

READ AND SAVE THESE INSTRUCTIONS

**INSTRUCTION MANUAL AMBUstat™ FOGGER**  
Model: 630912-EPR (120V) and 630912CE-EPR (230V)



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### **Compliance Information**

Modifications are available to comply with the following safety standards:

UL-73 (Ninth Ed.)

CSA 22.2 No 0:2001, 22.2 No 68-92:2004

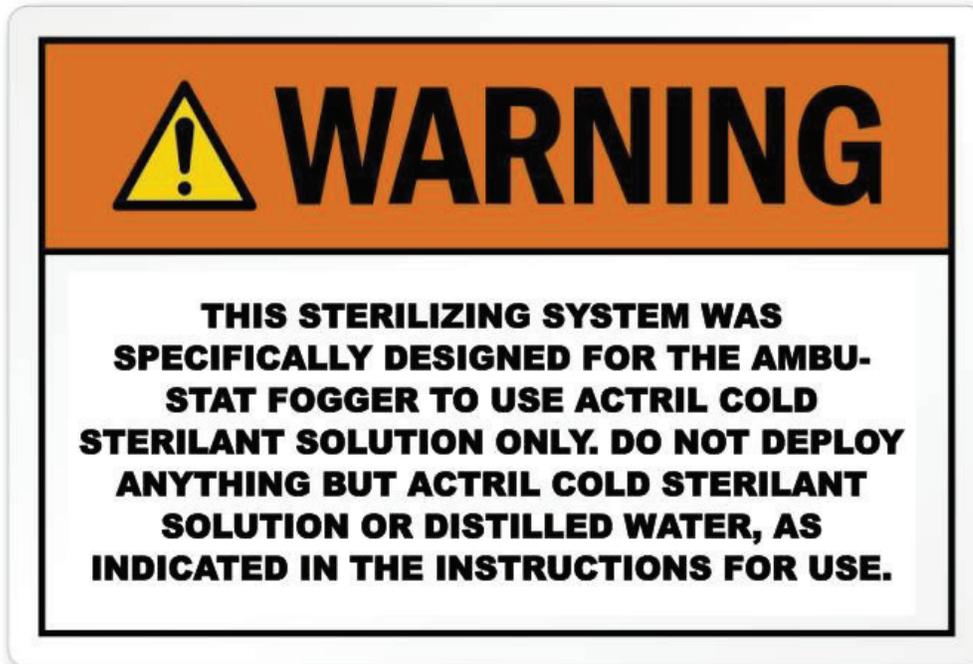
IEC 60335-1:2006 (JEC-J60335; CE DIRECTIVE 2006/95/EC)

### **Electromagnetic Emissions**

The 630912CE-EPR (230V model) is shielded against the generation of radio (electromagnetic) interference in accordance with EN55014, CISPR 14-1:200 and CISPR 14-2:2001. At this time, the 630912-EPR (120V model) is not.

### **Compatibility with World Electrical Systems**

Fogger motors and cord options (KUE-xxx) are available for most electrical supply systems and socket configurations.



The use of any solution, other than Actril Cold Sterilant – Ready-to-Use Solution, may lead to detrimental effects to the fogger and health risks to the operator. Under no circumstances should this fogger be used with any product that is not authorized for use with the AMBUstat™ system.

## **IMPORTANT SAFETY INSTRUCTIONS**

### **INSTRUCTIONS RELATING TO RISK OF FIRE, ELECTRIC SHOCK OR INJURY TO PERSONS**

#### **WARNING**

When using electric appliances, follow these basic safety precautions:

- 1 Read all the instructions before using the appliance.
- 2 To reduce the risk of injury, close supervision is necessary when an appliance is used near children.
- 3 To disconnect, turn all controls to the off ("O") position, then remove plug from outlet.
- 4 Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.
- 5 Unplug from outlet when not in use and before servicing or cleaning.
- 6 Do not operate any appliance with a damaged cord or plug, or after the appliance malfunctions or is dropped or damaged in any manner.
- 7 Return appliance to the nearest authorized service facility for examination, repair or electrical or mechanical adjustment.

To reduce the risk of electrical shock, do not put fogger in water or other liquid.

Do not place or store fogger where it can fall or be pulled into a tub or sink. Connect to a properly grounded outlet only.

**See Grounding Instructions.**

## GROUNDING INSTRUCTIONS

This appliance must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

### **DANGER**

Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal.

Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if there is any doubt as to whether the outlet box and the appliance is properly grounded. Do not modify the plug provided with the appliance – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

## USER MAINTENANCE INSTRUCTIONS

We recommend that the machine be returned to an authorized Distributor or Service Center for repairs. However, users may undertake maintenance if they wish. The Instruction Manual contains information on common repair procedures.

### **DANGER** **RISK OF ELECTRIC SHOCK**

Remove electrical plug from outlet before attempting any service. Do not unplug by pulling on cord. To unplug, grasp the plug, not the cord.

# SAVE THESE INSTRUCTIONS

## SAFETY PRECAUTIONS



**Do not inhale fog output.** Highly atomized liquid droplets can float in the air a long time and are quickly absorbed by the lungs. Depending on the material being fogged, this could result in serious injury or death.

**Only use Actril Cold Sterilant. Do not use to apply any liquid that is hazardous to people, animals or property when atomized into small droplets.** The large surface area of small droplets increases their reactivity and potential to form an explosive mixture.

**Only use Actril Cold Sterilant.** Be aware of potentially dangerous interactions between liquid fog droplets and other aspects of the treatment area.

**Only use Actril Cold Sterilant and follow the instructions in its “Precautions” and “Directions for Use” sections.**

**Dispose of Actril Cold Sterilant in accordance with its label instructions.**

**Keep an intake air filter in place during use.** This will help prevent dust and fog droplets from entering the unit.

**Only use Actril Cold Sterilant. Never introduce flammable liquid into the fogger.** Electric arcs produced inside the motor during normal use could ignite it.



**Do not fog near an open flame.**



**Risk of Electric Shock – Do not expose to rain. Store indoors. Use only a properly grounded (earthed) three pin electric outlet.** The ground wire is an essential safety feature of this product. Do not remove the grounding lug on the power cord. Do not use an ungrounded (“3-to-2”) plug adapter.

**An extension cord, if used, must have a continuous ground wire leading to earth and an amperage rating greater than the rated current on the fogger nameplate label.** Do not chain two extension cords together.

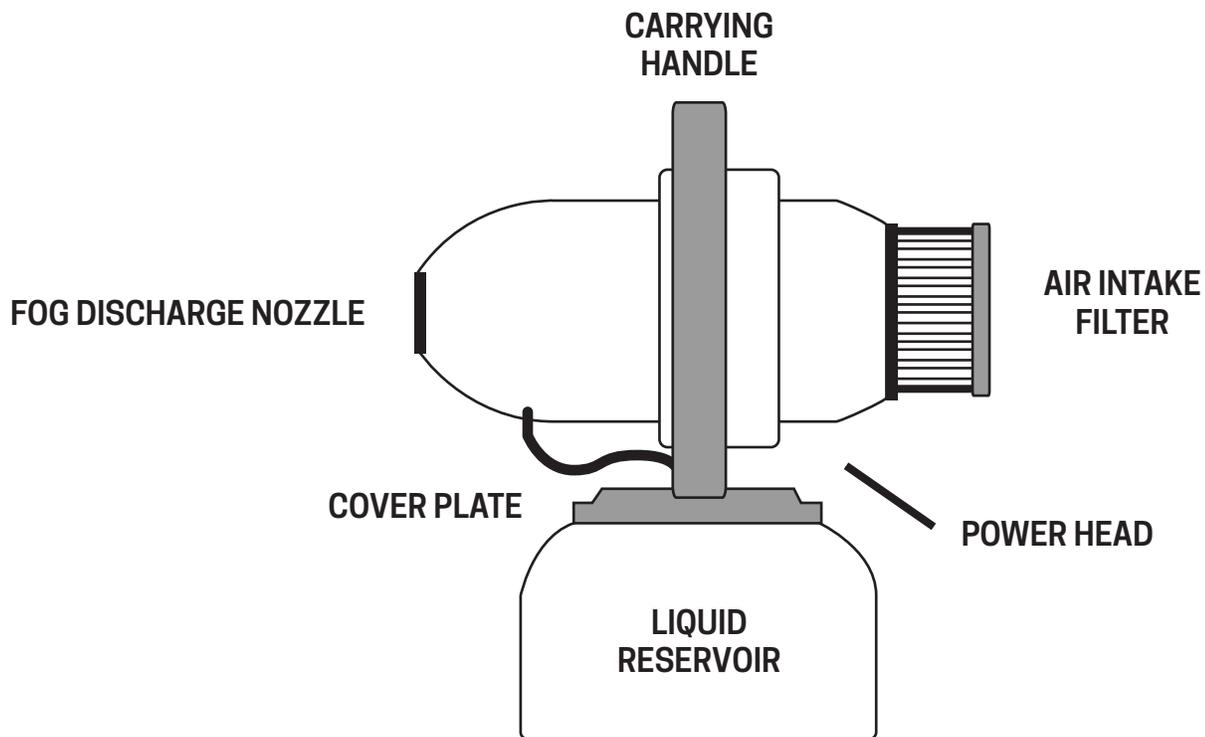
## PRODUCT OVERVIEW

The AMBUstat™ fogger atomizes light liquids into a fog, mist or spray of small droplets. It is designed specifically for use with Actril Cold Sterilant.

The liquid flow rate determines the size of the fog droplets produced. Several factors influence liquid flow rate: the degree of liquid flow rate restriction imposed by the fixed liquid flow rate restrictor assembly, liquid density, liquid viscosity and the frictional resistance of the machine's internal lines.

Viscosity and surface tension also affect fog droplet size. At a given flow, lighter liquids (with lower viscosity or lower surface tension) make smaller droplets and finer fogs than heavier ones.

The drawing below identifies the principal components of the machine.



## FOGGING BASICS

The AMBUstat™ fogger is designed to atomize Actril Cold Sterilant into small droplets (fog, mist or spray) by shearing them in a highly turbulent section of the nozzle. A blower in the power head supplies air to create the turbulence.

The liquid flowing into the nozzle, regulated by the fixed liquid flow rate restrictor assembly, determines average fog droplet size. The restrictor assembly shipped with this fogger was selected to generate a dry fog – small droplets that float extensively and diffuse widely. Through the use of interchangeable restrictor assemblies, of differing sizes, the flow rate can be decreased or increased. A larger flow rate (e.g., 4-8 ounces [100-250 ml] per minute) produces progressively larger droplets (wet fog, fine mist) that could be used for special decontamination circumstances.

To achieve a desired level of decontamination, an appropriate quantity of Actril Cold Sterilant must make contact with the targeted surfaces and that quantity of Actril Cold Sterilant must stay in contact with the targeted surfaces for the specified length of time, otherwise known as 'dwell' or 'contact' time. Fogs are useful for this application, because they can deposit a very thin layer of liquid droplets, using less chemical and speeding up drying.

## EQUIPMENT SETUP

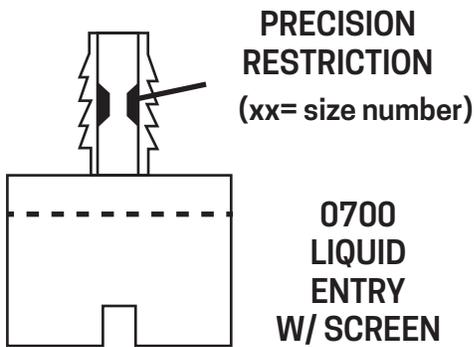
### **Attach Air Filter**

The air intake filter and cover are packed in the top of the carton. Place the filter cartridge over the bracket at the rear of the power head and hold it against the rear housing. Screw filter cover into the bracket and tighten snugly.

### **Flow Rate**

The AMBUstat™ fogger is a fixed flow machine that enables precision liquid flow restriction to ensure consistent results. The flow restriction is built into the specifically selected 0700Q-12 quick connect liquid flow restrictor assembly and is connected prior to shipment.

The assembly contains a fine screen to protect the restriction from dirt. If the screen should become fouled, wash it off with a gentle stream of water. Do not scrape the screen, as you may force debris into the restriction and alter its properties. An obstructed restrictor cannot be recovered.



The 0700Q-12 assembly includes a short tube for the fogger power head, a quick connect fitting, a short length of suction tubing and a 0700-12 flow restrictor liquid entry.

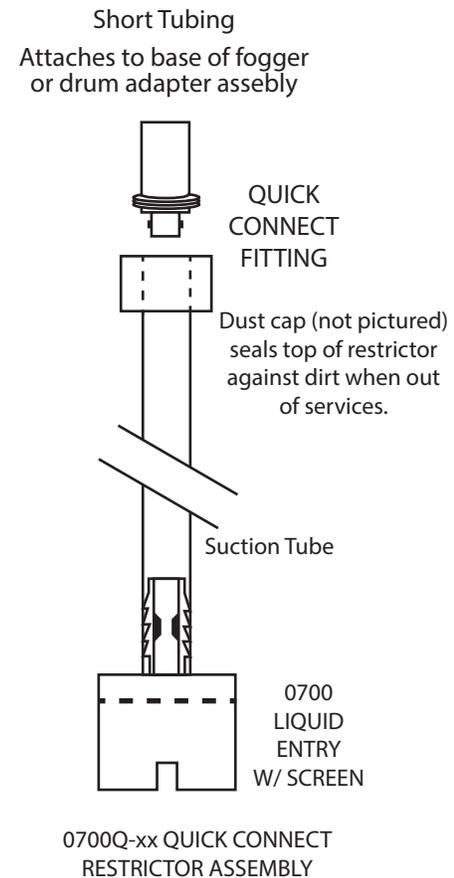
The quick connect fitting makes it easy to change the assembly. Just unscrew the twist lock fitting, remove the old assembly, transfer the dust cap and screw on the new assembly.

## Install Tank Liner

Loosen tank clamps and lift power head from tank. Remove extra plastic tank liners from tank.

Open a protective plastic tank liner and position it inside the tank (new units ship with a tank liner in place). The top of the liner should extend over and outside the top lip of the tank.

**NOTE: Although the stainless steel construction offers a measure of protection against chemical corrosion, we nonetheless also recommend use of the plastic tank liners as an additional barrier.**



**Overall Length**  
5 Inches (for hand held foggers)  
40 Inches (for drum mount foggers)

Add Actril Cold Sterilant to the tank (inside the tank liner). Confirm that the tank gasket is in place inside the lip of the cover plate. Put the power head on the tank and fasten clamps to secure it.



## PERSONAL PROTECTIVE EQUIPMENT (PPE)

**While handling the Actril Cold Sterilant, handlers must wear: goggles or face shields and protective rubber gloves.**

## OPERATION

Add Actril Cold Sterilant to the liquid tank.

Clamp the power head in place.

Using the instructions provided for the Actril Cold Sterilant, calculate the time required to achieve desired level of decontamination. You can control fogging time manually\* or with a timer\*\*.

Adjust the angle of the power head for the space you are treating (point the nozzle slightly up for maximum distance).

Aim fog output towards area requiring treatment. For space fogging, select the direction of greatest clearance so fog droplets can fill the space. Droplets that hit something will condense. You can also place the machine on a turntable.

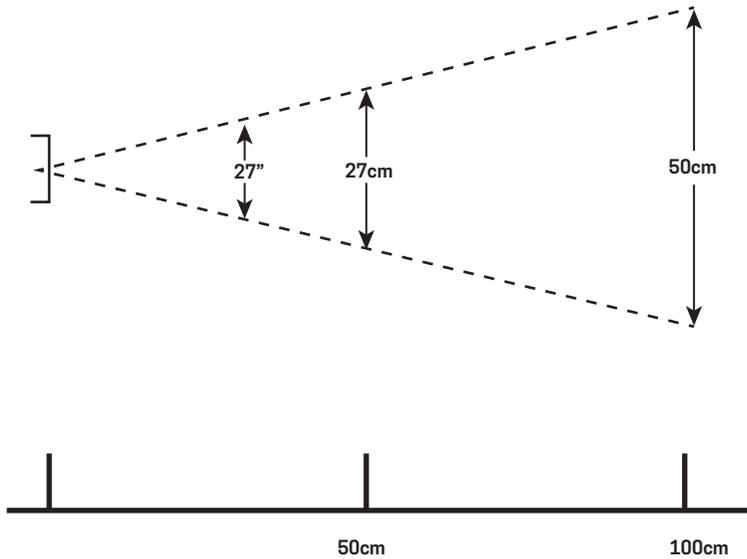
Turn on fogger.

\* Manual operation should never be performed without proper personal protective equipment (PPE). Refer to Actril Cold Sterilant Instructions for Use for appropriate guidance.

\*\* Operating the fogger with a timer is discussed in an accompanying document titled 'AMBUstat™ Timer: Instructions for Use.'

When carrying the fogger by hand, move it gently and slowly in a smooth arc. Sudden movements can impose excessive torque on the rapidly spinning fan blades and could cause premature blade failure.

The following diagram represents a controlled fog pattern spread



OUTER CIRCLE REPRESENTS PLUME CONTAINING 95+% OF FOG DROPLETS.

## EMPTYING THE FOGGER

Upon the expiration of the Actril Cold Sterilant (recommendation is 3 days after Actril Cold Sterilant was introduced into the tank for optimal efficacy), unclamp power head and discard any remaining Actril Cold Sterilant as per Actril Cold Sterilant's Instructions for Use, which is to dispose 'in a sanitary sewer or at an approved waste disposal facility.'

## MAINTENANCE

The major components of the fogger are identified herein. A detailed parts list and order form is included as a separate sheet with each unit.



**WARNING: Unplug fogger power cord from electrical outlet before attempting any maintenance operation.**

### Routine Maintenance

Clean fogger's exterior after each use. Wash outside of machine with a mild detergent and wipe with a soft cloth to maintain its appearance. **(Do not immerse machine.)** Replace motor brushes when they are completely worn.

## **Replace Intake Air Filter**

Unscrew filter cover plate to remove filter. Install new filter and replace cover. Tighten snugly.

## **Cleaning The Nozzle**

Deposits that form on the nozzle can degrade atomization performance. Try to dissolve deposits with soapy water, vinegar solution or CLR. Use the tank for convenience. Add about 2 inches of liquid to tank and immerse nozzle (front of power head). If this is not successful, replace nozzle assembly. Do not use a strong acid; it will attack the metal components. Never insert a probe into the nozzle opening; you may damage nozzle elements.

## **Simple Setup for Maintenance**

The tank gasket can help keep screws and other parts in position when you open the power head. Loosen cap nuts on housing screws slightly (do not remove). Remove rubber gasket from beneath cover plate and slide it over the rear housing, flat side first, until it touches the screw heads. Stand the power head on the filter and cover, remove cap nuts and lift front housing to expose internal components.

## **About Motor Brushes**

Two graphite brushes convey electric power to the motor commutator. Brushes are a consumable item and have a lifetime of about 650 operating hours. Operating without the air intake filter lets airborne dirt and moisture enter the motor, which can reduce brush life substantially. When brushes are worn the motor does not operate properly.

If you replace motor brushes, we recommend installing them in pairs and using MOTOR SAVER brushes. The MOTOR SAVER brush contains an insulating pin to shut down the motor when the brush is worn, minimizing the chance that the motor will drag and scratch the commutator. Replacement brush part numbers are:

033: Brush kit (pair, MOTOR SAVER), 120 VAC

034: Brush kit (pair, MOTOR SAVER), 240 VAC

## How To Replace Motor Brushes

Unplug power cord to prevent shock. Remove front housing (see “Simple Setup for Maintenance”) to access the motor. Identify the two motor brush housings on opposite sides at the top of the motor.

Insert a small flat blade screwdriver between the motor wire/terminal and the plastic brush housing. Gently pry terminal out, pushing it towards the commutator until it is loosened. Take care not to break the terminal contact or the wire. If the plastic brush housing is very tight, heat slightly with a hair drier or heat gun to soften before sliding the wire/terminal out. Repeat for the second brush.

Remove two Phillips head screws and retaining bracket holding one motor brush. Lift brush off motor frame and discard.

Hold replacement brush in position with the tab pointed down. Press the motor wire terminal (flat brass piece) partially into the brush assembly, between the brass shell and the plastic housing.

Push the brush assembly towards the commutator until the tab falls into the notch on the motor frame. Replace the retaining bracket and two screws. Then slide or pry the wire terminator securely back into the brush housing with the screwdriver.

Repeat for other brush.

## Damaged Power Cord

If the power cord is damaged, it must be replaced with an approved cord that includes a continuous line to ground (earth). Return unit to Fogmaster or authorized importing distributor for service.



**WARNING: A continuous ground (earth) line in the power cord is essential for safe operation. Do not operate machine without a continuous line to earth.**

## Replace Motor

Excessive wear on the motor commutator will shorten brush life unacceptably. In this case, you must replace the motor (see “Simple Setup for Maintenance”). Disconnect motor wires and remove old motor. **Note the sequence and orientation of the plastic motor gaskets and metal torque ring.**

Replace motor and reinstall gaskets and torque ring in proper sequence. **The bent tab on the torque ring must face the motor and be seated in the small hole on the motor frame.**

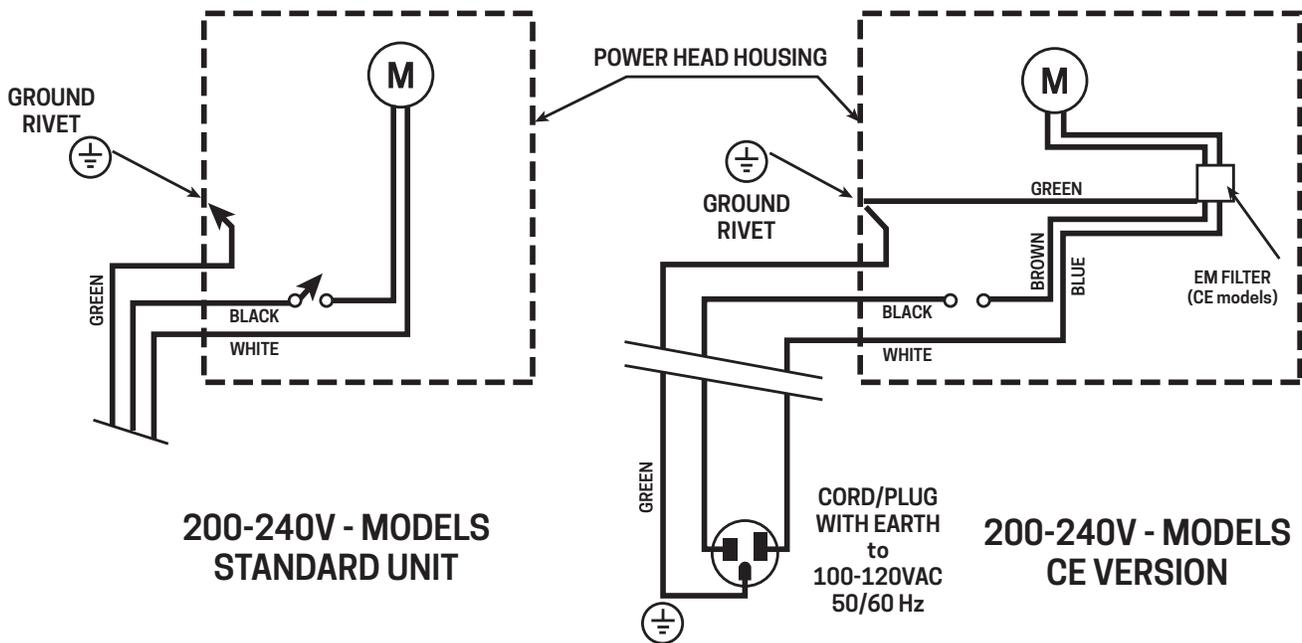
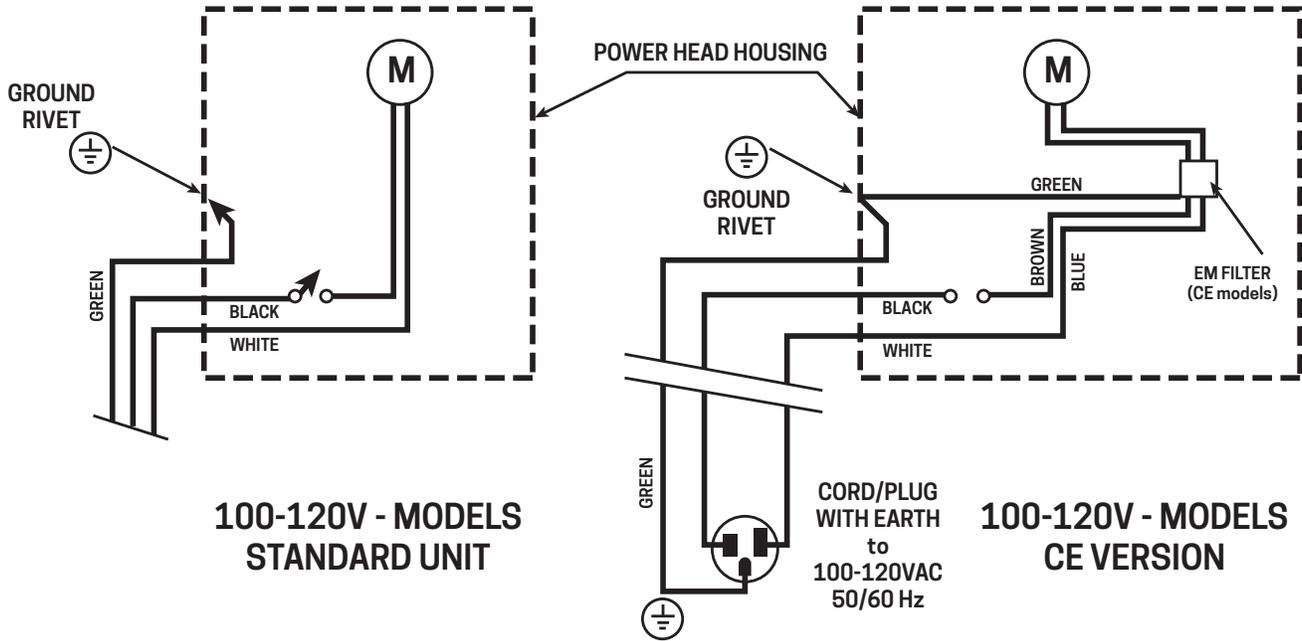
Reconnect electrical lines as shown on the circuit diagram.

## Replace Fan Blades

Twisting the machine aggressively while it is running will cause the fan blades to flex and rub against the fan housing with a shrill, grinding noise. Repeated flexing will eventually cause the fan blades to fail; the motor will operate, but not blow air.

To replace fan blade, open power head (see “Simple Setup for Maintenance”) and remove motor. Straighten the three bent tabs holding the fan housing to the motor frame. Remove fan housing and unscrew the 1/2” nut holding fan blade to motor shaft. Replace fan blade (part number = 040) and reassemble.

**NOTE: You may have to remove motor brushes and the aluminum armature bracket to grip the armature so it does not rotate when you unscrew the nut.**



## FOGGER CIRCUIT DIAGRAMS

## SPECIFICATIONS FOR AMBUstat™ FOGGER

<b>Nozzle Technology:</b>	Counter-rotating vortex design. High turbulence in nozzle shears feed liquid into fog-sized droplets. Nozzle has no small orifices and is resistant to plugging.
<b>Chemicals:</b>	Nozzle is designed for use only with Actril Cold Sterilant.
<b>Approx. Range:</b>	35 to 50 ft [10 to 15 m] with still air.
<b>Discharge Rate:</b>	0.44 oz [12.9 ml] /min, adjustable by changing fixed flow restrictor assembly Droplet Size, VMD: 2-10 $\mu$ (microns) Liquid viscosity and surface tension affect droplet size.
<b>Restrictor Assembly:</b>	Liquid entry: 300-series stainless steel Protective screen: 300-series stainless steel Keeper ring (secures screen): Nylon Quick-change fittings and caps: Polypropylene
<b>Liquid Capacity:</b>	1 gallon [4 L]
<b>Blower Motor:</b>	1 Hp, open frame universal type motor, 50/60 Hz 120V~, 8.0A 240V~, 4.0A
<b>Blower:</b>	Balanced fan, two- stage, 20,000 rpm (no load)
<b>Intake Filter:</b>	Cartridge type, fits over rear housing.
<b>Materials:</b>	Tank - stainless steel Fittings - stainless steel Tank gasket - Buna N Tubing - Viton® Nozzle - HDPE Power head housing - aluminum
<b>Dimensions:</b>	Product: LxHxDia: 14.0 x 15.6 x 8.6 in [36 x 40 x 22 cm]
<b>Shipping Carton:</b>	13 x 13 x 18 in [33 x 33 x 46 cm]
<b>Shipping Weight:</b>	13 lb [5.9 kg]

## WARRANTY

This product is warranted for one year from the purchase date against defects in materials and workmanship. If you have a warranty claim, return the unit freight prepaid to The Fogmaster Corporation. We will repair or replace (at our option) the unit and return it to you.

Motor brushes and tank gaskets are not covered under warranty.

This warranty does not apply to any unit which has been: subject to misuse, neglect or accident; used for a purpose for which it is not designed; altered in any manner; serviced by unauthorized parties; or subjected to any but the specified voltage.

This warranty is limited to the original purchaser only, and does not include claims for incidental or consequential damages resulting from the non-function or malfunction of this product or for breach of any express or implied warranties.

Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

This Limited Warranty notice replaces any other warranty or guarantee information accompanying this product or appearing in any literature referring to this product. Any implied warranties, including merchantability or fitness for a particular purpose, shall not extend beyond the warranty period.

CE (PS  
E) (certain models)



**WARNING:** Chemicals dispensed by this machine may be fatal if inhaled. Always follow safety precautions and directions for use of any chemical product.

In the interest of improving internal design, operational function and/or reliability, The Fogmaster Corporation reserves the right to make changes to the products described in this document without notice. The Fogmaster Corporation does not assume any liability that may occur due to the use or application of the product(s) described herein.

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