

SGA23-24 User Guide



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Warranty

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

This warranty covers all parts and labor for all Pacific Ozone Technology 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 repair, modifications, or service 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.

Warranty of equipment and / or accessories from outside sources, purchased by Pacific Ozone Technology and incorporated into Pacific Ozone Technology products, is subject to that manufacturer's standard warranty. A copy of the aforementioned warranty is available on request.

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

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

The warranty will be voided by the following:

- Allowing water to enter the ozone generator.
- Supplying feed gas that is not clean and free of oil or other contaminants.
- Supplying feed gas that is not dry to -60° F minimum dew point (excluding generators that have onboard oxygen concentrators).
- Supplying feed water above 30 psig without utilizing a pressure reducing valve.
- 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 any product in an environment that is not well ventilated and protected and that does not remain between 32° F (0° C) and 100° F (38° C) as outlined in the product documentation.

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 any system, 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

Carefully review and familiarize yourself with the following important safety information statements concerning Pacific Ozone Technology 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, never use oil, grease, cotton fibers or any other combustible material on or near the ozone or oxygen generators. Smoking, heat, and 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. (Ref. OSHA Air Contaminants Standard, 29 CFR 1910.1000) (EU Directives - 96/62/EC, 92/72/EC, 99/30/EC.)



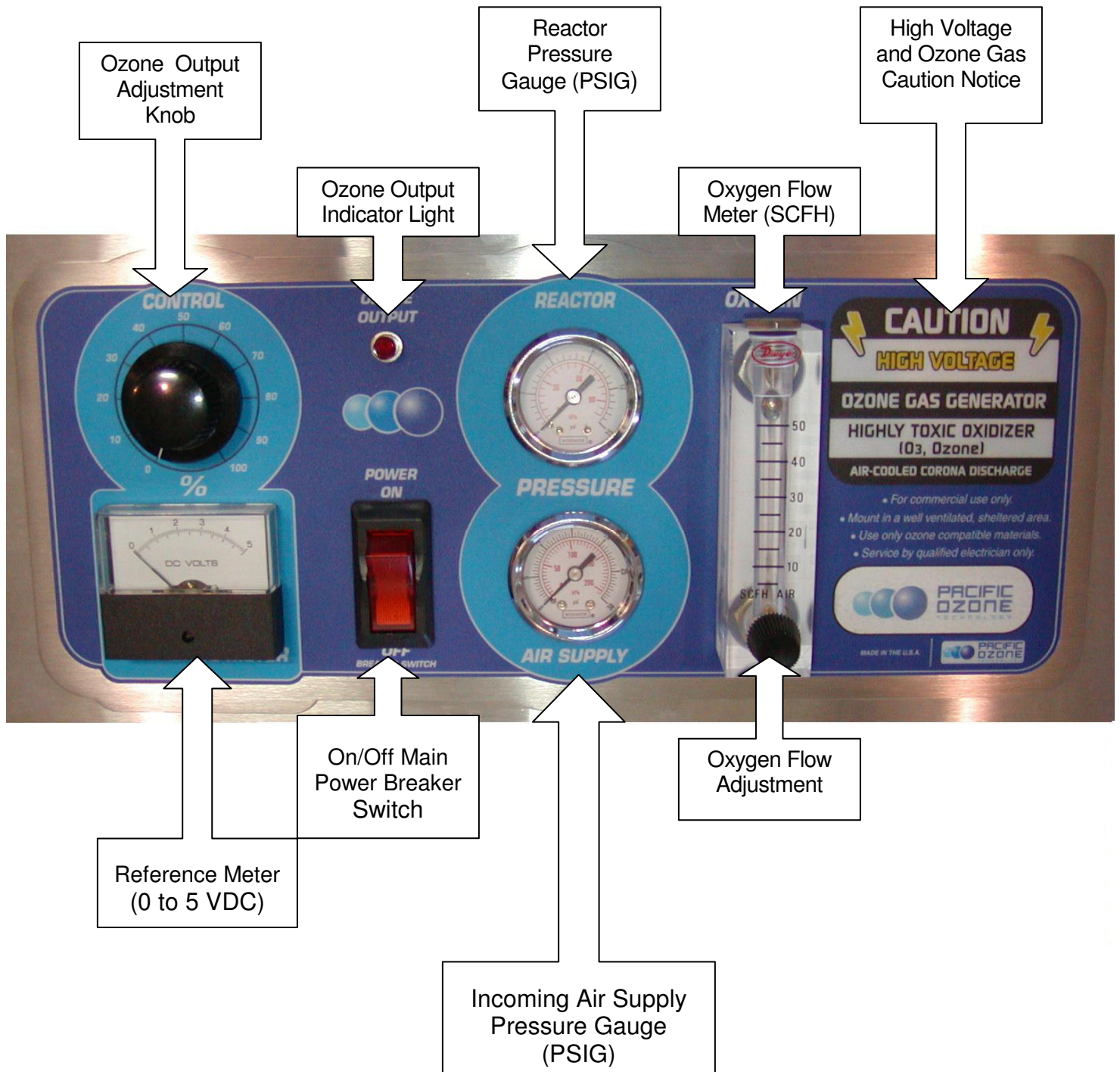
WARNING: Ozone is a highly toxic oxidizer. Ozone has a distinctive odor, which is easily recognized at very low concentrations. If this odor presents itself at any level, disconnect the generator and contact your installer.



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

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

Gas 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. A **Back Pressure Adjustment Valve** (see below), located at the bottom of the ozone generator enclosure, controls the amount of back pressure on the ozone reaction cell. **The Back Pressure Adjustment Valve** should be adjusted so the gauge is set between 3 and 6 PSIG. MAXIMUM continuous operating is recommended at 9 PSIG. The MAXIMUM reactor cell pressure is 12 PSIG. Higher pressures can damage the ozone generator and could void the manufacturer's warranty.

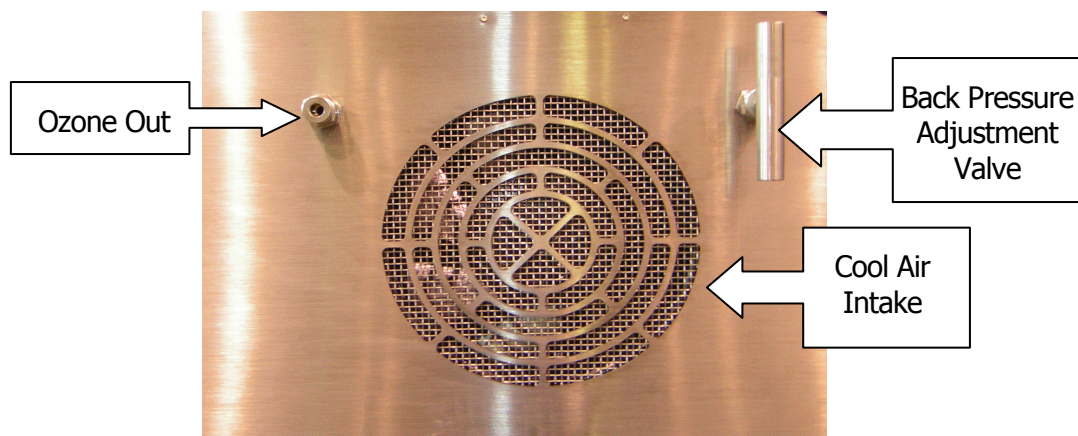
Incoming Air Pressure Gauge (0-30 PSIG) Indicates incoming pressure of the air being supplied by the external compressed air source.

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 generator 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 generator next to the incoming power access port).

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



(Bottom View of Generator)

Installation

Location Requirements:

- Clean and dry
- Well ventilated
- A minimum 24 inches of free air space 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 from airborne water and dirt

Electrical Requirements:

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

WARNING: Incoming power must be free of any power surges or spikes* greater than 15% of rated voltage i.e. 135 vac max. for 115 vac power and 282 vac max. for 240vac power. (* spikes < 0.5 seconds in duration.)



- 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.
- Ozone out is connected from a stainless steel 1/4" 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 caused by water is not covered under the manufacturer's warranty.

Plumbing Requirements:

- Required air supply: SGA23 - minimum 9 SCFM @ 20 PSIG
SGA24 - minimum 12 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 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)

- The compressed air connection is to the filter/regulator with a 1/4" npt connection port on upper right side of the generator.
- Ozone out is connected from a stainless steel 1/4" compression fitting on the bottom left side of the generator.
- An anti-siphon loop or other back flow protection should be used to prevent water from backing up into the ozone production cells. Damage caused by water is not covered by the manufacturer's warranty.

Start Up

1. Make sure the **On/Off Power** switch 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 **Backpressure Adjustment Valve** (pg. 4).
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** 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 **Gas Flow Adjustment Knob** so that the **Gas Flow Meter** indicates (30 scfh – SGA23) (40 scfh – SGA24). This will have to be reset and balanced with the **Ozone Reactor Pressure Gauge** setting.
10. Set the ozone reactor pressure by adjusting the **Back Pressure Adjustment Valve** (pg. 4) and viewing the pressure against the **Reactor Pressure Gauge** (pg. 3). 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. The MAXIMUM continuous operating pressure is 9 PSIG. The MAXIMUM reactor cell pressure is 12 PSIG. Higher pressures may damage 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

High temperature sensor If the temperature of the ozone generator cell exceeds 160°F, the cell will shut down 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 that this over-temperature cycle does not occur.

Shut Down

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 **On/Off Power** Switch to the OFF position.
4. Close the **Back Pressure Adjustment Valve**.

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

Air Requirements for SGA Series

- No liquid water should be allowed to enter the ozone generator.
- Compressed air input water load equivalent to saturated air at 120°F at 35 psig is acceptable (0.216 lb. water/lb. dry air).
- 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 output of oil-less compressor (no hydrocarbons). (Contact your air compressor manufacture or service provider for the proper components to meet this air specification.)
- Proper function of the inlet air solenoid valve is required to protect oxygen system.

Maintenance

Cleaning

- DO NOT clean generator while in operation.
- Keep the air intake and exhaust louvers clear, clean and free from obstructions.
- Keep cooling fan intake openings and screens clear, clean and free from obstructions.
- Clean external surfaces and components with water and a mild detergent.
- Inspect the incoming compressed air filter/regulator and auto drain valve and check for proper operation periodically depending on the source air quality. Replace when necessary.
- Inspect the coalescing filter element(s) for proper operation. Replace when necessary.

Service

The SGA series standard serviceable parts are listed in the *Spare Parts List* (pg.14).

Any external filters for incoming air preparation, (including compressed air, water, and oil filters) must be serviced regularly according to the manufacturers' instructions.

Technical Support

Technical Support and Parts

Technical support is available by telephone directly from Pacific Ozone Technology at **(707) 747-9600**. When calling, please have the following information available:

- Model number
- Serial number
- Brief description of installation
- Confirm line voltage
- Confirm inlet air quality and flow
- Confirm location ventilation

Requests for parts or service may also be faxed to **(707) 747-9209** or sent by e-mail to **service@pacificozone.com**.

Online Support

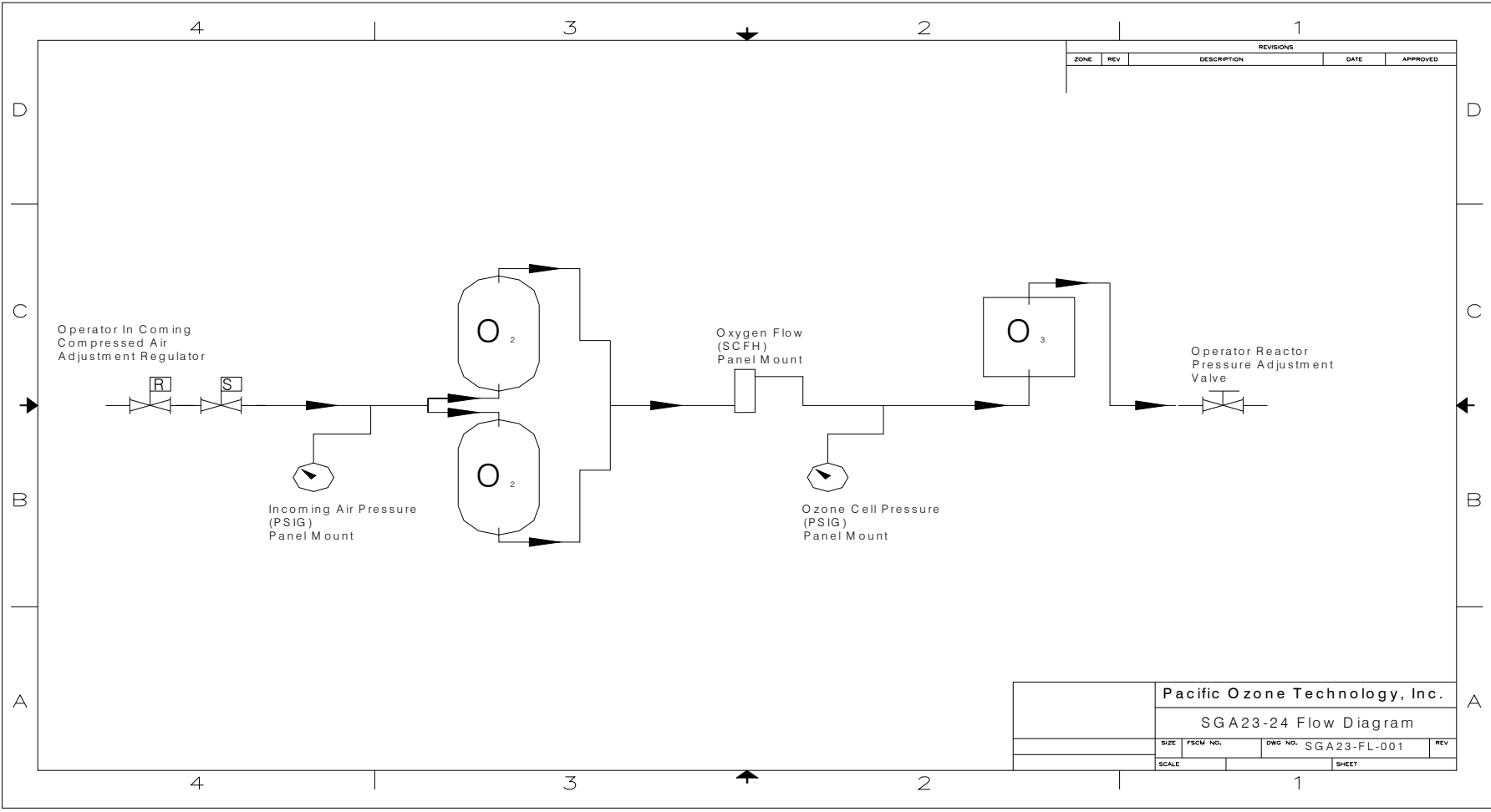
Technical Online Support is available through the Pacific Ozone Technology web site at www.pacificozone.com and includes topics such as:

- Basic start up procedures
- Troubleshooting guides
- Product specifications

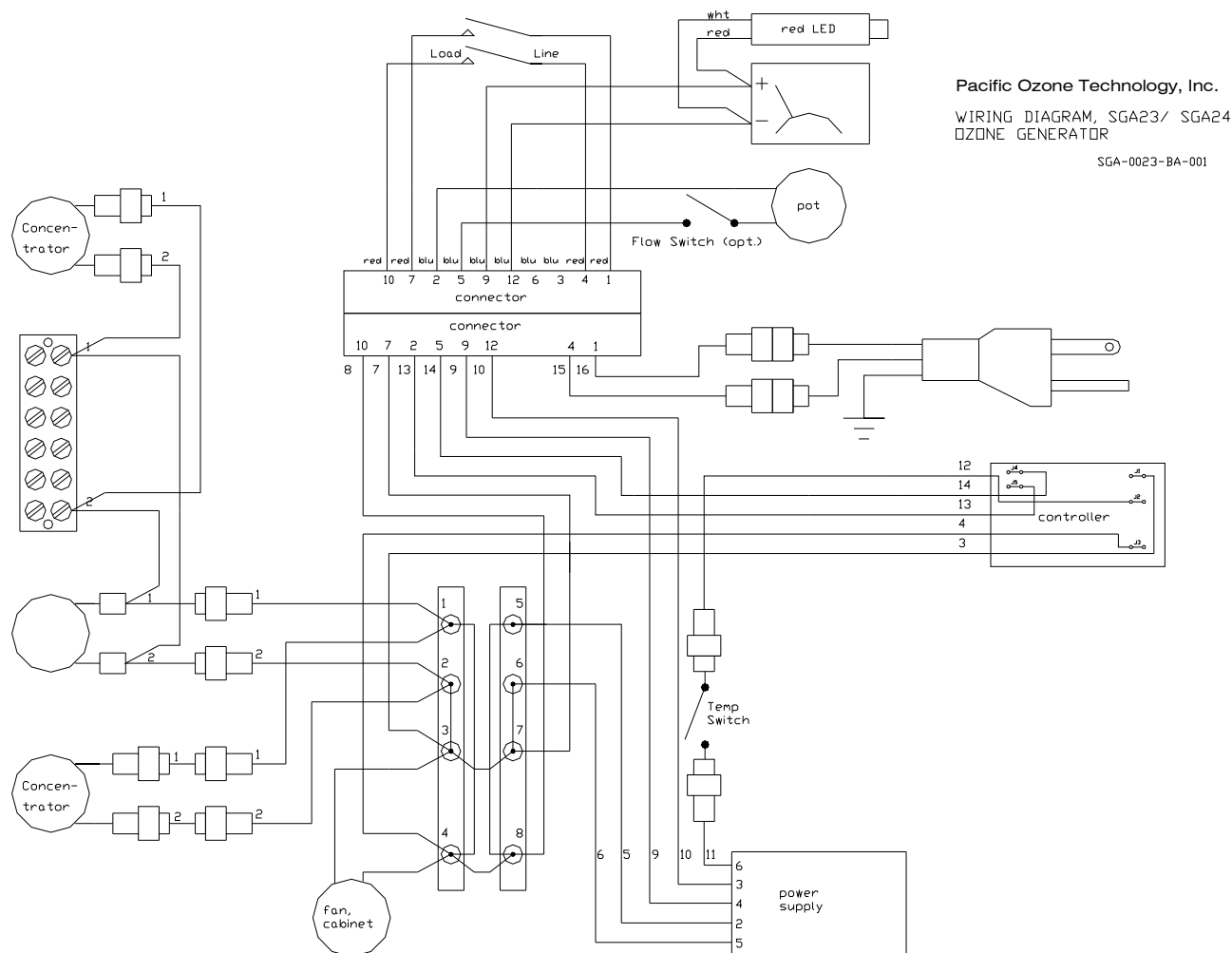
Field Services

Complete field services are also available. Please contact Pacific Ozone Technology Services for prices and scheduling. Pacific Ozone Technology will confirm all field service requests in writing prior to scheduling.

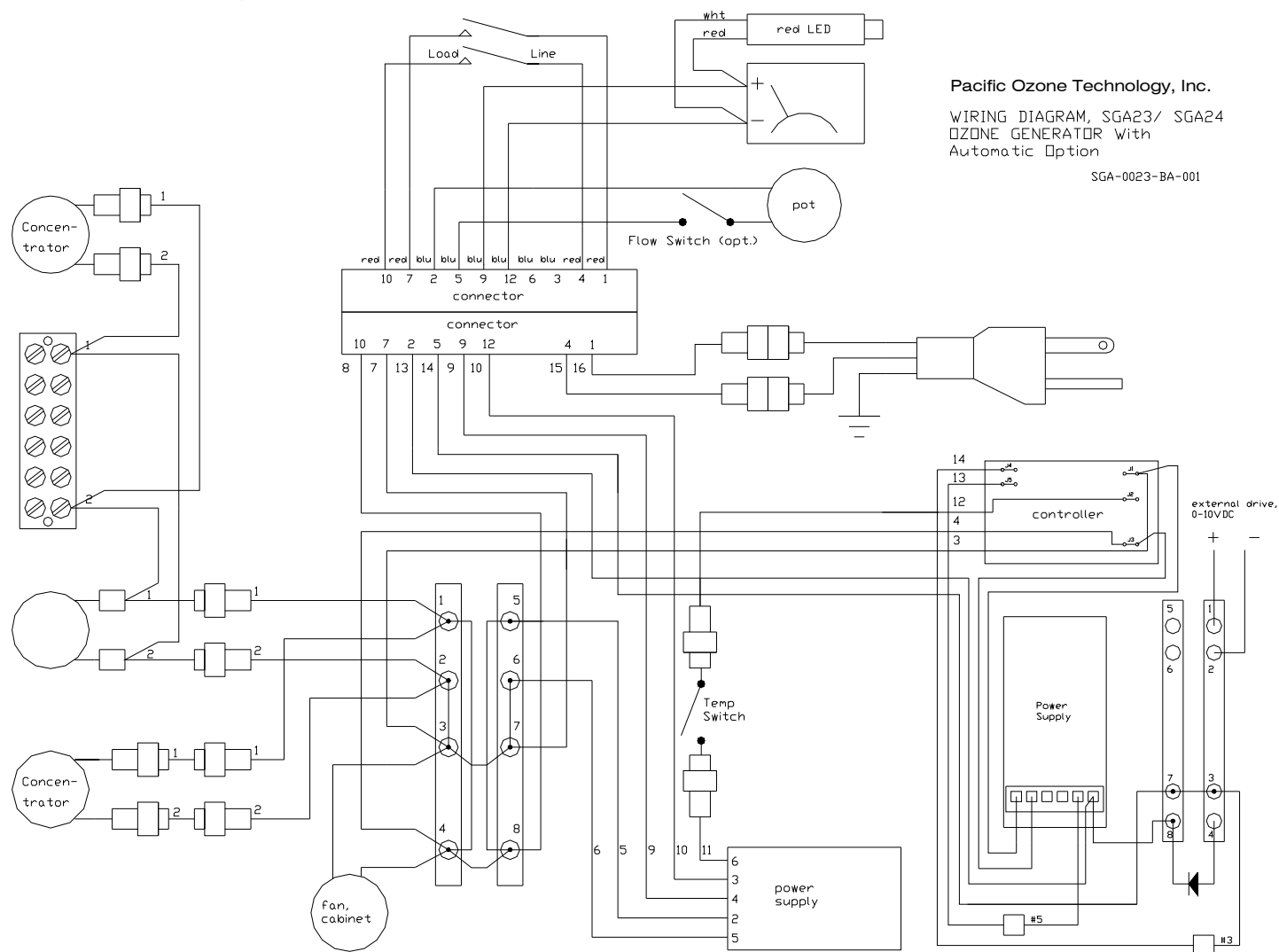
SGA23-24 Flow Diagram



SGA23-24 Wiring Schematic (manual)



SGA23-24 Wiring Schematic (automatic)



Spare Parts List SGA23-24

SGA Model	115V Part No.	230V Part No.	Description
23	S03001	S03002	Complete Chassis – Includes Ozone Module, Power Supply, and Controller
24	S04001	S04002	Complete Chassis – Includes Ozone Module Power Supply, and Controller
23,24	Y02005	Y02005	Oxygen Concentrator (2 units per generator)
23,24	L01004	L01004	Operator Control Panel
23	M03001	M03001	Assembly - Ozone Module
24	M04001	M04001	Assembly - Ozone Module
23,24	T04013	T04013	Power Supply HO 115/230V with Fan
23,24	V04001	V04002	Controller
23,24	IFC451	IFC452	Fan 240 SCFM *
23,24	ASR071	ASR071	5-micron filter element*
23,24	ASR137	ASR137	Coalescing filter element*
23,24	EEC166	EEC166	Fuse 8 Amp
23,24	PPC156	PPC156	Ferrell – Stainless steel compression
23,24	PPC157	PPC157	Nut -- Stainless steel compression
<i>*General maintenance parts</i>			



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