

AUTOMATIC


TrioPure™ Soft Water & Ozone Sanitation System



Installation and Operation Manual

IMPORTANT SAFETY INSTRUCTIONS

Read and Follow All Safety Instructions

- Read and be familiar with this manual before installing, operating, or performing maintenance on the TrioPure™.
- The TrioPure™ must be installed and operated as specified.
- When installing and using this electrical equipment, basic safety precautions must always be followed.
- To reduce risk of electrical shock, turn off main pool pump and disconnect power to pool equipment prior to any installation or removal of TrioPure™ components.
- All permanent electrical connections should be made using liquid tight fittings and conduit and be made by a certified electrician.
- A ground terminal marked:  is located inside the compartment. To reduce the risk of electric shock, this terminal must be connected to the grounding means provided in the electrical supply service panel with a continuous copper wire equivalent in size to the circuit conductors supplying this equipment.
- A bonding lug is provided on the external surface of the TrioPure™. To reduce the risk of electric shock, connect the local common bonding grid in the area of the swimming pool, spa, or hot tub to these terminals with a copper conductor not smaller than 8 AG for US and 6 AWG for Canadian installations.
- This product manufactures chlorine. Individuals with any type of chlorine sensitivity should take the appropriate precautions to avoid injury or illness.
- A Ground Fault Circuit Interrupter (GFCI) must be installed between the TrioPure™ and the electrical supply.
- To avoid personal injury when working with pool chemicals, always wear rubber gloves and eye protection and work in a well-ventilated area. Use caution when choosing a location to open and use chemicals as they may damage any surface in which they come in contact.
- The TrioPure™ must not be installed directly above any heat source (e.g., heater). It must be at least 2 ft. (600 mm) above the ground to allow free circulation of air around it. It must not be installed in a closed box.
- Level and mount the TrioPure™ on a wall or a post. If mounting the TrioPure™ on a post, it must be centered on a flat panel of waterproof material at least 18" x 24". Do not enclose the TrioPure™ in any box. Do not install it above any heat source. Install the TrioPure™ a minimum of 10 ft. from the pool edge. See your local building codes for any additional requirements.
- The TrioPure™ must be installed in an outdoor location, or indoors in a well-ventilated room, and installed so that it is level and the orientation is as shown in Figures 1-9.
- Mount the TrioPure™ so that it is inaccessible to anyone in the pool. Never attempt any servicing while unit is wet.
- To avoid chlorinator cell damage, water pressure in the cell must not exceed 30 psi.
- For your safety, do not store or use gasoline, chemicals or other flammable liquids or vapors near this or any other appliance
- Do not let anyone, especially small children, sit, step, lean, or climb on any equipment installed as part of your pool's operational system.
- **WARNING:** Always dilute acid in a bucket of pool water before adding to the pool. Never add water to acid. Always add chemicals to water. Carefully follow acid manufacturer's safety precautions. **DO NOT MIX DIFFERENT CHEMICALS TOGETHER.**
- **WARNING:** Short-term inhalation of high concentrations of ozone and long-term inhalation of low concentrations of ozone can cause serious harmful physiological effects. **DO NOT inhale ozone gas produced by this device.**
- **WARNING:** Excessive chlorine levels can cause corrosion damage to swimming pool rails, ladders, heaters, heat exchangers, light faceplates and other metallic equipment. Avoid over saturation of chlorine levels by checking chlorine often using a suitable chlorine test device. Chlorine levels should not exceed 3 ppm. Always check chlorine levels before entering pool.
- **WARNING:** To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.

SAVE THESE INSTRUCTIONS!

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The TrioPure™ is ETL Certified.

SECTION 1 General Information

1A Description

How Your TrioPure™ Sanitation System Works

Your TrioPure™ produces both ozone and chlorine. Ozone is made by drawing air through Corona Discharge (CD) cells that break down oxygen molecules, which then recombine into ozone molecules. The TrioPure's internal pump provides sufficient water flow through the TrioPure™ to draw this ozonated air into the water stream. Chlorine is made by electrolyzing low concentrations of salt water in the pool, freeing the chlorine from the sodium chloride molecules in the salty water.

The ozone created in the TrioPure™ serves as the primary sanitizer, but requires a small residual of free available chlorine to remain to control algae growth. The amount of chlorine required is significantly less (60-90%) than a chlorine-only pool.

The TrioPure™ salt chlorination sub-system routinely shuts down during cleaning mode and allows any scale that has developed to slough off. This cleaning step dramatically lowers the amount of scale that can attach to the salt chlorinator plates over time and also greatly reduces the need for periodic cleaning.

The amount of chlorine produced by the TrioPure™ can be adjusted by using the **Chlorine Control** knob in order to compensate for higher chlorine demand during hot days or increased bather load.

The Advanced Oxidation Process (AOP - Patent Pending)

1. The combination of ozone with electrolysis creates AOP.
2. During AOP, super oxide compounds, even stronger oxidizers than ozone or chlorine alone, are continuously being formed to destroy contaminants.
3. Super oxides in combination with free ozone and free available chlorine (FAC), provide the strongest and safest pool water sanitation compared to other sanitation systems.

1B Specifications

Power Requirements:

Rating: 120V, 3.0 A fuse, 60Hz, or
240V, 1.5 A fuse, 60Hz

Operating Temperature:

Air: 40°-120° F, (4°-49° C)
Water: 59°-104° F (15° - 40° C)

Ozone Production:

TrioPure-25: 0.3 g/hr @ 72° F and 30% RH
TrioPure-50: 0.6 g/hr @ 72° F and 30% RH

Specifications:

Dimensions: 15" X 19.5" X 7.5"
Weight: TrioPure-25 & TrioPure-50: ~ 36 lbs.

Pool Capacity:

TrioPure-25: Up to 25,000 Gallons
TrioPure-50: Up to 50,000 Gallons

Chlorinator Production:

TrioPure-25: 7.9 g/hr (130 grams per day)
@ 3400 PPM salinity and 64.4° F (18° C)
water temperature at maximum setting

TrioPure-50: 15.8 g/hr (260 grams per day)
@ 3400 PPM salinity and 71.6° F (22° C)
water temperature at maximum setting

Water Flow Rate: 5 GPM

Salinity: 3,000-5000 ppm (3500 Nominal)

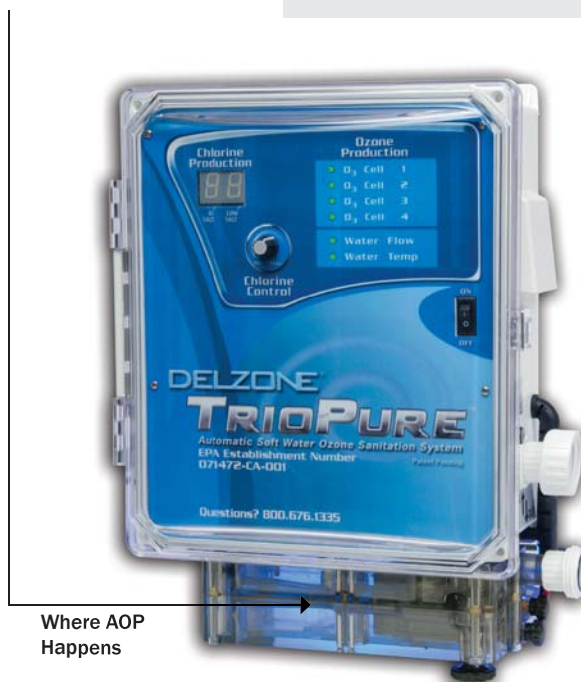


Illustration 1

SECTION 2 Installation

The most common pool and pool/spa configurations are discussed in this manual. For questions on your specific installation, please contact DEL Ozone at 800-676-1335, extension 293.

2A Verify Contents

Inspect your TrioPure™ shipping box for the following items:

- (1) TrioPure-25 or TrioPure-50 with salt chlorinator cell attached
- (1) Molded plastic bypass installation manifold
- (1) 3.0A fuse for 120V & 1.5A fuse for 240V (in bag near TB1 Terminal Block)
- (1) Manual
- (1) Quick Reference Guide

2B Installation Tips

CAUTION: The bypass manifold must be correctly installed or your TrioPure™ system will not work properly and the warranty will be voided. The bypass manifold contains two check valves that are matched to create the correct backpressure and anti-siphon protection for optimum performance of your TrioPure™.

- The TrioPure™ sanitation system should be installed on residential pools only. The salt level in your TrioPure™ pool should be between 3,000 and 5,000 ppm (3,500 recommended).
- If you use solar panels for pool heating, your TrioPure™ must be plumbed with the manifold before the solar heater, and the water return from the TrioPure™ after solar heater. Subjecting chlorine and ozone to the heat and turbulence of a solar heater will greatly reduce their overall effectiveness and the bubbles that can be created through your solar heater can inadvertently shut off the TrioPure™. See Figures 1, 2, 3, 7, 8 and 9.
- The TrioPure™ must be installed no more than 8 ft. above water level or no more than 3 ft. (measured from the top of the enclosure) below water level to maintain the correct pressure and flow characteristics for optimum operation of the unit.
- **DO NOT USE** copper or iron piping for the TrioPure™ installation as chlorine and ozone have corrosive effects. Consult your pool professional for appropriate pool equipment piping materials.
- Even though the TrioPure™ is designed for outdoor use, care should be taken when choosing a mounting location. To protect your investment, mount the TrioPure™ where it is protected from the elements (i.e., direct sun, rain, dirt, sprinklers) and completely sheltered if possible while providing adequate ventilation.
- If ozone bubbles are not desirable (for indoor pools, vinyl-lined pools, pools with covers, negative edge pools, etc.) the addition of a DEL Ozone Mixing-Degas Vessel (MDV-30) is recommended. Contact your local pool equipment dealer or visit DEL Ozone's website at www.delozone.com to find one near you.

- “Salt & Pepper” fittings, eyeball fittings, or the use of a gravity drains as return lines are recommended since they can better mix and disperse ozonated pool water.
- Plumb the TrioPure™ to the bypass manifold using a minimum amount of plumbing fittings. This minimizes backpressure.
- The TrioPure™ has been designed with an electronic water flow switch. This device automatically shuts down both the salt chlorinator and ozone subsystems when the water flow through the TrioPure™ is interrupted. To prevent personal injury and damage to the TrioPure™ salt chlorinator cell, do not interfere with this system in any way. It is designed for your protection and the protection of the TrioPure™.
- Always check the salt chlorinator cell frequently for the accumulation of pool debris that may have bypassed the pool filter. This can affect the operation of the flow switch, ozone injector, pump, and salt chlorinator plates.
- Salt is not lost through evaporation, but is lost when water is splashed out of the pool or during backwashing. Rainfall or adding fresh water dilutes the salt concentration and you will need to occasionally add more salt to the swimming pool. Check salinity level before and after adding additional salt.
- If the TrioPure™ is being installed on a new pool, do not add salt for 2 weeks after the pool has been filled. This protects plaster from staining and allows the finish to cure.
- **Pool water with high calcium levels, or hard water, can cause excessive calcification [scale] in the Chlorinator Cell. Installation of a T-filter or Y-filter trap with a 60-mesh screen near the Water Out line of the TrioPure, along with frequent acid cleaning of the cell plates [reference Section 5d-2: Chlorinator Cell Plate Cleaning] will reduce water hardness over time. The monthly addition of a non-chlorine shock (Potassium Monopersulfate or equivalent) to the pool will keep the scale soft, preventing the filter trap from clogging. Remove and clean the filter trap as necessary.**

2-C Recommended Installation Materials

- Liquid tight conduit, connectors & junction box, and appropriately sized and rated wire per local electrical codes.
Note: The TrioPure is designed for 1/2" NPT liquid tight fittings
- Two 2" inch unions for manifold installation to pool return line (use reducer bushings for 1½").
- 3/4 inch unions, ball-valves, and rigid PVC or Spa-Flex flex tubing for installation from manifold to TrioPure™.
- Mounting hardware for securing TrioPure™ to a stable surface (wall, fence, post with backboard) sufficient to support the unit.
Note: If you are mounting the TrioPure™ to the side of house wall that is located near a bedroom, consider using a vibration dampening material to reduce vibration noise.

SECTION 2 Installation (Continued)

2D Mounting the TrioPure™

IMPORTANT: A qualified swimming pool professional and certified electrician must install the TrioPure™ Sanitation System. Refer to local building codes for any additional requirements. If you need assistance in finding a qualified installer please contact our customer service department at 1-800-676-1335, ext. 249, or visit www.delozone.com.

Step 1 - Before starting, pick a mounting location that:

- Is ten (10') ft. minimum from the edge of pool
- Allows space for ease of plumbing and electrical installation. Review **Sections 2E & 2F**.
- The bottom of the **TrioPure™** has a minimum clearance of 2' ft. from all obstacles for ease of visibility and maintenance. Space must be allowed on all sides of the enclosure for adequate ventilation and to allow the clear cover to open completely.
- Sufficient clearance on top and both sides for your **TrioPure™** for plumbing and electrical hardware access.
- The top of the **TrioPure™** is no higher than 8' above or lower than 3' ft. below the water surface.
- Avoid installing your **TrioPure™** above any heat generating source such as a heater or pump.
- Meets the guidelines in **Section 2E** (Plumbing) and **Section 2F** (Electrical) in this manual
- It is recommended that the TrioPure is mounted with ¼-20 galvanized hex bolts. The bolt mounting pattern is 10.00" wide by 14.75" high. Screw in bottom bolts so that the head is ¼" from the mounting surface. Slide the TrioPure onto these bolts and screw the upper bolts through the top mounting holes on the enclosure.

Note: If installing your TrioPure™ below water level, an additional light-duty check valve is required after the chlorination cell to prevent backwash in the unlikely event of ozone check valve failure while the unit has been powered down.

Step 2 - Level and mount the TrioPure™ on a wall or a post. If mounting the TrioPure™ on a post, it must be centered on a flat panel of waterproof material at least 18" in. x 24" in. Do not enclose the TrioPure™ in any box. Do not install it above any heat source. Install the TrioPure™ a minimum of 10 ft. from the pool edge. Do not install the TrioPure in direct sunlight. In locations where the daytime temperatures regularly exceed 100° F, the internal thermal protection switch may shut down the TrioPure. When the temperature drops the TrioPure power will be restored.

2E Plumbing

2e-1 Installing the TrioPure™ Manifold

Note: Turn off main pool pump and disconnect power before installing the bypass manifold.

There are many different types of pool construction and pool equipment configurations. The following pool configuration list will help you determine which way to plumb your TrioPure™ for optimal performance. Each configuration has an easy to plumb illustration for installing the bypass manifold.

NOTE: The bypass manifold must be mounted horizontally to prevent bubbles from returning to the TrioPure™ pump and tripping the flow switch.

Before installing the TrioPure™ bypass manifold, determine whether your pool is a:

- New Pool (can I plumb a dedicated ¾" return)
- Existing Pool (returns already in place)
- Pool Only
- Pool/Spa combination

Also, determine whether you have an **In-Floor Cleaning System** (ICS) or **Solar Heater** installed in your existing pool (or plan to install one on your new pool).

The plumbing diagrams shown on the following pages are schematic representations of the various pool configurations and plumbing lengths are for reference only.

2e-2 Plumbing Configuration Chart

If your pool is: New Pool Pool Only No ICS No Solar / Solar - See Figure 1
If your pool is: Existing Pool Pool Only No ICS No Solar / Solar - See Figure 2
If your pool is: Existing Pool Pool Only ICS No Solar / Solar - See Figure 3
If your pool is: New Pool Pool Spa Combo No ICS No Solar - See Figure 4
If your pool is: Existing Pool Pool Spa Combo No ICS No Solar - See Figure 5
If your pool is: Existing Pool Pool Spa Combo ICS No Solar - See Figure 6
If your pool is: New Pool Pool Spa Combo No ICS Solar - See Figure 7
If your pool is: Existing Pool Pool Spa Combo No ICS Solar - See Figure 8
If your pool is: Existing Pool Pool Spa Combo ICS Solar - See Figure 9

2e-3 Plumbing Configurations Figures 1-9

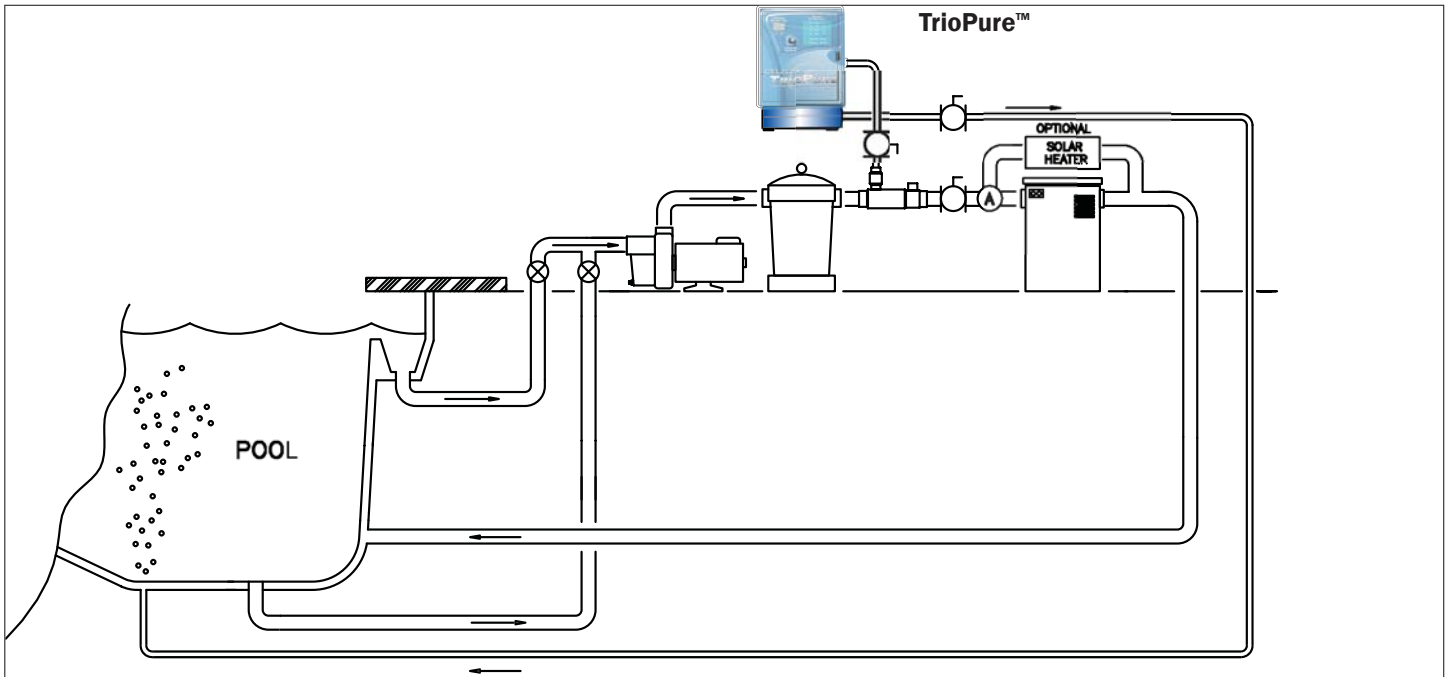


Figure 1 - (New Pool, Pool Only, No ICS, No Solar, Solar):

- Manifold to be plumbed between the filter and heater. In the case of Solar, the manifold is to be installed before the diverter valve that serves both the solar and non-solar heaters
- TrioPure™ return port of the bypass manifold capped off
- Return from TrioPure plumbed to a dedicated 3/4" return to the lowest point of the pool.
- To minimize the size of ozone bubbles use a dispersion cap or main drain cover. This may require a stub-up to the appropriate size for the fitting.
- Del recommends installing 3/4" ball valves on the inlet and outlet of the Triopure to facilitate Salt Cell removal for cleaning and a ball valve after the Bypass Manifold to control water flow through the Salt Cell.

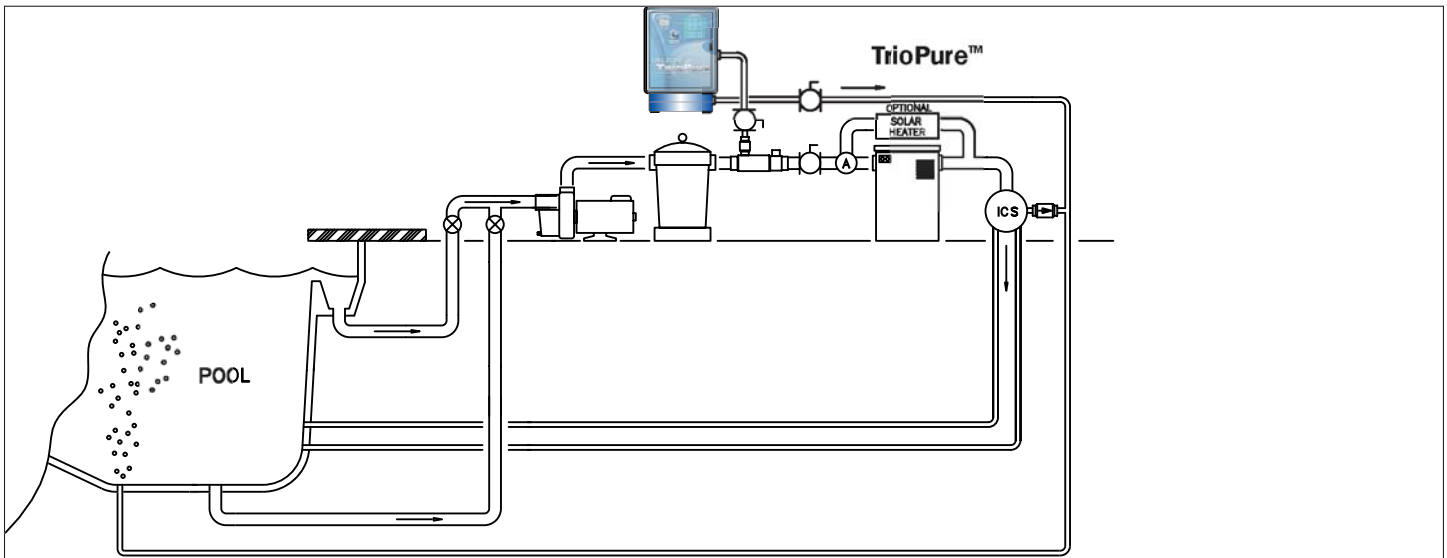


Figure 2 - (Existing Pool, Pool Only, No ICS, Solar, No Solar):

- Bypass Manifold plumbed between the filter and heater
- **Note**-In the case of Solar the manifold is to be before the diverter valve that serves both the solar and non-solar heaters
- TrioPure™ return port of the bypass manifold capped off
- Return from TrioPure™ plumbed into tee after the heater(s)
- **Note**-In the case of Solar the TrioPure return is to be after the tee where the solar heater joins the main return.
- Del recommends installing 3/4" ball valves on the inlet and outlet of the Triopure to facilitate Salt Cell removal for cleaning and a ball valve after the Bypass Manifold to control water flow through the Salt Cell.

2e-3 Plumbing Configurations (Continued)

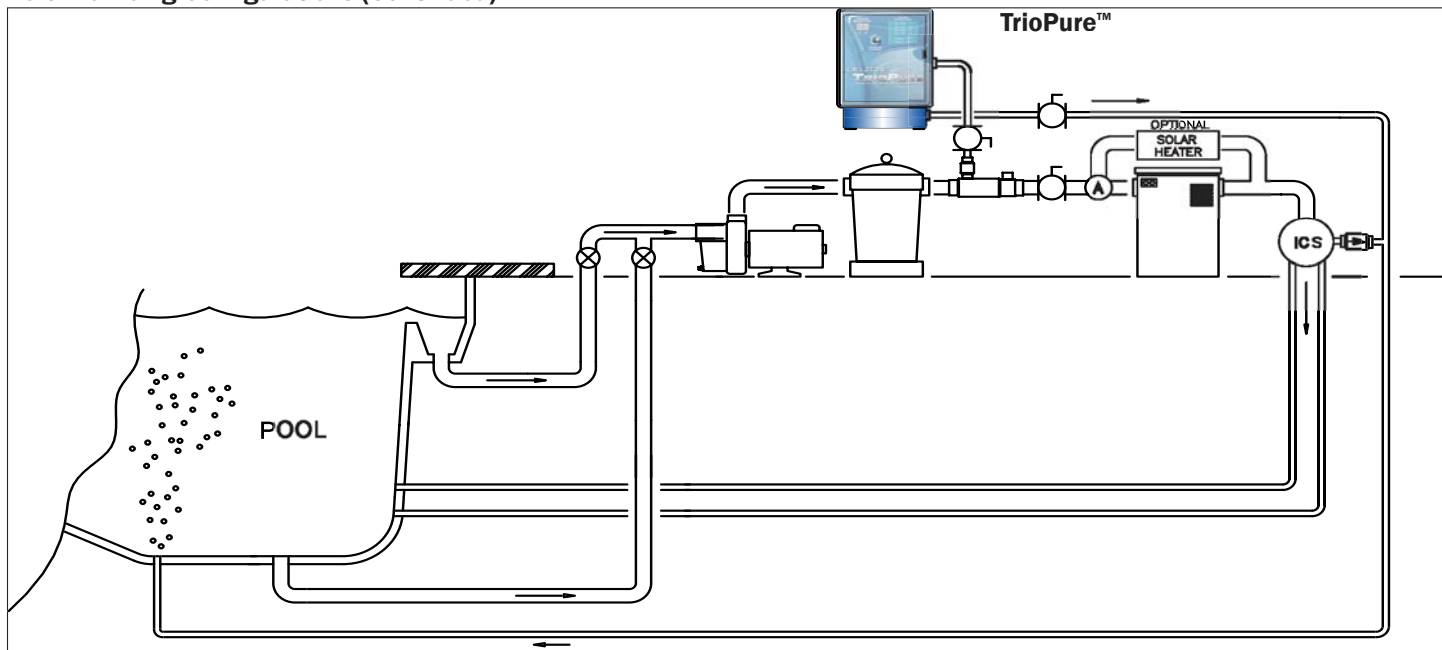


Figure 3 - (Existing Pool, Pool Only, ICS, Solar, No solar):

- Manifold to be plumbed between the filter and heater
- TrioPure™ return port of the bypass manifold capped off
- Return from TrioPure™ plumbed to the line of the ICS that goes to the lowest point of the pool.
 - This is after the ICS diverter valve
 - A light duty check valve must be placed between the diverter valve and point where the TrioPure™ enters the ICS line
- Del recommends installing 3/4" ball valves on the inlet and outlet of the Triopure to facilitate Salt Cell removal for cleaning and a ball valve after the Bypass Manifold to control water flow through the Salt Cell.

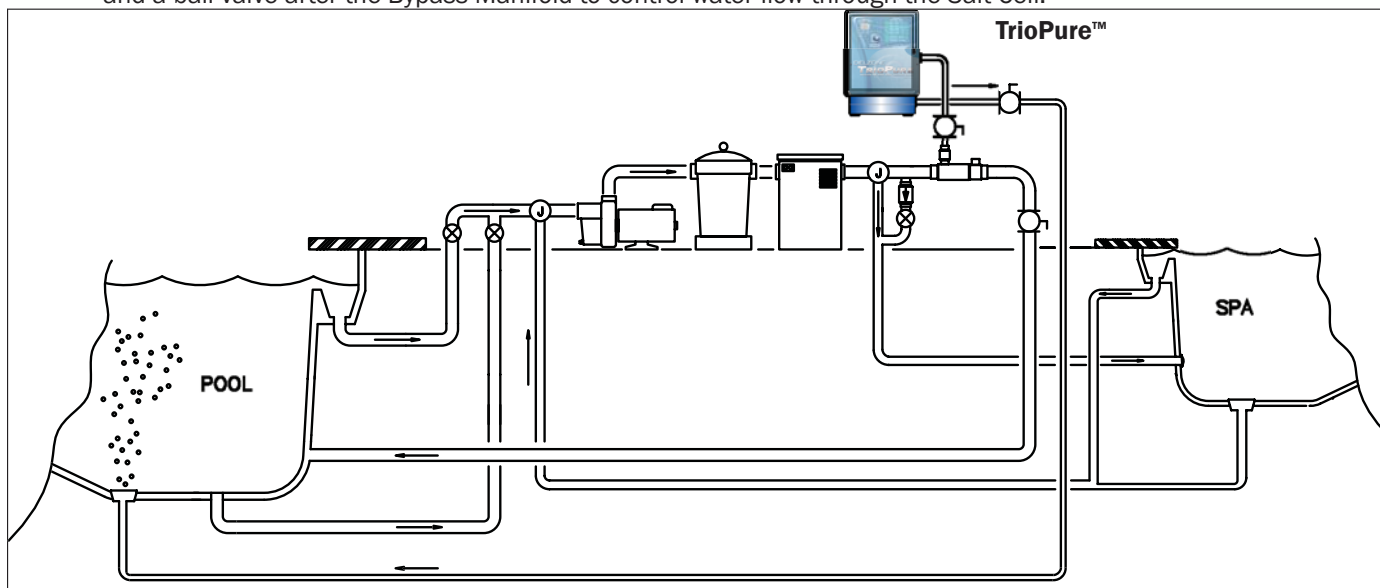


Figure 4 - (New Pool, Pool Spa Combination, No ICS, No solar):

- Manifold to be plumbed in the pool return after the 3-way valve that diverts water between the pool and spa
- TrioPure™ return port of the bypass manifold capped off
- Return from TrioPure™ plumbed to a dedicated 3/4" return to the lowest point of the pool.
- To minimize the size of ozone bubbles use a dispersion cap or main drain cover. This may require a stub-up to the appropriate size for the fitting.
- Del recommends installing 3/4" ball valves on the inlet and outlet of the Triopure to facilitate Salt Cell removal for cleaning and a ball valve after the Bypass Manifold to control water flow through the Salt Cell.

2e-3 Plumbing Configurations (Continued)

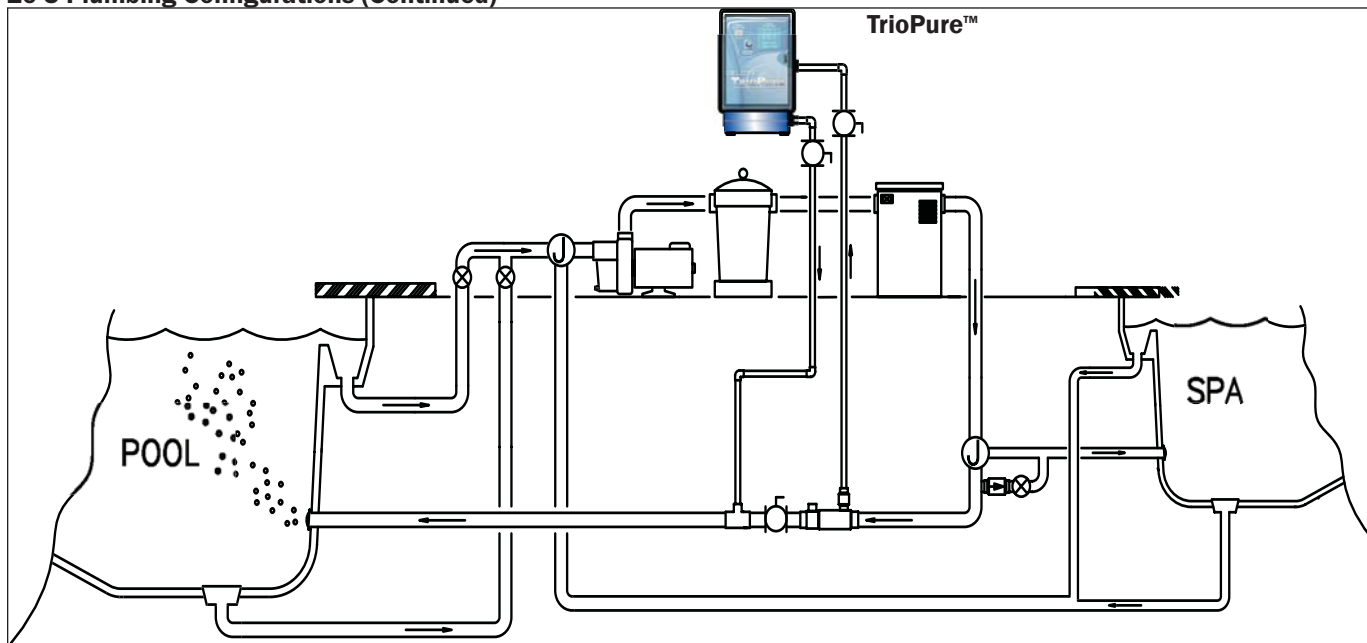


Figure 5 - (Existing Pool, Pool Spa Combination, No ICS, No solar):

- Manifold to be plumbed in the pool return after the 3 way valve that diverts water between the pool and spa
- Return from TrioPure™ plumbed back into the bypass manifold.
- Del recommends installing 3/4" ball valves on the inlet and outlet of the Triopure to facilitate Salt Cell removal for cleaning and a ball valve after the Bypass Manifold to control water flow through the Salt Cell.

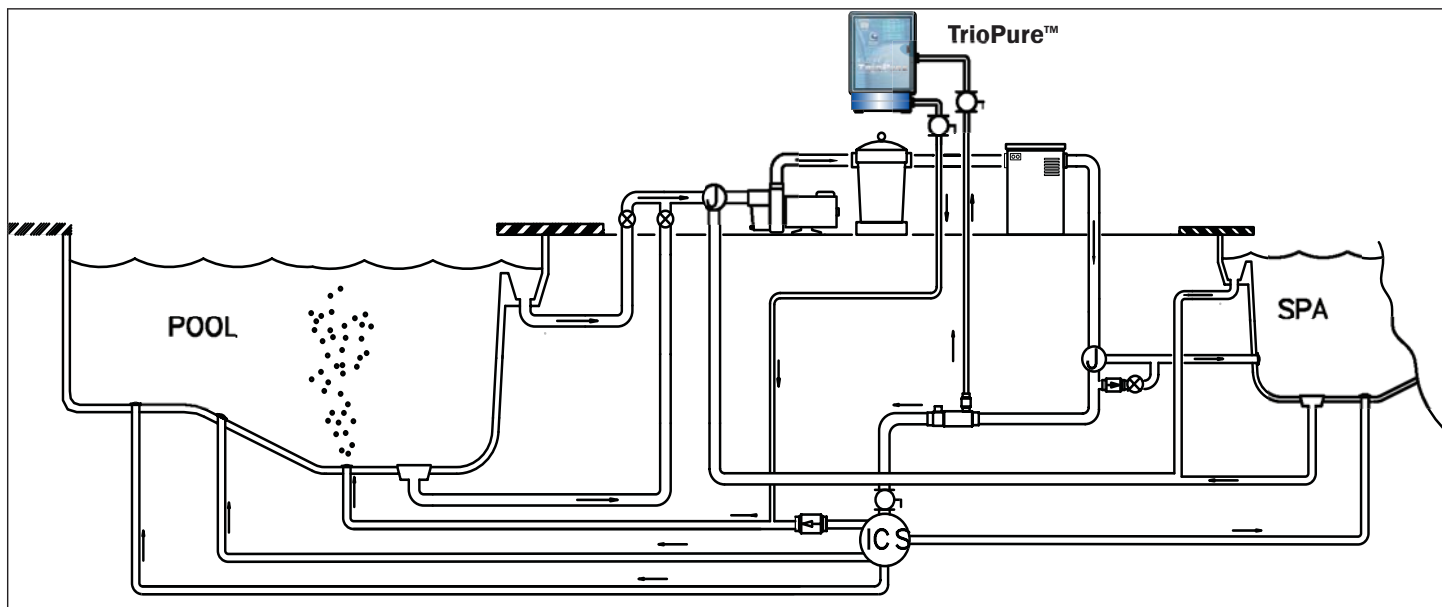


Figure 6 - (Existing Pool, Pool Spa Combination, ICS, No solar):

- Manifold to be plumbed in the pool return after the 3 way valve that diverts water between the pool and spa
- Return from TrioPure™ plumbed to the line of the ICS that goes to the lowest point of the pool.
 - This is after the ICS diverter valve
 - A light duty check valve must be placed between the diverter valve and the point where the TrioPure™ enters the ICS line
- Del recommends installing 3/4" ball valves on the inlet and outlet of the Triopure to facilitate Salt Cell removal for cleaning and a ball valve after the Bypass Manifold to control water flow through the Salt Cell.

2e-3 Plumbing Configurations (Continued)

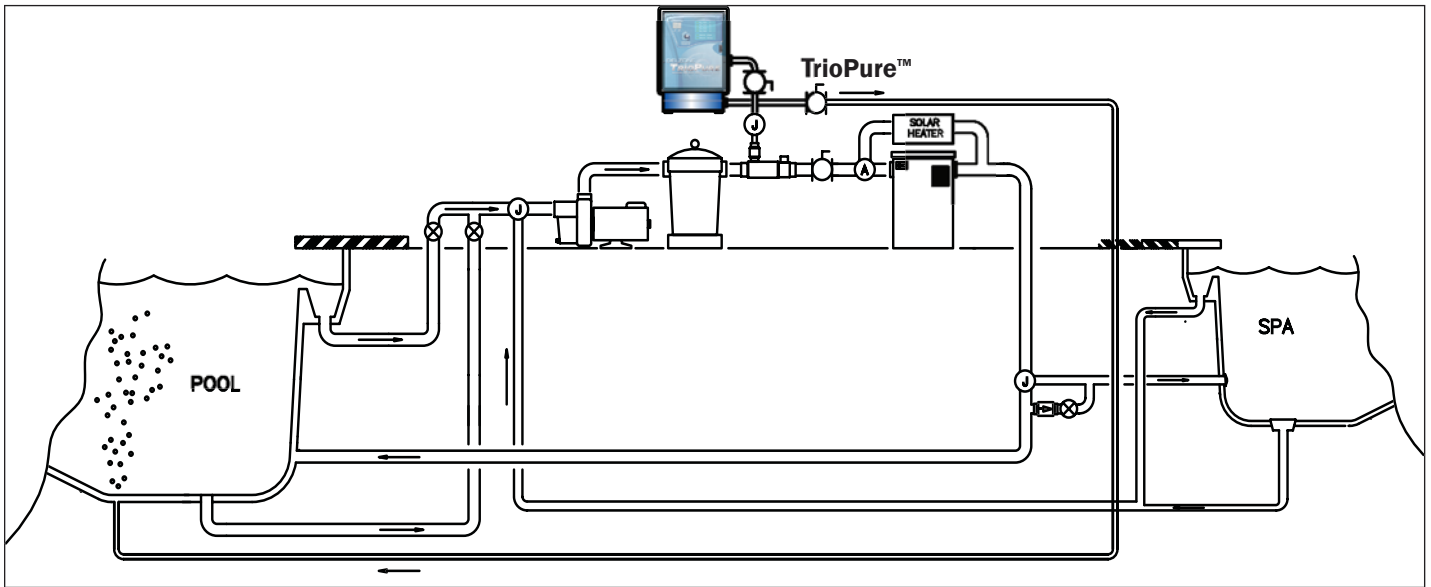


Figure 7 - (New Pool, Pool Spa Combination, No ICS, Solar):

- Manifold to be plumbed between the filter and heater
- TrioPure™ return port of the bypass manifold capped off
- Return from TrioPure™ plumbed to a dedicated 3/4" return to the lowest point of the pool.
- An automated shut-off valve needs to be put in the line between the bypass manifold and the TrioPure™, which is tied into the Pool/Spa control system, and shuts off water to the TrioPure™ when in spa mode
 - If this is overlooked, the TrioPure will pump water from the spa into the pool, when in spa mode.
 - To minimize the size of ozone bubbles use a dispersion cap or main drain cover. This may require a stub-up to the appropriate size for the fitting.
- Del recommends installing 3/4" ball valves on the inlet and outlet of the Triopure to facilitate Salt Cell removal for cleaning and a ball valve after the Bypass Manifold to control water flow through the Salt Cell.

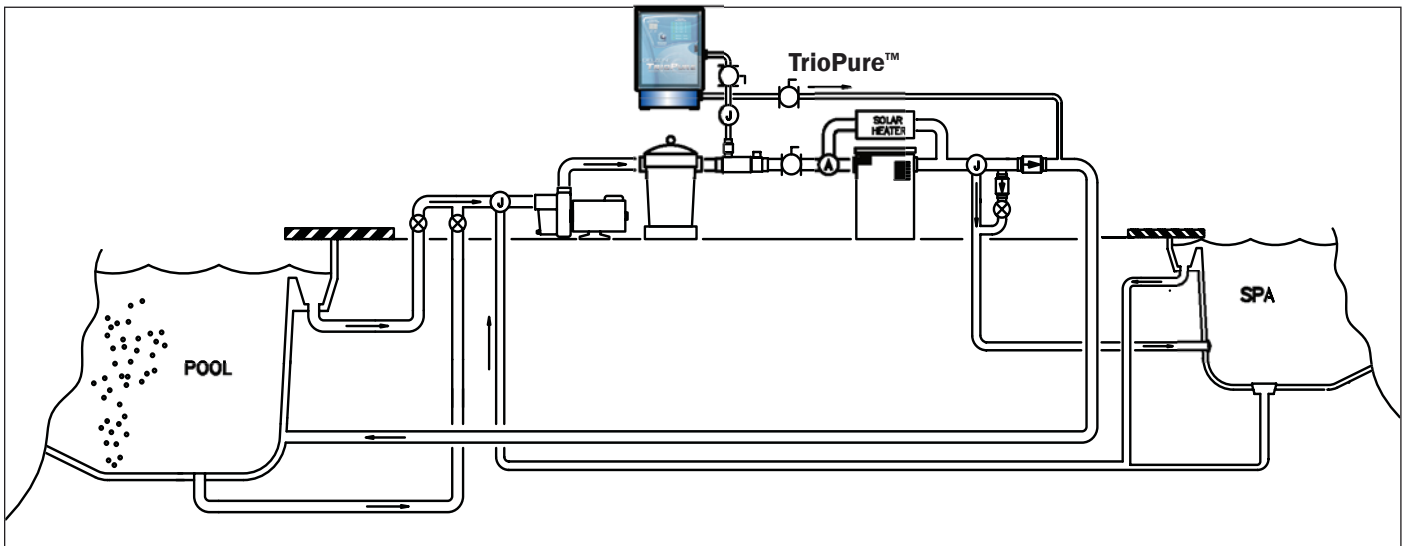


Figure 8 - (Existing Pool, Pool Spa Combination, No ICS, Solar):

- Manifold to be plumbed between the filter and heater
- TrioPure™ return port of the bypass manifold capped off
- Return from TrioPure™ plumbed into a tee in the main pool return after the 3 way valve that diverts water between the pool and spa
- An automated shut-off valve needs to be put in the line between the bypass manifold and the TrioPure™, which is tied into the Pool/Spa control system, and shuts off water to the TrioPure™ when in spa mode
 - If this is overlooked, the TrioPure will pump water from the spa into the pool, when in spa mode.
- Del recommends installing 3/4" ball valves on the inlet and outlet of the Triopure to facilitate Salt Cell removal for cleaning and a ball valve after the Bypass Manifold to control water flow through the Salt Cell.

2e-3 Plumbing Configurations (Continued)

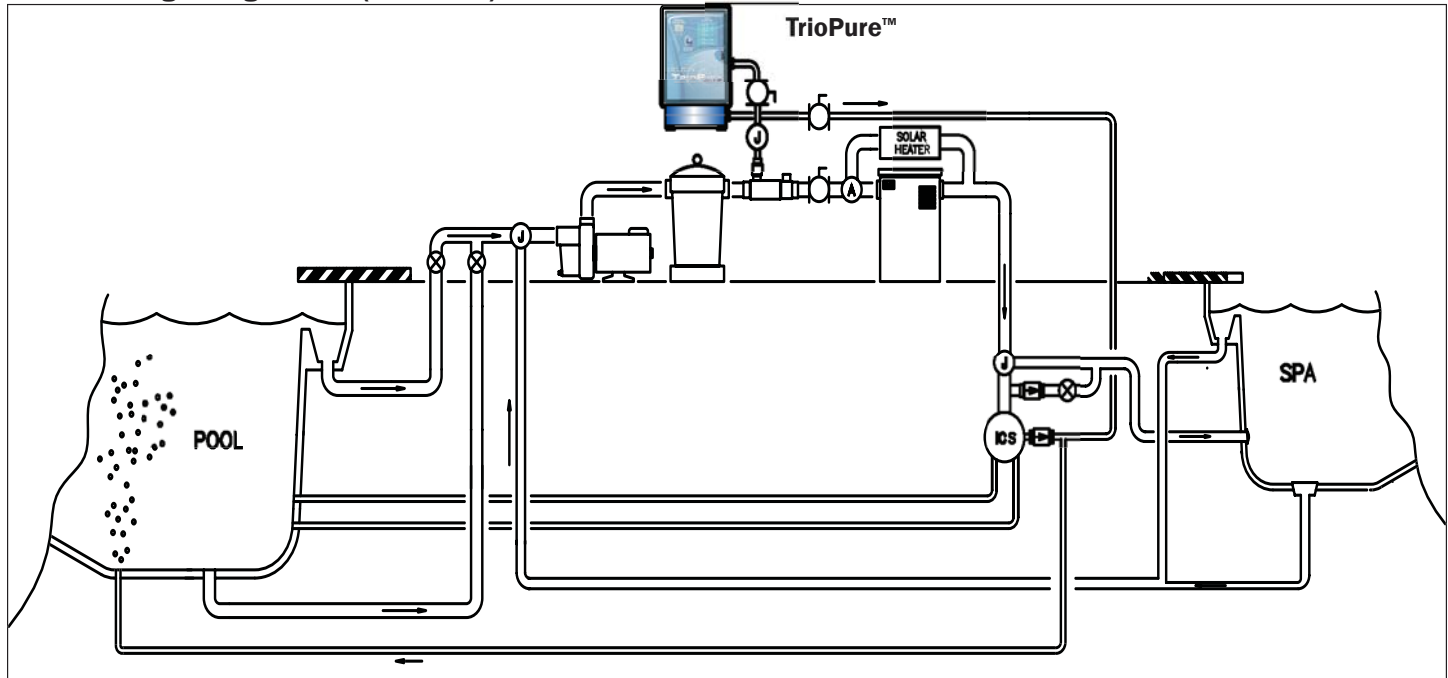


Figure 9 - (Existing Pool, Pool Spa Combination, ICS, Solar):

- Manifold to be plumbed between the filter and heater
- TrioPure™ return port of the bypass manifold capped off
- Return from TrioPure™ plumbed to the line of the ICS that goes to the lowest point of the pool.
 - This is after the ICS diverter valve
 - A light duty check valve must be placed between the diverter valve and the point where TrioPure™ enters the ICS line
- An automated shut-off valve needs to be put in the line between the bypass manifold and the TrioPure™, which is tied into the Pool/Spa control system, and shuts off water to the TrioPure™ when in spa mode
 - If this is overlooked, the TrioPure™ will pump water from the spa into the pool, when in spa mode.
- Del recommends installing 3/4" ball valves on the inlet and outlet of the Triopure to facilitate Salt Cell removal for cleaning and a ball valve after the Bypass Manifold to control water flow through the Salt Cell.

Special Note about Spillway Valves on Pool/Spa Combinations without Solar. If a spillway valve is used, the line which takes water from the pool into the spa creating the overflow effect, it must be equipped with a light duty check valve to prevent water from being diverted back into the pool, when in spa mode, and any lines to or from the TrioPure must be plumbed after it.

2F Electrical

IMPORTANT: Electrical connections must be made by a certified electrician · Use copper conductors only · Follow local and NEC codes · Connect only to a circuit protected by a Class A GFCI.

Step 1 - Determine the voltage required for your installation. Your TrioPure™ is configurable for either 120V or 240V AC.

Step 2 - For 120V installations, install the 3.0A fuse (3AG type) into the fuse holder. For 240V installations, install the 1.5A fuse (3AG type) into the fuse holder. The fuses are in a bag attached inside the enclosure near the terminal block.

Warning: Failure to install the correct fuse voids the warranty and can present a potential fire and/or electrical hazard.

Step 3 - Open the front clear cover by opening the latch on the right side of the enclosure.

Step 4 - Remove the front panel by pulling off the **Chlorine Control Knob** and unscrewing four (4) Phillips head 6-32 screws. Locate the terminal block (TB-1).

Step 5 - The main power wiring should be routed through ½” hole on the left side of the enclosure using appropriate liquid tight strain relief or conduit (not supplied).

Step 6 - Connect the main wires to TB-1 as show in **Figure 10** for 120V installations or **Figure 11** for 240V installations.

Step 7 - Connect the local common bonding grid in the area of the swimming pool, spa or hot tub to the bonding lug (on the left exterior of the unit) with an insulated or bare solid copper conductor not smaller than 8 AWG (US) or 6 AWG (Canada).

Step 8 - Attach the cover plate with the four (4) Phillips head 6-32 screws. Replace the **Chlorine Control Knob** onto the extended “D” control shaft. Ensure that the ON/OFF switch is in the “OFF” position. Close and latch the clear cover.

Note: The TrioPure™ must be hard-wired to the AC line side for 24 hour operation to 120V/60Hz or 240V/60Hz ONLY using liquid tight fittings/conduit and wire gauges meeting local codes for the voltage required. Use a permanent marker to indicate either 120V or 240V configuration on the side label found on the left side of the TrioPure™.

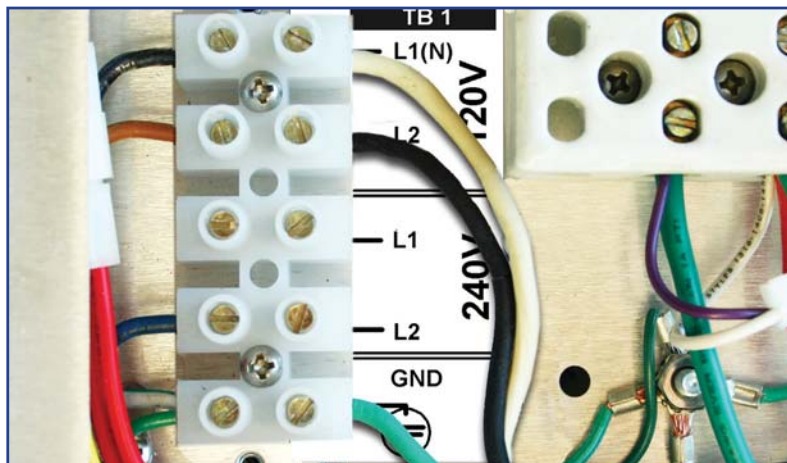


Figure - 10 Terminal Block 120V Configurations

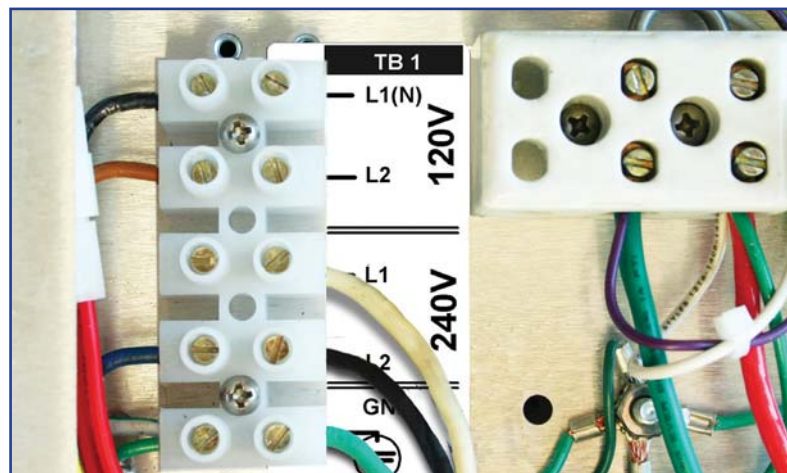


Figure - 11 Terminal Block 240V Configurations

SECTION 3 Pool Preparation

3A Important Information

If the TrioPure™ is being installed on a new pool, do not add salt for 2 weeks after pool has been filled to help protect plaster from staining.

Pool water must be at the proper salinity level, temperature, and chemically balanced before operating the TrioPure™.

3B What Kind of Salt to Use

Use 99.6% pure or better sodium chloride water softening or feed salt work best with your TrioPure™. The finer the grain, the easier it will be to dissolve the salt quickly and completely (pellets are much harder to dissolve than fine grain salt). Common brand names of salt to use are Cargil and Morton.

Note: Salt with anti-caking agents (yellow prussiate of soda, or "YPS") may cause staining of pool linings and fixtures and should not be used.

3C Where to Get Salt

Salt can be purchased at a pool supply, building supply, feed supply, or major home and garden department store.

3D How Much Salt to Use

Always use a salinity test strip (such as Aquacheck White for salt or LaMotte Tracer Meter- found through local pool supply dealer) or digital salinity meter to determine salt level in pool water prior to adding any salt. Capture water from about 18" deep in a container, and then test this water sample. Add enough salt to obtain a salinity of approximately 3,500 ppm - Refer to 'Salt Sizing Table' (Figure 14) on pages 11-12.

3E How to Add Salt

Step 1 - Evenly disperse the proper amount of salt around the perimeter of the pool. Run the main pool circulation pump for 24 hours and agitate any undissolved salt deposited at the bottom of the pool with a pool brush. Allow 24 hours or longer for salt to fully dissolve.

IMPORTANT: To avoid damage to your TrioPure™ chlorinator, never operate the TrioPure™ if the salinity level is under 3,000 ppm.

It is easy to add more salt to your pool but difficult to remove excess salt through draining.

CAUTION: Do not add salt to the skimmer box.

3F Pool Sizing Chart

If you don't know the size of your swimming pool, you must first determine the volume before adding large quantities of salt.

For rectangular pools simply calculate:

$$\text{length} \times \text{width} \times \text{average depth} \times 7.5 = \text{Gallons}$$

For oval pools simply calculate:

$$\text{length} \times \text{width} \times \text{average depth} \times 6.7 = \text{Gallons}$$

For round pools simply calculate:

$$(\text{diameter})^2 \times \text{average depth} \times 5.9 = \text{Gallons}$$

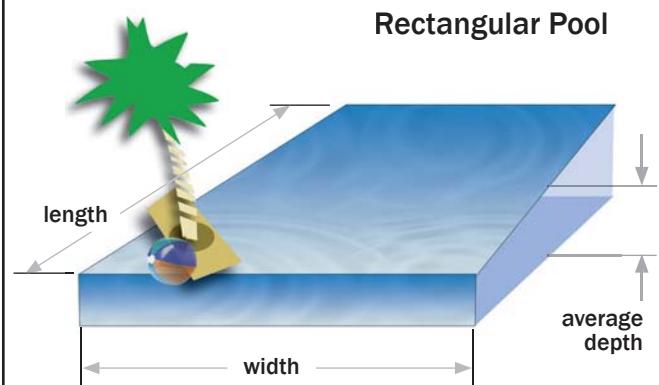


Figure 12

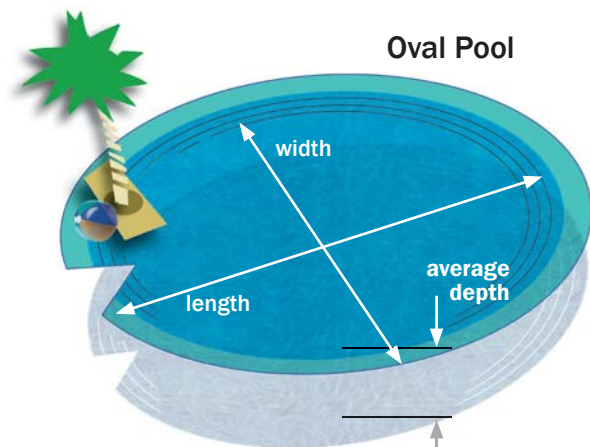


Figure 13

3G Salt Sizing Table

See Figure 14 below for complete salt sizing information on pools up to 50,000 gallons.

Pounds of Salt (99.6% pure Sodium Chloride) Needed for 3,500 PPM Salt Level

Current Salt Level [ppm]	Volume in Gallons (5,000 to 25,000)								
	5,000	7,500	10,000	12,500	15,000	17,500	20,000	22,500	25,000
0	146	219	292	365	438	511	584	657	730
250	136	203	271	339	407	475	542	610	678
500	125	188	250	313	376	438	501	563	626
750	115	172	230	287	344	402	459	516	574
1000	104	156	209	261	313	365	417	469	522
1250	94	141	188	235	282	329	376	423	469
1500	83	125	167	209	250	292	334	376	417
1750	73	110	146	183	219	256	292	329	365
2000	63	94	125	156	188	219	250	282	313
2250	52	78	104	130	156	183	209	235	261
2500	42	63	83	104	125	146	167	188	209
2750	31	47	63	78	94	110	125	141	156
3000	21	31	42	52	63	73	83	94	104
3250	10	16	21	26	31	37	42	47	52
3500	0	0	0	0	0	0	0	0	0
Over 5000	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute

Current Salt Level [ppm]	Volume in Gallons (25,500 to 29,500)								
	25,500	26,000	26,500	27,000	27,500	28,000	28,500	29,000	29,500
0	745	759	774	789	803	818	833	847	862
250	692	705	719	732	746	759	773	787	800
500	638	651	664	676	689	701	714	726	739
750	585	597	608	620	631	643	654	666	677
1000	532	542	553	563	574	584	595	605	616
1250	479	488	498	507	516	526	535	545	554
1500	426	434	442	451	459	467	476	484	492
1750	372	380	387	394	402	409	416	424	431
2000	319	325	332	338	344	351	357	363	369
2250	266	271	276	282	287	292	297	303	308
2500	213	217	221	225	230	234	238	242	246
2750	160	163	166	169	172	175	178	182	185
3000	106	108	111	113	115	117	119	121	123
3250	53	54	55	56	57	58	59	61	62
3500	0	0	0	0	0	0	0	0	0
Over 5000	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute

Figure 14 continued on next page

3G Salt Sizing Table (Continued)

Current Salt Level [ppm]	Volume in Gallons (30,000 to 50,000)								
	30,000	32,500	35,000	37,500	40,000	42,500	45,000	47,500	50,000
0	876	949	1,022	1,095	1,168	1,241	1,314	1,388	1,461
250	814	882	949	1,017	1,085	1,153	1,221	1,288	1,356
500	751	814	876	939	1,002	1,064	1,127	1,189	1,252
750	689	746	803	861	918	975	1,033	1,090	1,148
1000	626	678	730	782	835	887	939	991	1,043
1250	563	610	657	704	751	798	845	892	939
1500	501	542	584	626	668	709	751	793	835
1750	438	475	511	548	584	621	657	694	730
2000	376	407	438	469	501	532	563	595	626
2250	313	339	365	391	417	443	469	496	522
2500	250	271	292	313	334	355	376	396	417
2750	188	203	219	235	250	266	282	297	313
3000	125	136	146	156	167	177	188	198	209
3250	63	68	73	78	83	89	94	99	104
3500	0	0	0	0	0	0	0	0	0
Over 5000	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute

Figure 14, Cont.

3H When to Add Salt

Step 1 – Determine the size of your pool in gallons. Please see Section 3F.

Step 2 – Check the salinity of the pool water. Always use a salinity test strip or electronic salinity meter to determine the salt level in the pool water prior to adding any salt.

Step 3 – Use the **Salt Sizing Table (Section 3G)** to determine how much salt you’ll need. You will also need to add about 1.25 pounds of stabilizer (Cyanuric Acid) for every 50 pounds of salt added to the pool. For example, if adding 750 pounds, the quantity of stabilizer needed would equal 750 pounds / 50 pounds X 1.25 = 18 ¾ pounds.

Note: To add Cyanuric Acid, slowly sprinkle into the skimmer.

Step 4 – Turn on the main pool pump with suction coming from the main pool drain.

Step 5 – Add salt directly to the pool [**DO NOT add to the skimmer box**] by dispersing it around the outside edge of the pool.

Step 6 – Use a pool brush to mix and help dissolve the salt. Keep the main pump running for 24 hours.

Step 7 – Check the pool salinity. If the salt level is much lower or higher than expected, first re-check your calculations for adding salt. Second, check the pool for any undissolved salt and continue to brush and run the main pump as needed.

REMINDER: Even if the salt concentration is higher than 3,000 ppm, the ‘Low Salt’ light may flash if the water temperature is at the low end of the specified range or the **Chlorine Control** knob is at a low setting (1-4 shown on the LED display). This is especially true during the initial preparation and start-up. In this situation, the TrioPure may not display ‘IO’ at the maximum setting. The addition of more salt to the pool may allow the **Chlorine Output** display to reach maximum readings.

SECTION 4 Operation

4A Initial Start-Up Procedure

CAUTION: Depending on water temperature and turnover in pool, the salt may take several days to dissolve and salinity levels to be measured accurately. Do not add additional salt to pool unless all salt is dissolved and salinity measurements are consistently less than 3,000 ppm.

CAUTION: Operating the TrioPure with pool salinity below 3,000 ppm will severely reduce cell life.

Step 1 - Before starting the TrioPure, manually add chlorine to the water for the first week to a minimum level of 1 ppm and ensure that all water chemistry parameters are within the specified limits. Check the water chemistry, water tem-

perature, and salt level (salinity) and adjust as needed – all must be within the limits specified in **Section 5B, Monitoring & Maintenance**, of this manual before starting the TrioPure™.

Step 2 - Turn on main pool pump before starting the TrioPure™.

Note: Ozone may cause temporary clouding of water in pool on initial startup (first 24-48 hours) as the ozone causes organic matter to flocculate (stick together) and minerals to precipitate out so that they can be trapped in the pool filter. Clean filter as needed until pool water is clear.

Step 3 - Become familiar with the controls, indicators, and features of the TrioPure™. See **Figure 15** below (TrioPure-50 shown)



Figure 15

- | | |
|--------------------------------|---------------------------------|
| 1. Chlorine Production Display | 6. Water Flow Indicator |
| 2. Chlorine Control Knob | 7. Water Temp. Indicator |
| 3. Low Salt Indicator | 8. On/Off Switch |
| 4. High Salt Indicator | 9. Fuse (right side) |
| 5. Ozone Production Indicators | 10. Serial Number # (left side) |

Step 4 - Unfasten the latch on right side of the TrioPure™ and open clear cover.



Figure 16

Step 5 - Turn the **Chlorine Control** knob to 'Min' (Counter-clockwise).



Figure 17

Step 6 - Switch the TrioPure™ power switch to 'ON'.

Step 7 - Observe the color of the following status LED lights:

Ozone Production cell

TrioPure-25 = O₃ Cell 1, O₃ Cell 2

TrioPure-50 = O₃ Cell 1, O₃ Cell 2, O₃ Cell 3, O₃ Cell 4

Water Flow

Water Temperature

All above LEDs should be green. If any LEDs are red, please see the Troubleshooting section, Chapter 6A for assistance.

Step 7a - Observe that the **Chlorine Production** LED display reads 'OF'.



Figure 18

Step 8 - Look for bubbles of ozone in the water at the injector (found in the chlorinator cell).

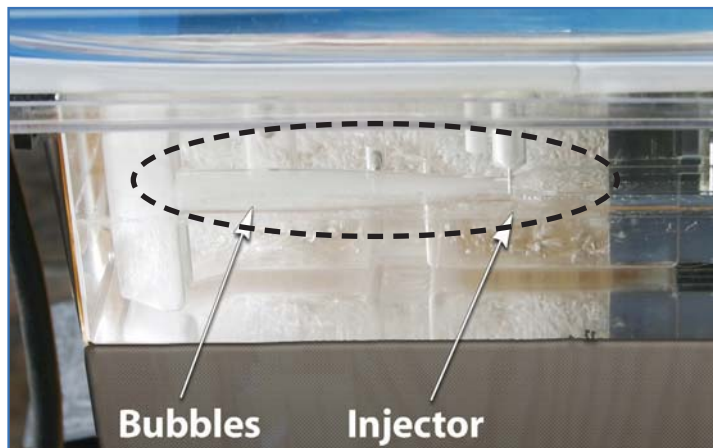


Figure 19

Step 9 - Turn Chlorine Control knob up about half way (pointing straight up).



Figure 20

Step 10 - Observe **Chlorine Production** display, the Low Salt light will flash and the display will read "O" until the TrioPure™ chlorinator comes on line.

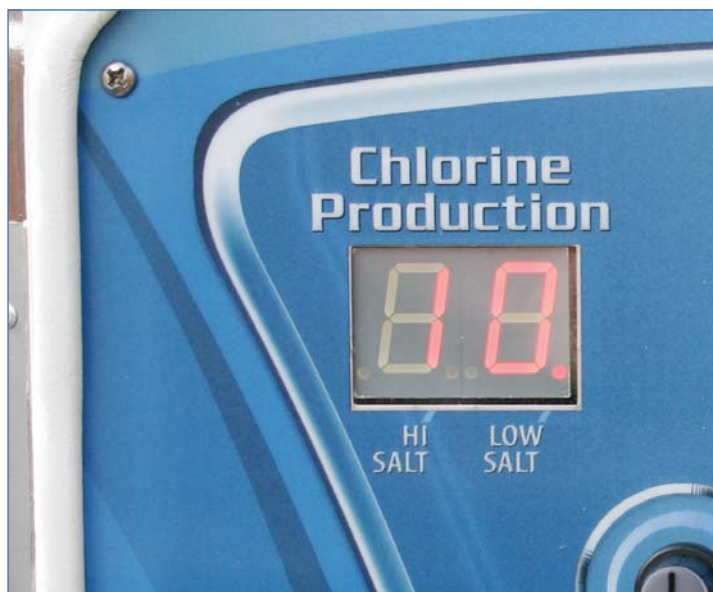


Figure 21

Step 11 - Check pool free chlorine levels every 24 hours, and adjust **Chlorine Control** knob as necessary to get between 0.5 and 1.0 PPM.

SECTION 5 Monitoring & Maintenance

5A Front Panel Diagnostics

The front panel of the TrioPure™ contains diagnostics and feedback displays to let you know how the system is operating and whether there is a problem with the system. Familiarize yourself with the following diagnostic readouts and functions:

- **Chlorine Production**

- **Normal Indicator Messages**

- **OF** = Chlorine Control turned off

- **I-IO** = Level of chlorine production

- **CL** = Chlorinator plates are in “clean mode” (down time between polarity changes)

- **Error Indicator Messages** (refer to Section 6A, Troubleshooting, Page 20)

- **Pb** = Chlorinator shut off due to problem

- **OL** = Current over limit

- **Chlorine Control**

- The **Chlorine Control Knob** controls the level of chlorine production. Turn the knob clockwise to increase the amount of chlorine in the pool and counterclockwise to decrease the amount of chlorine in the pool.

- **Low Salt Indicator**

- The **Low Salt** indicator is normally off and not lit.

- The **Low Salt** indicator blinks red when the pool should be checked for low salinity (**Warning**-always check salinity level with a test strip or digital meter before adding additional salt).

- **High Salt Indicator**

- The **High Salt** indicator is normally off and not lit.

- The **High Salt** indicator blinks red when the pool should be checked for high salinity. (**Warning**-always check salinity level with a test strip or digital meter before diluting water).

- **Ozone Production Indicators**

- The normal operating color of the TrioPure’s **Ozone Cell** LED indicators is green.

- A red LED indicates that the **Ozone Cell** is not operating (refer to Section 6A, Troubleshooting, Page 20).

- The TrioPure-25 has two LEDs while the TrioPure-50 has four LEDs. **Note:** During normal operation, ozone cells do not function if the water flow indicator is RED.

- **Water Flow Indicator**

- The **Water Flow** LED indicator is normally green.

- A red **Water Flow** LED indicates insufficient water flow.

- **Note:** When water flow is interrupted, both chlorine and ozone production is halted. A **Pb** error is displayed

- **Water Temperature Indicator**

- The **Water Temperature** LED indicator is normally green (water between 59-104 ° F)

- A red **Water Temperature** LED indicates water temperature is either too low or high.

5B Water Chemistry Parameters

VERY IMPORTANT NOTE! Your TrioPure™ is designed to provide continuous sanitation. We recommend the following water chemistry ranges and periodic checks to monitor your systems efficiency.

Weekly Checks:

Free Chlorine:	0.5 - 1.0 PPM
pH:	7.2 - 7.6
Visual Chlorinator Cell Inspection:	Ozone production (bubbles at the injector) (See Section 4 - Step 8, Page 15). Inspect for the build-up of calcium on the plates.
Calcium Hardness:	200-400 PPM
Total Alkalinity:	80-120 PPM
Cyanuric Acid:	80-100 PPM
Salt Level (Salinity):	3000 PPM
Saturation Index:	-0.3 to +0.3
Visual Salt Cell Inspection:	Wear, scale or debris (See Section 5d-3 for more info)

5b-1 Chlorine Level Requirements

During peak sanitizer demand (rainy season, heavy bather load, wind storms, high temperatures, etc.) it may be necessary to increase your sanitizer level by increasing the Chlorine Control Level setting. Conversely, during low sanitizer demand, you can decrease your Chlorinator Control Level to a lower setting. For extremely heavy sanitizer demand supplement with a Potassium Monopersulfate (non-chlorine) based shock.

WARNING: During cold-water conditions, sanitizer demand is reduced significantly. For colder climate regions with sustained low or freezing temperatures, contact your local pool professional for proper pool winterizing instructions.

WARNING: Excessive chlorine levels can cause corrosion damage to swimming pool rails, ladders, heater heat exchangers, light faceplates and other metallic equipment. Avoid over saturation of chlorine levels.

5b-2 pH Level:

When pH levels fall below the recommended range, sanitizer is used more quickly and can damage equipment. For pH levels higher than the recommended range, sanitizer becomes less effective. Improper pH also contributes to the strong smell, red eyes, dry itchy skin and brittle hair conditions associated with “too much chlorine”.

Water Chemistry Parameters - Continued

5b-3 Calcium Hardness And Total Alkalinity

The TrioPure™ provides 100% pure sodium hypochlorite and does not affect calcium hardness or total alkalinity levels. Maintain and balance only as needed.

5b-4 Cyanuric Acid (Stabilizer/Conditioner)

Cyanuric acid is sold as “stabilizer” or “conditioner” and allows the chlorine residual to last longer by protecting it from UV degradation. With low or no Cyanuric acid, it is possible for the chlorine to be used up as quickly as it enters the pool. Check and maintain your Cyanuric acid and salt levels at the same time since they both tend to deplete at the same rate.

5b-5 SALT LEVEL (Salinity)

Your TrioPure™ works most efficiently when salt levels are between 3,000 and 5,000 PPM. If the salinity levels fall below 3000 PPM, add salt according to the Section 3 - 3H When to Add Salt on page 12. Low salt will cause premature deterioration of the salt cell plates.

5b-6 Saturation Index (Si)

Saturation Index is a formula used to ensure that your total water chemistry does not fall into a scale-forming or corrosive condition. Protect your chlorinator cell, equipment and cementitious finish by having your water professionally tested periodically according to the Saturation Index or use this chart to determine your water balance.

Saturation Index Formula Calculation [Si = pH + TF + CF + AF - Constant]

Water Temp.	TF	Calcium Hardness	CF	Total Alkalinity	AF	TDS	Constant F
60° F	0.4	150	1.8	80	1.9	0-1000	12.1
66° F	0.5	200	1.9	100	2.0	1001-2000	12.2
76° F	0.6	250	2.0	125	2.1	2001-3000	12.3
84° F	0.7	300	2.1	150	2.2	3001-4000	12.4
94° F	0.8	400	2.2	200	2.3	4001-5000	12.5
103° F	0.9	600	2.4	250	2.4	5001-6000	12.6

TF = Temperature Factor
 CF = Calcium Factor
 AF = Total Alkalinity Factor
 Constant = TDS Factor

Test your swimming pool water for:

- pH
- Calcium Hardness
- Total Alkalinity
- TDS Levels

Use the equivalent factors in the Si equation.

EXAMPLE: For a pool with tested levels of pH = 7.6, Temperature = 81° F, Calcium Hardness = 300, Total Alkalinity = 140, and TDS = 4500 the calculated Saturation Index would be:

Si = 7.6 + 0.7 + 2.1 + 2.2 - 12.5 = 0.1.

The acceptable range for the Saturation Index = -0.3 to +0.3.

If Si is above +0.3, scaling, staining or cloudy water conditions can occur.

If Si is below -0.3, water can be corrosive to metals, etch / deteriorate plaster finishes, or irritating to the skin.

5b-7 Nitrates and Phosphates

Under ideal conditions, nitrate and phosphate levels in swimming pools are zero (0). However, in some geographic locations, these compounds are found in source water or are introduced from the environment. It is important for the pool owner to be aware that relatively small amounts of either nitrates or phosphates can have a significant negative impact on the performance of ozone and chlorine in swimming pools.

If you experience conditions such as cloudy water, algae growth, or unable to maintain a measurable level of chlorine in the pool (when the TrioPure™ is working correctly), have your water

tested at a local pool store for nitrates and phosphates. Your local pool professional can then advise you on how to remove these compounds from the pool.

5-C WINTERIZATION

During cold-water conditions, sanitizer demand is reduced significantly. For colder climate regions with sustained low or freezing temperatures, contact your local pool professional for proper pool winterizing instructions.

Step 1 - Drain all plumbing lines to protect the TrioPure™ from damage due to freezing.

5-C WINTERIZATION (Continued)

Step 2 - Remove the drain plug from the bottom of chlorinator cell and let all water drain from the TrioPure™.

Step 3 - Replace drain plug back into the TrioPure™.

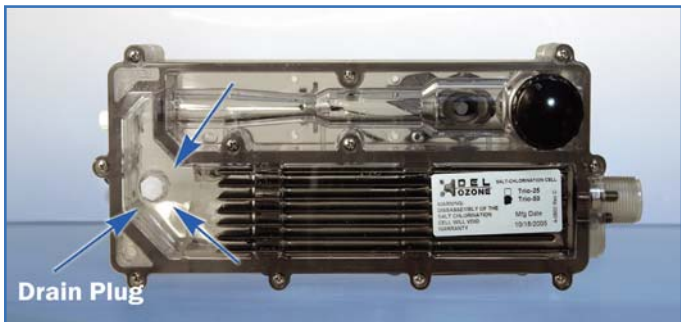


Figure 22 - Chlorinator Cell Drain Plug

5d-1 Injector

Visually check the injector (see Figure 19); if clogged, there will be a noticeable reduction in ozone bubbles seen through the Chlorinator Cell. If cleaning is required, turn off power and water flow to the TrioPure™. Remove the Chlorinator Cell (See Section 5D-3). Remove the plug at the injector and use the Injector Cleaning Tool (end of zip tie) attached to the line going to the injector (or suitable small plastic tool) to push material down through the injector slot. Replace the Chlorinator Cell onto the TrioPure enclosure. **Note:** Never use a metal tool to clean the injector slot.

5d-2 Chlorinator Cell Plate Cleaning

Option 1 - (Acid Solution Injection) Turn off power to the TrioPure™ and main pool circuit breaker. Prepare a solution of 4 parts water to 1 part Muriatic Acid. Always add acid to water, never add water to acid. Disconnect the ozone line going into the chlorinator Cell. Connect the acid injection line to the line going into the chlorinator cell. Turn on main circuit breaker and power to the TrioPure and check the chlorinator cell for bubbles at the injector. Place the other end of the Acid Injection Line into the acid solution. Observe that the solution is being drawn up into the chlorinator cell. When the acid solution has been used up, run clean water through the line to clean acid from the line. Turn off power to the TrioPure™ and

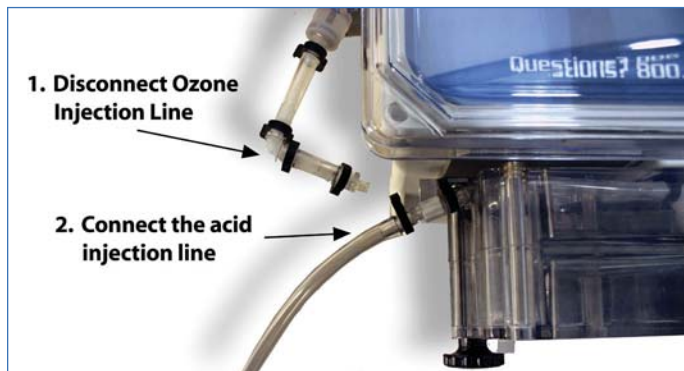


Figure 23 - Acid Injection line

re-connect the line onto the Chlorinator Cell to the line coming from the enclosure. Turn on power to the TrioPure™ and check the chlorinator cell for bubbles at the injector. Properly clean and store the acid injection materials.

Option 2 - (acid soaking) Turn the power off to the TrioPure™ and main pool circuit breaker. Remove the chlorinator cell (See Section 5D-3) and place on a level surface with the front of the cell facing up. Install the elbow fitting to the union at the Water Out location on the chlorinator cell. Prepare a solution of 4 parts water to 1 part Muriatic Acid. Always add acid to water, never add water to acid. Carefully pour acid solution into the elbow fitting just until the Chlorinator Cell plates are submerged. Allow the plates to soak for about 30 minutes, or until effervescence stops and plates are clean. Take care not to let the acid solution into the front chamber of the chlorinator cell, as damage to the flow switch may result.

When the chlorinator cell plates appear to be clean (free of calcium deposits), pour the acid solution from the chlorinator cell into the swimming pool.



Figure 24 - Chlorinator Cell Plate Cleaning

5d-3 Chlorinator Cell Removal

NOTE: CAREFULLY FOLLOW ACID MANUFACTURER'S SAFETY PRECAUTIONS.

Step 1 - Turn the power off to the TrioPure™ and main pool circuit breaker. Close the two ball valves (if installed) to the TrioPure™ and disconnect the union going to the chlorinator cell.

Step 2 - Disconnect the fitting on the Lower Left Hand side of the TrioPure™ by rotating the fittings halves in opposite directions and separate the two halves.

Step 3 - Remove the two electrical terminals by loosening the small hand knobs on the right side of the chlorinator cell and slipping the terminal lugs off the connector studs. If the terminals are attached with 1/4-20 nuts, remove the nuts to detach the wires. Retain the stainless steel washers for reassembly. Note the order of disassembly and reverse for reassembly.

Step 4 - Remove the Left Hand Side Attachment shaft by unscrewing the hand knob.

Step 5 - With one hand supporting the chlorinator cell in the middle, unscrew the Right Hand Side attachment knob. As this knob is unscrewed, the chlorinator cell will lower. Use caution and do not allow the weight of the chlorinator cell to stress the wires on the electrical connectors.

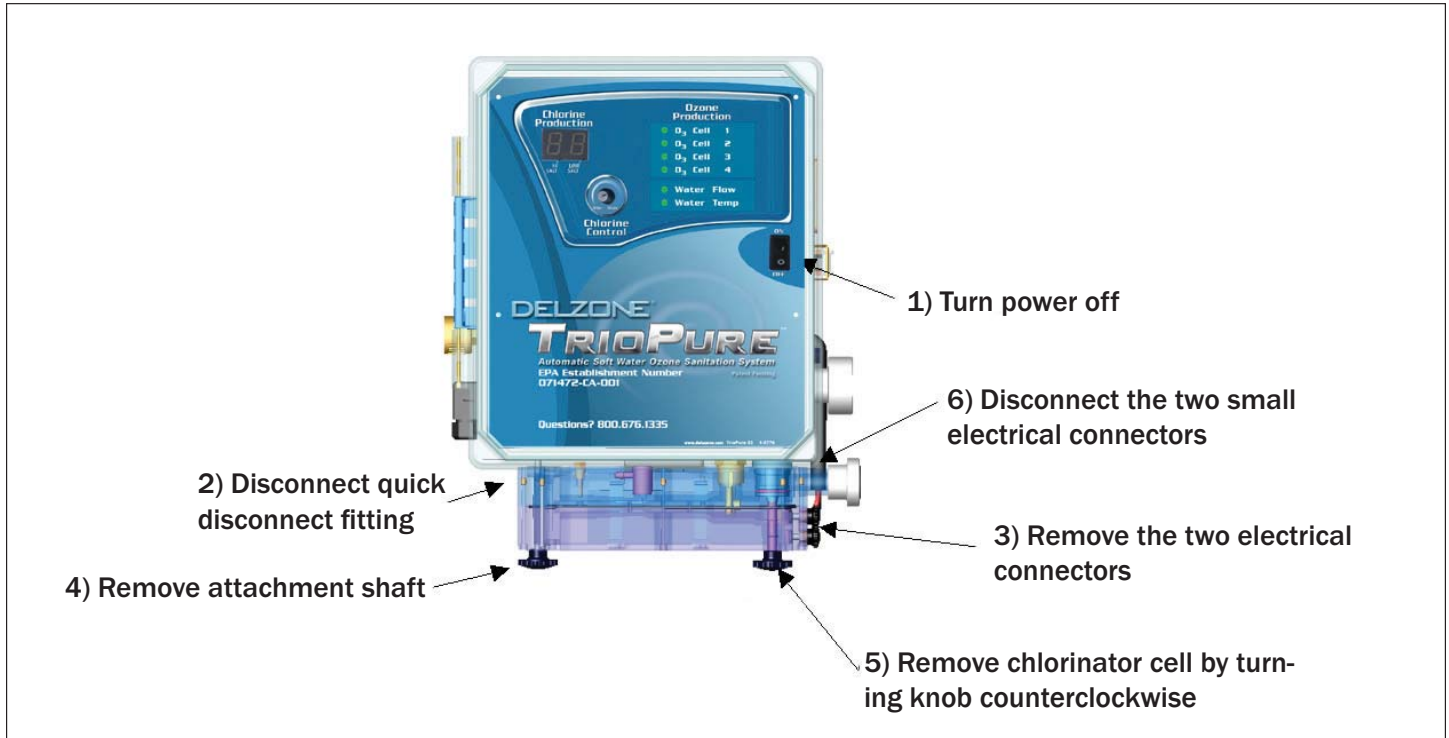


Figure 25

Step 6 - With the chlorinator cell now mechanically detached, access the two small electrical connectors for the flow switch and the temperature sensor and disconnect these connectors from chlorinator cell. The connectors have a locking feature that must be raised to separate the connector plug and socket. Remove the chlorinator cell from the TrioPure™ enclosure.

5d-4 Air Filters

The TrioPure™ has screen filters located at both the cooling fan air intake on the right side of the enclosure and the air exhaust at the bottom of the enclosure (Figure 26). The screen filters are intended to keep insects and debris out of the TrioPure™ unit. Allowing these screen filters to become clogged could result in the TrioPure™ shutting down to protect from overheating. Annual inspection and cleaning of the screen filters is recommended as follows:



Figure 26

Air Intake Screen Filter: Turn off power to the TrioPure™. Remove the cover by sliding the cover up (Figure 27). Once the cover is removed visually check the filter for

debris. If the filter appears to require cleaning, carefully remove plastic filter keeper (Figure 28) by lightly prying it out. Remove the screen filter and clean it. Replace filter, keeper and cover.



Figure 27

Air Exhaust Screen Filter: The Air Exhaust filter should typically not require servicing. After removing the Chlorinator Cell (See Section 5D-4), visually check the filter for debris. If the filter appears to require cleaning then remove plastic filter keeper by lightly prying it out. Remove the screen filter, clean and replace.

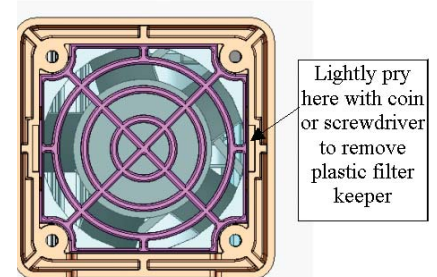

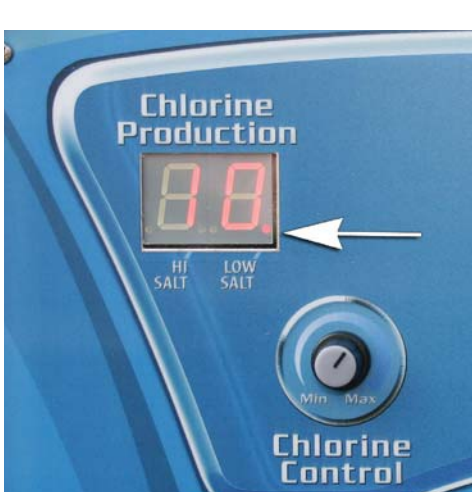
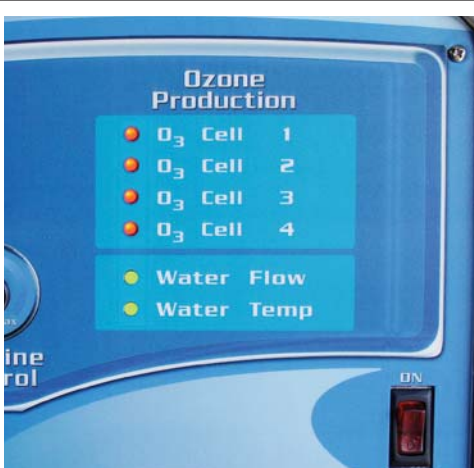






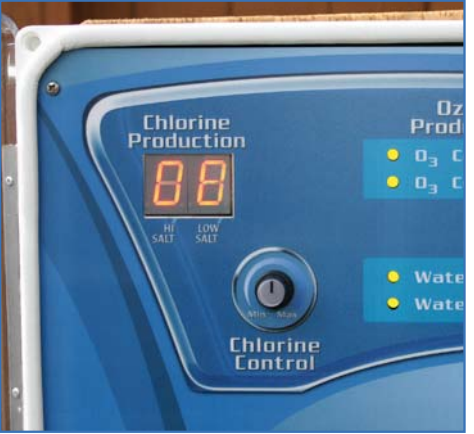

Figure 28

SECTION 6 Troubleshooting

6A Troubleshooting the TrioPure™

Problem	Cause(s)	Solution(s)
High Salt Indicator LED is Flashing		
 <p>Figure 29</p>	<p>A) The TrioPure™ has detected a possible high salt condition.</p> <p>B) There is excessive scale build-up or debris on the chlorinator cell plates.</p>	<p>A) Check the salt level (salinity) of the pool water with a test strip or digital meter. Never dilute the pool water without verifying the salt level with a digital meter or test strip first. If the salt level is over 5,000 ppm, then add fresh water, run the pool pump for 24 hours, then check the salt level again. Repeat as needed to reduce the salt level to within 3,000 to 5,000 ppm. Note: Water must be pumped out of the pool before fresh water can be added to dilute the pool.</p> <p>B) If the tested salt level is within specified limits, check the chlorinator cell plates for scale formation or debris caught between the plates. Clean as required (refer to Section 5d-3) Note: High Salt Indicator may flash momentarily when adjusting the Chlorine Control.</p>
Low Salt Indicator LED is Flashing		
 <p>Figure 30</p>	<p>A) The TrioPure™ has detected a possible low salt condition.</p> <p>B) Low Water Temp.</p> <p>C) Low Power Setting</p>	<p>A) Check the salt level (salinity) of the pool water with a test strip or digital meter. Never add salt to the pool without verifying the salt level. If the salt level is below 3,000 ppm, then add salt (refer to Section 3 - 3H 'When to Add Salt' on page 12), run the pool pump for 24 hours, then check the salt level again. Repeat as needed to bring the salt level to within 3,000 to 5,000 ppm.</p> <p>B) Check the pool temperature. If the pool water temperature is low, combinations of low temperature and/or Chlorine Control setting can cause the Low Salt LED indicator to flash.</p> <p>C) If Chlorine Control knob setting is set too low (from "1" to "4"), then disregard the Low Salt indicator. Combinations of low temperature and/or Chlorine Control setting can cause the Low Salt LED indicator to flash.</p>
Ozone Production Cell Indicators Turn Red (O₃ Cell 1–O₃ Cell 4 for TrioPure-50 & O₃ Cell 1–O₃ Cell 2 for TrioPure-25)		
 <p>Figure 31</p>	<p>A) Insufficient water flow.</p> <p>B) The ozone CD cell has a blown fuse.</p> <p>C) There is a faulty ozone power supply.</p>	<p>A) If the Water Flow indicator is red, there is insufficient water flow, which causes the TrioPure™ to turn off all ozone cells. Correct the water flow problem before further troubleshooting.</p> <p>B) With power off to the unit, open the enclosure, remove the front panel and examine fuse – replace as necessary, then close up the TrioPure™ and restore power.</p> <p>C) If replacement fuse blows (indicator goes red) on power up, replace the ozone cell. Call for Service. The TrioPure™ will continue to work with the remaining ozone CD cells.</p>

Problem	Cause(s)	Solution(s)
Water Flow Indicator turns red & Chlorine Production displays Pb		
 <p>Figure 32</p>	<p>A) Water flow to the TrioPure™ was restricted due to an obstruction in the system.</p>	<p>A) Turn the power off to the TrioPure™ and main pool circuit breaker. Check pool equipment for obstructions, and remove as necessary. Check filter, clean or pump to waste as required. Turn the pool pump on and then the TrioPure™ back on – both Water Flow and Ozone Production cell indicators should return to green.</p>
	<p>B) Flow switch has become disconnected from the TrioPure™ enclosure.</p>	<p>B) Turn the power off to the TrioPure™ and main pool circuit breaker. Check the wiring from the flow switch to the main harness on the right side of the enclosure and reconnect if necessary. Turn the power on to the TrioPure™ and main pool circuit breaker and check that both Water Flow and Ozone Production cell indicators are green.</p>
Water Temperature Indicator turns red & Chlorine Production displays Pb		
 <p>Figure 33</p>	<p>A) Water is too hot.</p>	<p>A) Lower the pool's water temperature to less than 104 °F. The Water Temp indicator should return to Green when the pool temperature is back within the TrioPure's specified limits.</p>
	<p>B) Water is too cold.</p>	<p>B) Raise the pool's water temperature to more than 59 °F. The Water Temp indicator should return to Green when the pool temperature is back within the TrioPure's specified limits. Note: if you intend to operate the Triopure all winter without heating the water, turn the Chlorine Control knob fully counter-clockwise to the OFF position and use only the ozone for sanitizing. The red Water Temp light will remain on until the water temperature is above 59 °F.</p>
	<p>C) Temperature sensor has become disconnected from the TP enclosure.</p>	<p>C) Reconnect sensor</p>
Chlorine Production display reads CL		
 <p>Figure 34</p>	<p>A) The salt chlorinator is in Cleaning mode.</p>	<p>A) The TrioPure™ will shut off power to the salt chlorinator when in Cleaning mode. If the Chlorine Control display shows CL longer than twenty-four (24) hours, contact our telephone support number, 800.676.1335 ext. 293, for service.</p>

	Cause(s)	Solution(s)
Chlorine Production display reads OL		
 <p>Figure 35</p>	<p>A) The Salt Chlorinator plates have scale build-up</p> <p>B) The Salt Chlorinator plates are shorting out due to a foreign object lodged in the cell.</p> <p>C) Cell terminals have become loose, disconnected, or corroded</p>	<p>A) Look through the salt chlorinator cell, checking for any white scale build-up on the plates. If scale build-up is found, clean the chlorinator cell plates per Section 5d-3, page 18, of this manual. Check and balance pool chemistry as required after cleaning.</p> <p>B) Look through the salt chlorinator cell, checking for any object that may have gotten through the filter and become stuck in the salt chlorinator plates (i.e., hair-pin, paper clip, etc.). Contact our telephone support number, 800.676.1335 ext. 293, for service.</p> <p>C) Tighten, reconnect, or clean as necessary</p>
Chlorine Production display will not read all the way to 10		
 <p>Figure 36</p>	<p>A) Pool water low salinity, low temperature, or calcium buildup on the chlorinator cell are restricting the amount of current drawn at the chlorinator cell</p>	<p>A) Check the pool salt level (salinity) and water temperature. If either level is low this may affect the amount of chlorine production. If the tested free chlorine level is too low or if the pool shows signs of insufficient chlorine production (algae or chlorine smell) in the pool water you may increase the salinity slightly in order to make the TrioPure™ produce more chlorine. Add salt in small (25-50 pound) increments and allow 24 hours for the salt to dissolve before taking the next reading and making any more adjustments. Always keep the salinity below 5,000 ppm. If there is scale buildup, clean chlorinator cell per Section 5-d3.</p>
Indicator lights on front panel are not on.		
 <p>Figure 37</p>	<p>A) The TrioPure™ is switched off.</p> <p>B) The TrioPure™ is not getting power.</p> <p>C) Main breaker is off.</p> <p>D) Main fuse is blown.</p>	<p>A) Open the TrioPure™ and turn the power switch on.</p> <p>B) Check main pool circuit breaker</p> <p>C) Check main breaker</p> <p>D) Check main fuse and replace if necessary. Note: A blown fuse can be caused by excessive salt levels above 5,000 ppm with the Chlorine Control knob set to full power (10).</p>

SECTION 7 Contact, Ordering Information, Replacement Parts & Warranty

7-A Technical Support Contact

CONTACT TECHNICAL SUPPORT

Online: www.delozone.com • Phone: (800) 676-1335, extension 293 • e-mail: triopure@delozone.com

Online: Received 24/7. Click Contact DEL/Customer Support Info and e-mail a description of your needs. A Technical Support representative will reply by way of e-mail.

By Phone: Monday through Friday 8:00am - 4:30pm, PST. Outside of these hours, please leave callback information. A Technical Support representative will return your call at the first available opportunity. (800) 676-1335, extension 293.

The majority of TrioPure™ problems can normally be addressed and resolved by e-mail or by phone. Please have the following information at hand before contacting Technical Support:

When filing a claim, you must provide:

- | | |
|---|---|
| 1. Your name, mailing address and telephone number. | 6. Pool Salt Level |
| 2. The selling dealer's name. | 7. Pool pH, Chlorine Level, Total Alkalinity |
| 3. Model# (Trio-25, Trio-50), serial # and proof of date of purchase. | 8. TrioPure™ Chlorine Production reading |
| 4. Date code on TrioPure™. | 9. Status of TrioPure™ Ozone cell LED's |
| 5. The date and description of the failure. | 10. Status of TrioPure™ Water flow & temp LED's |

Authorization to return a unit or part to the plant of manufacture must be obtained from DEL Ozone Field Service. DEL Ozone will release a RETURN MATERIALS AUTHORIZATION (RMA) NUMBER. After receiving the RMA number the product or part in question must be returned to Del Ozone, freight prepaid, with the RMA number clearly marked on the outside of the package. All pre-authorized defective parts must be returned to DEL Ozone within thirty (30) days and be packaged to prevent shipping damage. Under no circumstances may any product be returned to DEL Ozone without prior authorization. You must call or write DEL Ozone prior to returning product or your returned goods shipment will be refused. Upon receipt of preauthorized returned goods, DEL Ozone will repair or replace, at Del Ozone's option, the product(s) proven to be defective in materials or workmanship and return them (freight prepaid for products under warranty). Buyer's acceptance of the product and use thereof constitutes acceptance of these terms.

There are Del Ozone Authorized Service Centers in most areas of the USA. If the warranty problems cannot be resolved by our Technical Support Personnel then Del will arrange for the nearest DEL Ozone Authorized Service Center to schedule a service call.

7B. Ordering information:

To locate a dealer nearest you visit www.delozone.com or call DEL at **1-805-541-1601, ext 249**.

Be prepared with the following information:

- **Name** • **Address**
- **DEL Model #** • **Date Purchased**

7C. Standard replacement parts list:

		TrioPure-25	TrioPure-50
1.	Assembly, Ozone Cell-Pwr Supply O-rings, and Fuse	9-0649	9-0649
2.	Chlorine Control-Display PCB	9-0665-01	9-0665-02
3.	Ozone Control-Display PCB	9-0664-01	9-0664-02
4.	Salt-Chlorination Cell and Flow Switch	9-0663-01	9-0663-02
5.	Filter Media, Vent-Fan	7-1217	7-1217
6.	Bypass Manifold	9-0645	9-0645
7.	Chlorine Control Knob	7-1234	7-1234
8.	Mixing Degas Vessel (MDV)	MDV-30	MDV-30
9.	Installation/Operation Manual	4-0777	4-0777

7C. Standard replacement parts list (Continued)

TrioPure-25 TrioPure-50

10.	Quick Troubleshooting Guide	4-0779	4-0779
11.	Fuse 3.0 A (for 120V)	5-9019	5-9019
12.	Fuse 1.5 A (for 240V)	5-9020	5-9020
13.	Fuse 0.5 A, Ozone cell	5-0180	5-0180
14.	Tubing - 3/16"ID x 5/16"OD Black Air Tubing for Ozone Inlet	7-0079	7-0079
15.	Ozone Tubing/Check Valve Replacement Kit	9-0674-01	9-0674-01
16.	Acid Cleaning Kit	9-0653	9-0653

7D. DEL Ozone TrioPure™ Limited Warranty

The limited warranty set forth below applies to products manufactured by DEL Ozone – 3428 Bullock Lane, San Luis Obispo, California 93401, and sold by DEL Ozone or its authorized dealers. This limited warranty is given only to the first retail purchaser of such products and is not transferable to any subsequent owners or purchasers of such products.

DEL Ozone warrants the TrioPure™, including all parts and components thereof, to be free of defects in material and workmanship. This limited warranty applies only if the TrioPure™ is installed and maintained in accordance with the TrioPure™ installation instructions and specifications provided with the product.

This limited warranty commences on the date of installation or if written proof of the date if the initial system installation is not provided to DEL Ozone, the manufacturing date code on the TrioPure™ unit + sixty (60) days will be the sole determinant of the date of the initial system installation and shall remain in effect for:

One (1) year on all parts with the exception of the chlorine cell.

One (1) year on all parts of the chlorine cell, with an additional two (2) years on a pro-rated basis based upon the following formula. Defects that become evident during years 2 and 3 of the warranty will be repaired or product replaced at the following costs to the TrioPure™ owner:

Year 2: 50% of the current list price

Year 3: 75% of the current list price

One (1) year on labor for removal or reinstallation of the initial system due to defects in material and workmanship. The consumer will be responsible for any additional fees or expenses imposed by the service center.

(All parts) ANY REPAIR OR REPLACEMENT WILL BE WARRANTED ONLY FOR THE BALANCE OF THE ORIGINAL WARRANTY PERIOD. NOTE: USE ONLY DEL OZONE AUTHORIZED REPLACEMENT PARTS. USE OF ANY OTHER PART(S) WILL AUTOMATICALLY VOID THIS WARRANTY.

THIS LIMITED WARRANTY DOES NOT INCLUDE ANY OF THE FOLLOWING: (a) repairs/modifications made or attempted by other than DEL Ozone or one of its Authorized Service Centers; (b) any repair or replacement of such parts necessitated by faulty installation, improper maintenance (**Calcified chlorinator cells are not covered**), improper operation, misuse, abuse, negligence, accident, fire, repair materials, lack of reasonable and necessary maintenance and/or unauthorized accessories; (c) any such products installed without regard to required local codes and accepted trade practices or; (d) ANY IMPLIED WARRANTY OF MERCHANTABILITY OR IMPLIED WARRANTY OF FITNESS FOR PARTICULAR PURPOSE, AND SUCH WARRANTIES ARE HEREBY DISCLAIMED; AND (E) DEL OZONE SHALL NOT BE LIABLE UNDER ANY CIRCUMSTANCES FOR LOSS OF USE OF SUCH PRODUCTS, LOST PROFITS, DIRECT DAMAGES, INDIRECT DAMAGES, CONSEQUENTIAL DAMAGES AND/OR INCIDENTAL DAMAGES.

This warranty gives you specific legal rights. You may have other rights, which vary from state to state.

TO VALIDATE THIS WARRANTY PRODUCT

Registration should be completed for each TrioPure™ product purchased. You may register your products online at www.delozone.com Additionally, Product Registration cards are included with each TrioPure™ product, for Registration by mail. You may also register by calling (800) 676-1335, extension 293.

