

# SGA21-22 Quick Start Manual

Pacific Ozone Technology, Inc.



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# Warranty

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All Pacific Ozone Technology products are protected by a one year unlimited warranty.

This warranty covers all parts and labor for all products used under normal operating conditions and procedures as described in the owner/operator manual supplied with each product. Pacific Ozone Technology's obligation under this warranty is limited to the repair, replacement, or return/refund of the unit or component determined to be defective.

Any misuse, improper operation or installation of any Pacific Ozone Technology parts or equipment, as determined by Pacific Ozone Technology, will void any and all warranty claims to the primary component as well as all supporting components.

Any repairs, modifications, or services performed by someone other than a Pacific Ozone Technology authorized technician will void any and all warranty claims to the primary component as well as all supporting components.

Pacific Ozone Technology shall not be liable to the purchaser or others for loss of use of the generator or for other special, indirect, incidental or consequential damages.

The Pacific Ozone Technology warranty policy does not cover shipping and handling charges incurred during the warranty claim process.

Specific examples of voided warranty actions:

- Allowing water to enter the generator.
- Supplying feed gas that is not clean and free of oil or other contaminants.
- Supplying feed that is not dry to -60° F minimum dew point.
- Connecting an improper incoming power source to the unit that does not match the incoming power requirements as outlined in the owner operator manual.
- Locating the generator in an environment that is not well ventilated and protected and does not remain between 32 °F (0 °C) and 100 °F (43 °C) as outlined in the manual.

## **Limits Of Liability**

Pacific Ozone Technology shall not be liable for any special, indirect, incidental or consequential damages that result from the use or malfunction of the ozone generator and/or any of its components.

Pacific Ozone Technology equipment and components are sold for use in industrial and commercial applications only.

# Safety

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Carefully review and familiarize yourself with the following important safety information statements concerning Pacific Technology Ozone Generators.

**WARNING:** Oxygen is a fire hazard. It is very dangerous and vigorously accelerates the burning of combustible materials. To avoid fire and/or explosion do not use oil, grease, cotton fibers and any other combustible material on or near the ozone or oxygen generators. Smoking, heat and any open flame should be kept at a distance of no less than 5 feet from any part of the system. It is **STRONGLY** recommended that only individuals experienced in the safe handling of oxygen be allowed to operate this equipment.

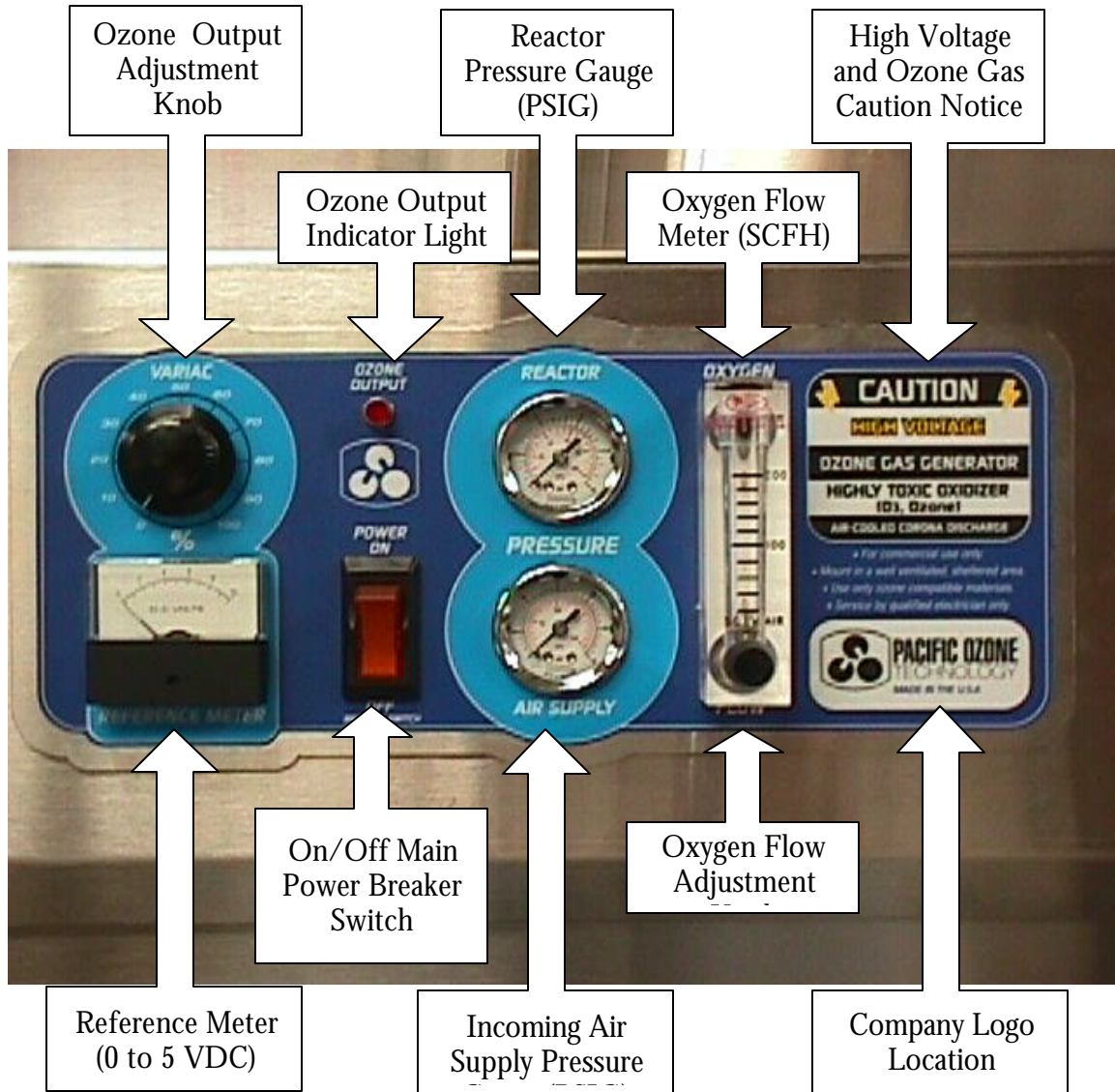
**WARNING:** OSHA exposure limit to ozone is 0.1 PPM for a period of 8 hours.

**WARNING:** Ozone is a highly toxic oxidizer. Ozone has a distinctive odor, which is easily recognized at very low concentrations. If this odor presents itself at any level, unplug the generator and contact your installer.

**WARNING:** Do not use extension cords with this unit.

**WARNING:** High voltage and high capacitance is present in ozone generators. Only qualified electricians should work on this equipment.

# Control Panel Layout



# Control Panel Operation

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**Oxygen Flow Meter (SCFH):** Indicates the amount of oxygen feed gas that is fed through the ozone production cells.

**Oxygen Flow Meter Knob:** Controls the amount of oxygen feed gas that is fed through the ozone production cells.

**Reactor Pressure Gauge (0-15 PSIG):** Indicates the level of backpressure being put on the ozone generator by the “Back Pressure Adjustment Valve” which is located on the upper right side of the ozone generator enclosure just behind the “Ozone Out Port”. The “Back Pressure Adjustment Valve” should be adjusted so the gauge is set between 3 and 6 PSIG. MAXIMUM continuous operating pressure is 12 PSIG. The MAXIMUM reactor cell pressure is 15 PSIG. Higher pressures may cause damage to the ozone generator and will void the manufacturers’ warranty.

**Incoming Air Pressure Gauge (0-30 PSIG):** Indicates pressure incoming pressure of the air being supplied by the external compressed air source which is connected to the incoming filter/regulator located on the upper left side of the machine side panel.

**Reference Meter (0-5 Volts DC):** Indicates the control signal demand being sent to the ozone generator either by the “Adjustment Control Knob” or by an external control signal.

**Ozone Output Indicator (Red Light):** Verifies that the ozone modules are working and producing ozone.

**Ozone Output Adjustment Knob:** Controls ozone produced by the machine from 0% through 100% of the certified maximum ozone production printed on the serial number and certification plaque attached to the left side of the machine next to the incoming power access port.

**On/Off Main Power Breaker Switch (Amber Light):** Controls incoming power to the entire ozone generator.

**Company Logo Location:** Space for our or your company logo. Contact Pacific Ozone for more information.

# Installation

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## Location Requirements:

- Clean and dry
- Well ventilated
- A 24" minimum free air space must be maintained on all sides of the ozone generator
- Stable concrete or similar placement surface
- Ambient temperature - 32° F (0° C) to 100 °F (43° C)
- A degree of protection form air borne water and dirt

## Electrical Requirements:

- Dedicated 115/240 VAC - 15-amp outlet on a circuit with disconnect a maximum 50 feet away and in the line of sight of the ozone generator's operator panel.

NOTE: Incoming power must be free of any power surges or spikes.

- Do not add or remove length to the incoming power cord.
- The generator must be grounded to an external ground source supplied with the incoming power wiring.

## Plumbing Requirements:

- Required air supply: SGA21 - minimum 3 SCFM @ 20 PSIG  
SGA22 - minimum 6 SCFM @ 30 PSIG

**WARNING:** No liquid water should be allowed to enter the ozone generator. The compressed air inlet water load saturated at 120°F at 30 PSIG is acceptable (.0216 lb water/lb dry air)

**WARNING:** No oil in either vapor or aerosol form greater then 0.008 ppm should be allowed to enter the ozone generator. Air quality should be equivalent to the output of an oil-less compressor (no hydrocarbons).

- The compressed air connection is to the filter/regulator with a ¼" npt connection port on upper right side of the generator.
- Ozone out is connected from a stainless steel ¼" compression fitting on the bottom left side of the generator.
- It is recommended that an anti-siphon loop or other back flow protection be used to prevent water from backing up into the ozone production cells. Damage incurred from water is not covered by the manufacturers' warranty.

# Start Up

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1. Make sure the “On/Off Main Power Breaker Switch (amber) is in the OFF position.
2. Close the “Air Inlet Filter/Regulator” to prevent over pressurizing the unit on start up.
3. Connect incoming compressed air source to the “Air Inlet Filter/Regulator”.

**WARNING:** No liquid water should be allowed to enter the ozone generator. The compressed air inlet water load saturated at 120°F at 30 PSIG is acceptable (.0216 lb water/lb dry air).

**WARNING:** No oil in either vapor or aerosol form greater than 0.008 ppm should be allowed to enter the ozone generator. Air quality should be equivalent to the output of an oil-less compressor (no hydrocarbons).

4. Completely open the any backpressure control valves that you have installed in the ozone output line.
5. Connect ozone output through an anti-siphon loop to application connection.
6. Set the “Ozone Output Adjustment Knob” to 0%.
7. Turn the “On/Off Main Power Breaker Switch (amber) to the ON position.
8. Open the “Air Inlet Filter/Regulator” and set it to a 30 PSIG indication on the “Incoming Air Supply Pressure Gauge”.
9. Set the “Oxygen Flow Adjustment Knob” so that the “Oxygen Flow Meter” indicates (10 SCFH – SGA21) (20 SCFH – SGA22). This will have to be reset and balanced with the “Ozone Reactor Pressure Gauge” setting.
10. Set the ozone reactor pressure by installing and adjusting a backpressure valve on the ozone output line and viewing the pressure against the “Reactor Pressure Gauge”. This indicates the level of backpressure being put on the ozone generator cells. The “Back Pressure Adjustment Valve” should be adjusted so the gauge is set between 3 and 6 PSIG. MAXIMUM SETTING is 12 PSIG higher pressures will cause damage to the ozone generator and will void the manufacturers’ warranty.
11. To control the amount of ozone production, rotate the “Ozone Output Adjustment Knob” clockwise. The signal demand can be seen on the “Reference Meter” and the activation of the ozone generator cells will be indicated by the “Ozone Output Indicator Light”

**NOTE:** Ozone production does not begin until the “Reference Meter” indicates 2.5 Volts DC or above.

# Internal Sensors

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**High temperature sensor:** If the temperature of the ozone generator cell exceeds 160°F the cell will shut down. This is to protect the electronic components from excessive heat. After the temperature of the cell drops below the set point the unit will re-engage. The ambient environment must be below 110°F to ensure this over temperature cycle does not occur.

# Maintenance

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## Cleaning

- DO NOT clean generator while in operation.
- Keep the air intake and exhaust louvers clear and free from obstructions.
- Keep cooling fan intake openings and screens clear and free from obstructions.
- External surfaces and components can be cleaned with water and a mild detergent.
- The incoming compressed air filter regulator auto drain valve must be cleaned and checked for proper operation periodically depending on the source air quality.

## Service

- Under normal use and operation the SGA series of ozone generators have no standard serviceable parts.
- Any external filters for incoming air preparation must be serviced according to the manufacturers' instructions. This would include compressed air water and oil filters.

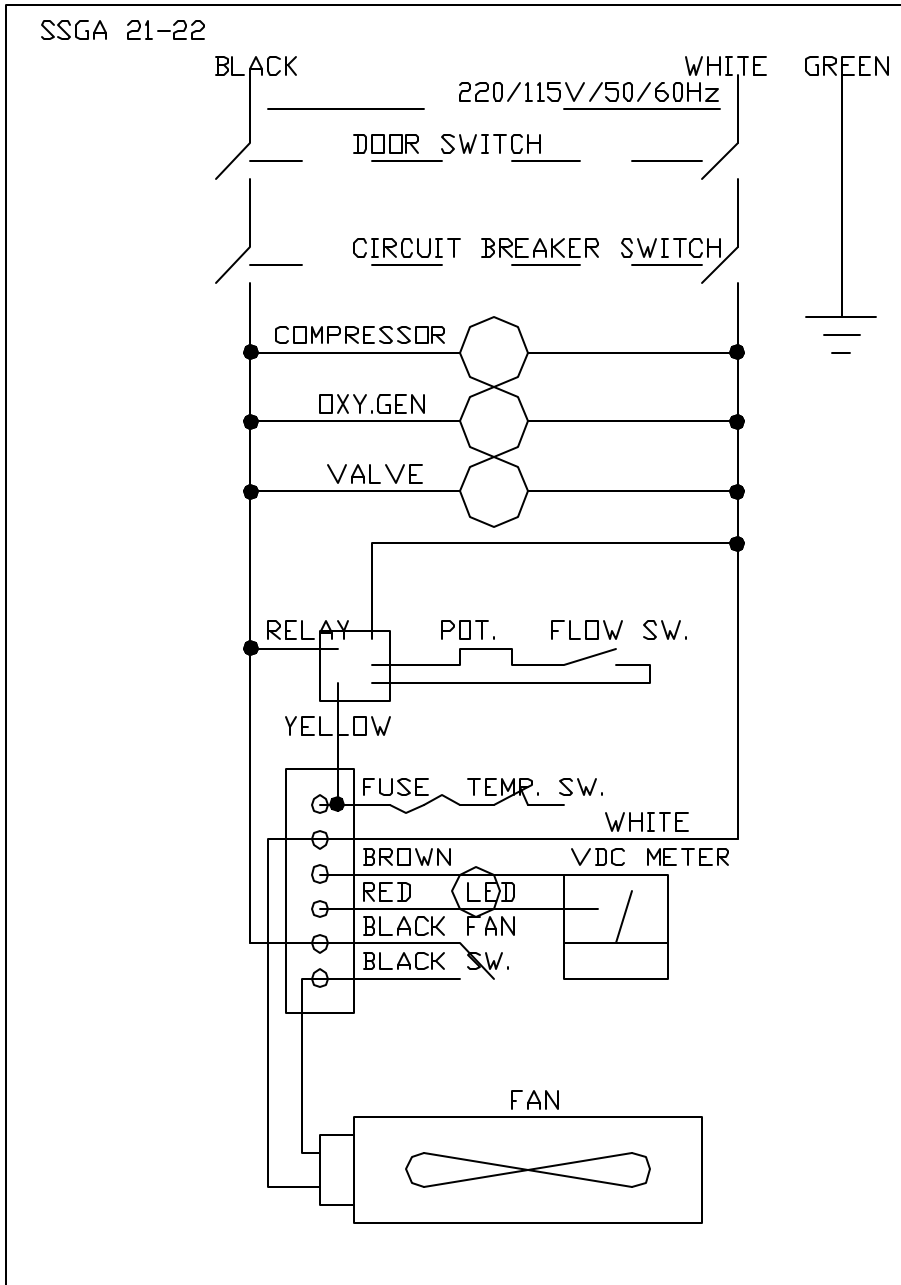
# Shut Down

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1. Rotate the “Ozone Output Adjustment Knob” counterclockwise to 0%, wait until the “Reference Meter” indicates less than 2 Volts DC, and the red “Ozone Output Indicator Light” is off.
2. Allow two minutes to purge ozone out of system.
3. Turn the amber “On/Off Main Power Breaker Switch” to the OFF position.

**NOTE:** In a shut down mode, air or oxygen in a receiver tank may expand and contract. This will cause water to be pulled over the anti-siphon loop. During shut down, open the receiver tank to atmosphere or disconnect the Ozone generator from the Air or Oxygen line.

# SGA21-22 Schematic



# SGA21-22 Automatic

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# SGA21-22 Filter / Regulators

Replacement  
Filter Elements  
5 - Micron Particle  
Coalescing Element



Filter / Regulator  
With  
Coalescing Filter  
Orientation

# SGA21-22 Image

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