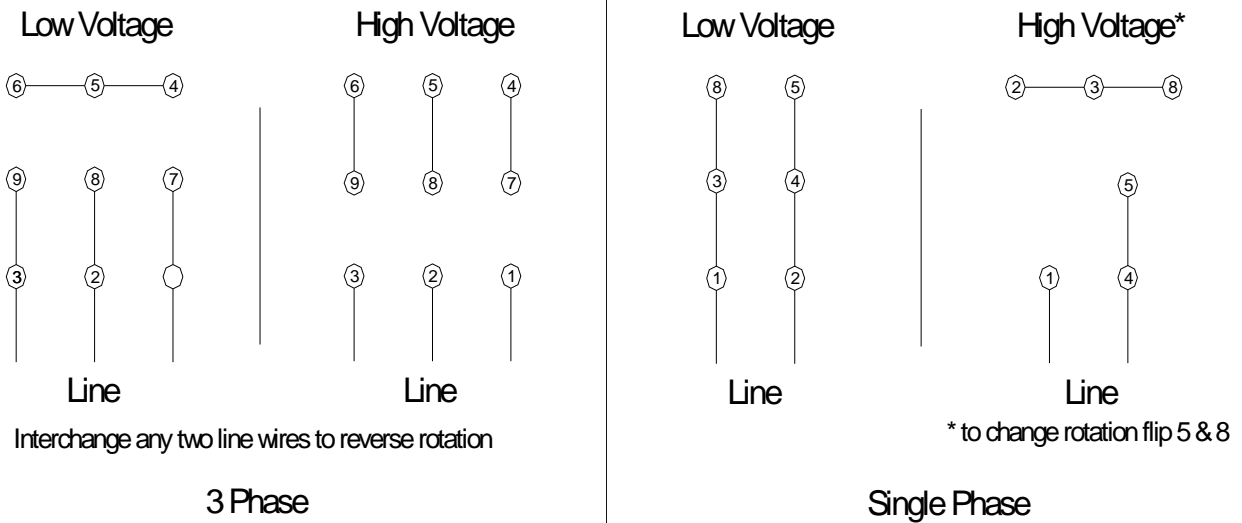
#### **NOTE**

**A motor starter with overload protection must be provided by the User. Thermal overload heaters are installed in the external motor starter. Consult the starter manufacturer for recommended heater size for the installed motor.**

## Electrical Installation (Continued)

### **WARNING**

**Permanent damage to the motor will be sustained  
if connected to voltages other than the normal  
operating voltage for which the unit is pre-wired.**



**Figure 1 Wire Connection Diagram**

## **SECTION 5**

### **Maintenance**

#### **Operation & Maintenance**

Eventually the filters will become loaded with dust, fume and the design airflow or suction will diminish. When this happens the filters will have to be replaced. The unit does have a filter gauge, it is best to mark on the gauge when your airflow has diminished below design airflow and in the future you will know when to change the filters by looking at gauge. If you experience odor then the carbon sell has reached its life and the carbon can be replaced.

Lubrication or other routine periodic preventative maintenance is not required. All that is needed is an occasional check of fasteners and a general visual check of the unit to make sure that nothing has gone wrong. Periodic replacement of the filters is required when neces-sary.

#### **Portable Fume Booth Filter Replacement**

The pressure drop across the bag filters will eventually reach a point at which the airflow and suction are too low. At this time, the bag filters should be replaced as follows:

1. Shut off electrical power to the blower and control box.
2. Open the bag filter access door on the back side of the collector opposite the downdraft table.
3. Unscrew the knobs holding the filter panel on the unit, the filters are held down with a knob and at the end of the threaded knob is a filter hold down leveler, unscrew the knob which takes the pressure off the top of the filter, remove the top filter stage and then the next filter going from top to bottom.
4. Remove the filter for inspection or replacement.
5. Reinstall the filters by placing one filter on top of each other starting from bottom to top. Screw the filter hold down knob to put pressure on the top filter, this will seal up the bottom filter and all of the other filters.
6. Close the filter access door by using the threaded knobs.

## **Troubleshooting**

<b>Problem</b>	<b>Cause</b>	<b>Solution</b>
Motor Fails to Start	No Power to Unit	Check overloads or fuses in starter if supplied. Check power source for power. Check main panel for blown circuit breaker.
	Power to unit	Check electrical connections. Check for bad motor
Low Airflow and/or suction	Blower is running backward	Check blower rotation, to reverse rotation switch 2 out of 3 input wires. (3 phase only) Switch #5 & #8 for single phase.
	Filters are dirty	Clean or replace filters
Contaminant blowing out the filter unit exhaust	Damaged filter (possibly hole in filter)	Replace filter
	Filter seal is not adequate	Check to make sure filter is seated well on the filter track seal.
	Contaminant too small for filter	May need a more efficient filter





### **Limited Warranty**

AER Control Systems LLC warrants all products sold only to purchasers for use in business or for resale, against defects in workmanship or materials under normal use, for one (1) year after the date of purchase from AER Control Systems LLC. Misapplication of the product, decomposition by reaction or chemical action and wear caused by abrasion will not constitute, or be considered as a defect. Warranty is void if the product has been subject to damage, unreasonable use, neglect, improper service, improper installation, or other causes not arising from defects in original materials or workmanship. Any part that is determined to be defective in material or workmanship and returned to an AER Control Systems LLC distributor or authorized service facility, as AER Control Systems LLC designates, shipping costs prepaid, will be, as the exclusive remedy, repaired or replaced at AER Control Systems LLC's option. AER Control Systems LLC shall not be liable for any incidental or consequential cost, expenses, or damages resulting from any failure, defect, or malfunction of this product, liability is expressly disclaimed. AER Control Systems LLC's liability in all events is limited to and will not exceed, the purchase price of the product. Title and risk of loss pass to the buyer on delivery to the common carrier. If a product is damaged in transit, the recipient MUST make note of the damage upon receipt of the product and file a claim with the carrier. AER Control Systems LLC will make a good faith effort for prompt correction or other adjustment, with respect to any product that proves to be defective within the warranty period.

Collection of combustible or explosive materials and collection on flame or spark-generating operation may require specific system configurations (contact AER Control Systems LLC's applications Engineering Department for questions and/or design assistance). The combined collection of combustible or explosive materials and contaminants from spark or flame generating operations, with a common collector or duct system, is not recommended, unless special design provisions have been made to the system (sparks or flames resulting from such operations may ignite the combustible or explosive material). Under no circumstances should anyone be allowed to discard a lighted cigarette, other burning materials, or refuse into an inlet hood or the duct of the collection system. It is the responsibility of the end user to comply with all applicable national, state, and local fire and safety codes. AER Control Systems LLC's liability for consequential and incidental damage resulting from a fire or explosion is expressly disclaimed.

Installation of suitable overload protection such as a motor starter, according to NEC guidelines, is required. Failure to provide proper overload protection will void warranty coverage on electrical components in the system. (Combination motor starters with fusible disconnect packages are available through your local AER Control Systems LLC representative). To ensure optimum collector performance, always use AER Control Systems LLC replacement filters.