

TEC SERVICES, INC.
ELECTRIC AEROSOL GENERATOR SPECIFICATIONS AND OPERATION
MANUAL (Model: AG-E3)

Congratulations on your purchase of the TEC Services Inc. AG-E3 Aerosol Generator. This guide will inform you of the proper use and specifications of the AG-E3.

<u>DIMENSIONS:</u>	<u>WEIGHT:</u>	<u>CONTENTS:</u>
Depth = 14.5" Height = 9.75" Width = 11.25"	35 lbs. Dry 37 – 38 lbs. w/ Liquid	Hose Barb (1) Operating Instructions Line Cord, Spare Fuse

AEROSOL GENERATION
.25 → 1.5 Laskin Nozzle Type

OUTPUT
10-ug/L concentration into 2025 cfm (1.5 Laskin Nozzles mixed with 1350 CFM air flow)
100ug/L concentration into 34 cfm (.25 Laskin Nozzles mixed with 135 CFM air flow)

VOLTAGE REQUIREMENT:
120V/60Hz Standard
(220V/50Hz Special Order - Aerosol Output may be less when operated at this voltage).

OPERATION:

- 1) Fill reservoir via RED cap with PAO or other desired oil to a level visible in the sight glass and not to exceed the middle of sight glass.
- 2) Connect the hose-barb fitting to the threaded aerosol outlet port in back of unit. Connect hose to the hose barb.
- 3) Adapt hose to aerosol inlet connection if needed (hose and/or adaptors not included).

WARNING: Final hose connection to aerosol inlet connection must be a minimum diameter of ¼" and a length not greater than 6 feet. Total hose length not to exceed 25 feet. Not adhering to this instruction will increase the risk of the aerosol reservoir developing leakage.

- 4) Plug unit into a 120V/60Hz outlet (or 220V/50Hz if required).
- 5) **NOTE: REDUCE PRESSURE PRIOR TO START-UP IF OPERATING .25 NOZZLES**
- 6) Place illuminated power switch to ON Position.
- 7) Adjust pressure between 7-25 psi on pressure gauge to obtain a minimum of 10 micrograms per liter of aerosol concentration when sampling upstream of the filter.

NOTE: If unable to sample the upstream concentration, turn the PRESSURE ADJUST to read 23 psi on the pressure gauge (when using PAO or 20 psi when using DOP). Then calculate the upstream concentration using the following equation:

Aerosol Concentration (when using 1.5 Laskin Nozzles @23psi with PAO or 20psi with DOP) = 20250/Airflow Volume Where concentration will be given in micrograms/liter and airflow volume is given as number of cubic feet/minute of airflow.

Example: You are testing a HEPA filter system with a known flow rate of approximately 1500 cubic feet per minute. After setting the AG-E3 Nozzle Pressure to 23 PSI (when using PAO oil or 20 psi when using DOP), you can use the formula to estimate your upstream concentration.

$$\text{Aerosol Concentration} = 20250/1500 = 13.5 \text{ ug/L}$$

You can now adjust your Aerosol Photometer to establish your 100% baseline according to the manufacture instructions and begin testing the filter.

Aerosol Concentration(when using **.25 Laskin Nozzles @23psi with PAO or 20psi with DOP**) = **3375/Airflow Volume** Where concentration will be given in micrograms/liter and airflow volume is given as number of cubic feet/minute of airflow.

8) After testing the filter, turn off the AG-E3 to avoid unnecessary loading of the HEPA filter with aerosol particulate.

MAINTENANCE

About once a year, under daily operation, drain all liquid (PAO, DOP, Etc) and flush with a solvent to remove any residue from the unit. If a liquid such as mineral or corn oil, it will be necessary to flush out quarterly.

TROUBLESHOOTING

The AG-E3 Aerosol Generator has been designed to give years of trouble free service. However, should you experience problems, please consult the following guide.

Problem	Solution
Generator does not power up.	Make sure that unit is plugged into an operating voltage outlet.
	Check fuse inside of Power Entry Module and replace with same type and voltage.

No Aerosol Output	Out of Aerosol Fluid. Fill AG-E3 to recommended level.
	Nozzle Pressure too low. Increase pressure until output is observed.

Low Aerosol Output; e.g. <10 ug/L	Nozzle Pressure set too low. Increase to achieve acceptable level of output.
	Nozzles 'valve' on .25 as opposed to 1.5
	Fluid Level too low. Add fluid as described in previous section.
	Filter system greater than 2025 cfm.
	Aerosol Nozzle clogged - consult factory for service.

CAUTION **Before Shipping Unit**

- 1. Drain all PAO/Liquid from unit.**
- 2. Be sure PAO/Liquid Fill cap and drain plugs are tight.**

If you have any questions regarding the AG-E3, HEPA filter testing, or any of our other filter testing products, please feel free to contact us:

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