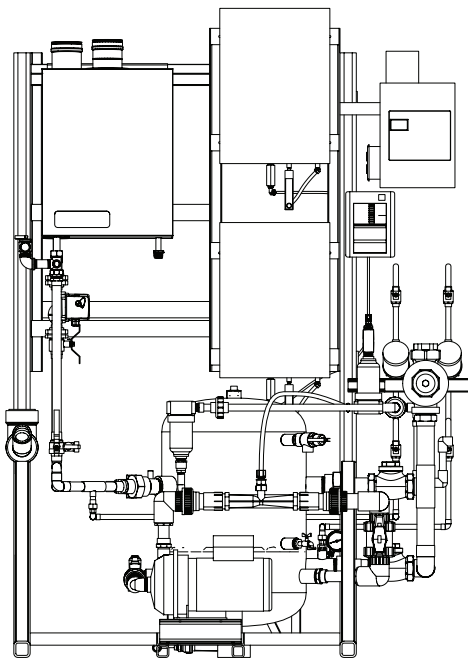
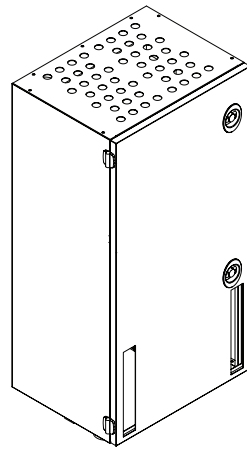


ADDENDUM TO LIT91236

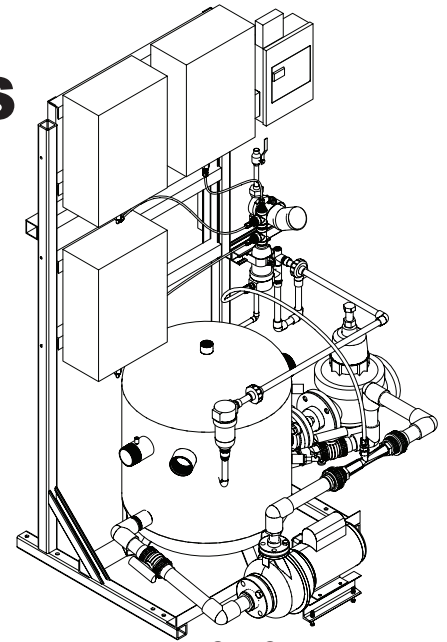
SAN-O₃-TYZER OZONE SYSTEMS



San-O3-tyzer Complete



San-O3-tyzer Lite



San-O3-tyzer

Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

WHAT TO DO IF YOU SMELL GAS:

- Do not try to light any appliance
- Do not touch any electrical switch
- Do not use any phone in your building

Immediately call your gas supplier from a neighbor's phone. Follow the gas supplier instructions. If you can not reach your gas supplier, call the fire department.

The San-O₃-tyzer System is designed and manufactured by Hamilton Engineering. The Ozone Generator and related mixing devices are a product of Aquawing Ozone Systems. San-O₃-tyzer patent pending.



WARNING

If the information in this manual is not followed exactly, a fire or explosion may result causing property damage, personal injury or death.



WARNING

These appliances **MUST** be installed by a properly licensed individual in the City and State which the unit is being installed. All start up adjustments and subsequent service work must be done by a similarly licensed contractor or a factory trained service individual. Failure to comply could result in loss of warranty and or severe personal injury, death and or substantial property damage. ***These instructions are required to be kept with the appliance in the pocket provided.***

All safety precautions referenced to in LIT91236 (San-O-Tyzer Installation and Operating Manual) should be STRICTLY adhered to!

A. START-UP AND TESTING – MODEL 3600-V

All safety precautions referenced to in LIT91236 (San-O-Tyzer Installation and Operating Manual) should be STRICTLY adhered to!

Step 0: Install the ORP sensor in the outlet water line at the back of the tank—be sure you remove the protective cap filled with the sensor tip storage solution. Keeping this cap on preserves the factory calibration during shipping and installation, the sensing tip must remain moist at all times, never being dry for more than 24 hours, so, it is removed for shipping and must be re-installed when you are ready to fill the system (removed the plug at the port labeled ORP sensor. You must also install the Thermal Flow Sensor in its port.

Step 1: Check for leaks at all tubing connections.

Step 2: Check both air vents for leaks and air/water flow;

- a. Upright unit off tank should have water half way up the clear sidewall and should have excess ozone bubbling through during production only
- b. Inverted air vent off Ozone Generator should not have any water showing in it

Step 3: If necessary, adjust the water flow sensor (used to turn on ozone generating system based on store demand). This sensor is factory-set at a typical single washer fill rate; however, at start-up, you must perform the test laid out below, as further adjustment may be required to ensure the system starts at the single (smallest) washer fill settings. The indication the system is starting can be confirmed by the starting of the ozone injection loop pump, and the green LED on the ORP meter turning orange/yellow.

- a. Remove the protective cap from the wiring end of the TDS Flow Sensor, start the smallest washer, the red LED light should turn off within 10 seconds, if it does not, adjustment is required: see manual, page 23: SETTING THE THERMAL FLOW SWITCH below, for adjustment instructions.
- b. Stop all water flow to washers, which will turn off Ozone Generator and the ozone injection pump, confirmation will be by the red LED turning back on, on the BL, and the green going off on the 208. The small building recirculation pump will run on a time clock, to further distribute ozonated water throughout the laundry.
- c. Reinstall the protective cap so that no damage or improper adjustment of the Flow Sensor settings occur.

Step 4: The (4) AF 1090 AD Ozone generators are brought on as required and the order in which they are brought on, is all controlled by the Indeeco S95-202 control within the large control box on the upper right of the rack which has the ORP Controller on it. The running hours are tracked and the first on per demand is adjusted as required to maintain even wear. It is recommended that you turn on different quantities of washers to confirm the reaction of the system to the increased demand and water flow. You would only expect to see all (4) generators on if the entire store is busy (all machines in operation).

Step 5: Test at the farthest washer from the SOT system to confirm that you have an Oxidation Reduction Potential (ORP) reading above 750. To confirm proper ozone saturation in the water, an ORP meter must be used and the water tested as it leaves the bulkhead washer connection fitting. This test should be performed with a hose removed from a washer, dumping into an overflowing bucket with the ORP sensor inserted in the water of the bucket.

B. CONTROL DESIGN NOTES

SOT 3600 controls Internal controls are Indeeco S95 202 (202) for generator staging and pump control, Hannah Instrument BL 932700-1 ORP Controller (BL) with HI 2004-1005 ORP Probe and Dwyer TDS 122 (TDS) Thermal Dispersion Flow Sensor .

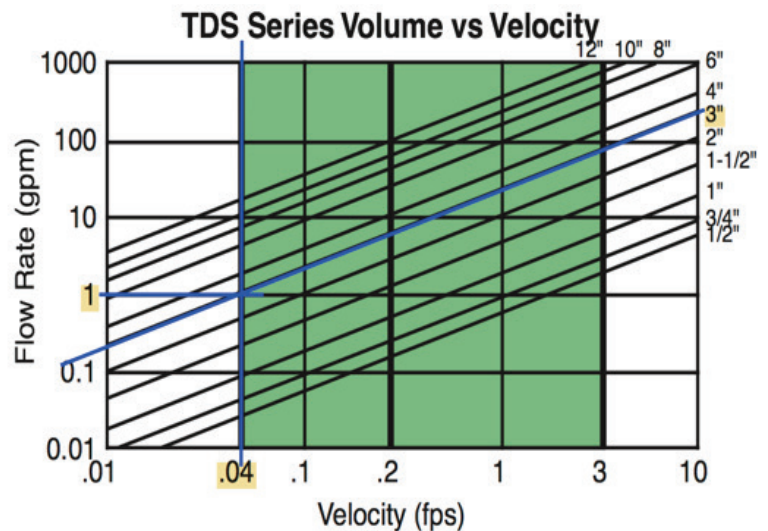
The BL 932700-1 and TDS 122 are all powered on all the time with 120v, the Ozone Generators are always powered with 230v. When the TDS senses minimum water flow (~3–4 gpm), it makes the “External Disabling” terminals on the BL, at that point it sends 120v power to the contactor switching power to the 202 and to the ozone pump, the BL sends a 4–20mV reading converted to 0–10 VDC and then inverted to the 202 as well. The 202, will bring on 1–4 generators after a minimum 15 second delay between each as required by the load (it uses a proprietary algorithm to determine how many and when); distance from the 850 ORP setpoint as indicated on the BL screen (actual ORP level will be shown). During operation the green LED on the BL will change to orange when adding ozone, and the green and red LEDs on the 202 are on.

The 202 not only controls the on/off of the ozone generators, but it rotates which generator comes on first based on run hours, to insure even wear and appropriate drying time.

Please note the Indeeco 202 control is just a sequencing control, so the following items are settings and references you may want/need to know:

1. The desired ORP level in the water during flow to the washers is a minimum of 650 (provides sanitization per the US Government), but a normal delivered range of between 750 and 850 ORP. The BL reads this directly but transmits it as a 4 – 20 mA signal for control regulation—this is a control industry standard unit of measurement.
2. An 8.8VDC will equal an ORP level of 850 – the ORP controller will be set at 850.
3. Stage 1 = Ozone Generator 1, etc.
4. Terminals “input” and “+VDC” are the output 2 – 10VDC signal from the ORP Control.
5. Terminals “120 VAC” = (Ozone) demand, off the ORP control Dosing Enable through the same contactor as the main ozone injector pump

OFF	<input type="checkbox"/>	2200
OFF	<input type="checkbox"/>	135
OFF	<input type="checkbox"/>	4-20mA
OFF	<input type="checkbox"/>	0-10VDC
DEADBAND	<input type="checkbox"/>	PROPOR
PROGRES	<input checked="" type="checkbox"/>	LINEAR
OFF	<input type="checkbox"/>	VERNIER
SECONDS	<input type="checkbox"/>	MINUTES
	<input checked="" type="checkbox"/>	5
	<input type="checkbox"/>	6
	<input type="checkbox"/>	7
	<input type="checkbox"/>	8
SELECT	<input checked="" type="checkbox"/>	1 DELAY 1
DELAY	<input type="checkbox"/>	2 DELAY 2
	<input type="checkbox"/>	3 DELAY 3
	<input type="checkbox"/>	4
	<input type="checkbox"/>	-1-
SELECT	<input type="checkbox"/>	5 -2-
NUMBER OF	<input type="checkbox"/>	6 -4-
STAGES	<input type="checkbox"/>	7 -8-
	<input type="checkbox"/>	8 -16-



Dosing Enable through the same contactor as the main ozone injector pump