

# RESIDENTIAL SPA

## Natural Spa Water Treatment

**PZ5** - Portable, 24-Hour Ozonation for Spas and Custom Applications

*INSTALLATION GUIDE and  
OPERATION MANUAL*



**T-O<sub>3</sub> NATURAL TECHNOLOGY**

Reduces Chemical Usage,  
Improves Sanitation  
Produces Crystal Clear Water

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# PZ5

## IMPORTANT SAFETY INSTRUCTIONS

### Read and Follow All Safety Instructions

- Read and be familiar with this manual before installing or operating your new PZ5.
- All applicable electrical codes must be followed during and after installation. All connections to be made by a qualified electrician.
- Voltage must be determined before unit is installed.
- **DANGER** - Risk of electric shock.
  1. Replace damaged cord immediately.
  2. Do not bury cord.
  3. Connect only to a properly grounded, grounding type receptacle.
- A wire connector is provided on the unit to connect a minimum No. 8 AWG solid copper conductor between this unit and any metal equipment, metal enclosures of electrical equipment, metal water pipes, or conduit within 5 feet of the unit.
- Wear safety glasses when drilling and tapping holes for installation of unit.
- **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:** Disconnect all power to pool equipment prior to installation, maintenance, or removal of the PZ5.



**WARNING:** Do not permit children to operate this product



**WARNING:** To avoid risk of electric shock, fire, or injury, service should only be performed by a qualified pool service professional.



**WARNING:** Installation must be performed in accordance with the National Electric Code and any applicable local or state installation codes.



**WARNING:** When mixing acid with water, ALWAYS ADD ACID TO WATER, NEVER WATER TO ACID.

## SAVE THESE INSTRUCTIONS

### INTRODUCTION TO OZONE

The Prozone system produces ozone when air is drawn across a special high-energy vacuum ultraviolet (VUV) lamp, converting some air to ozone. Ozone is a molecule of oxygen that is formed when three atoms of oxygen are bound together instead of the normal two atoms. The extra oxygen atom makes ozone the most powerful oxidizer and sanitizer readily available. Since ozone is unstable and quickly decomposes to normal oxygen under normal conditions, it cannot be shipped or stored. Therefore, it must be manufactured on site for immediate use. In normal air it lasts about an hour. In normal spa/pool water it lasts just long enough to purify the water - less than 1 second. Although ozone is mainly thought of as a sanitizer, it acts primarily as an oxidizer in the pool environment. In a typical spa/pool, using chlorine only, up to 90 percent of the chlorine may be used up in reactions unrelated to disinfection. The by-products of these reactions are combined chlorines. Combined chlorines are the cause of eye irritation, odor, and the other unpleasant side effects of chlorination. When ozone is used, it oxidizes a large portion of the contaminants (usually referred to as bather load) which results in the formation of combined chlorines. The result is that more chlorine is available for disinfection and less chlorine is required to maintain the pool. Ozone also provides some disinfection, but an ozone residual cannot be established, so the use of chlorine or bromine is always recommended.

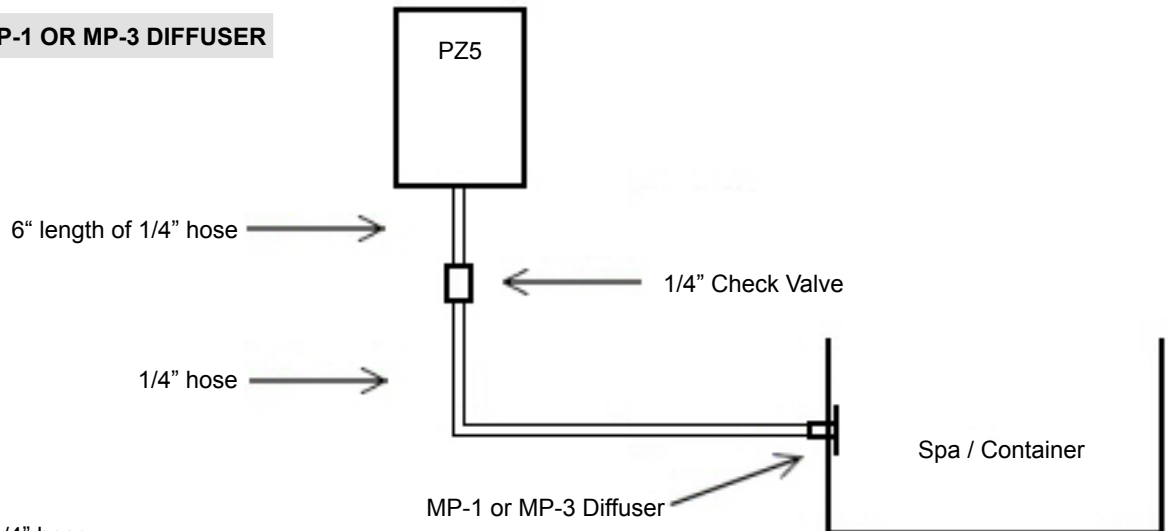
### PREPARING FOR INSTALLATION

**NOTE:** The instructions in this document provide general installation guides. Consult your dealer for specific installation instructions. Additional information is available at [www.prozoneint.com](http://www.prozoneint.com). Check system for any visible shipping damage. If damage has occurred, contact the delivery company and your dealer immediately. Before beginning installation, please turn to the Installation Kit Inventory Section and verify that all listed parts are on hand.

1. Check electrical system: Timer set properly; 240VAC double switched per N.E.C. standards; 120 VAC single switched.
2. Check for and correct all leaks in plumbing.
3. Check the filters: Clean or replace as needed.
4. Shock the spa using non-lithium-based shock. The use of Calcium Hypochlorite or Sodium Hypochlorite is recommended.
5. For best results, drain water and fill with fresh water. It is easier to clean unused water, though the ozonator will still remove substantial impurities from fresh tap water!
6. CAUTION: Make sure voltage is the same as prescribed on the side of the Prozone Ozone Generator.
7. Start all equipment and check pressure of the filter.

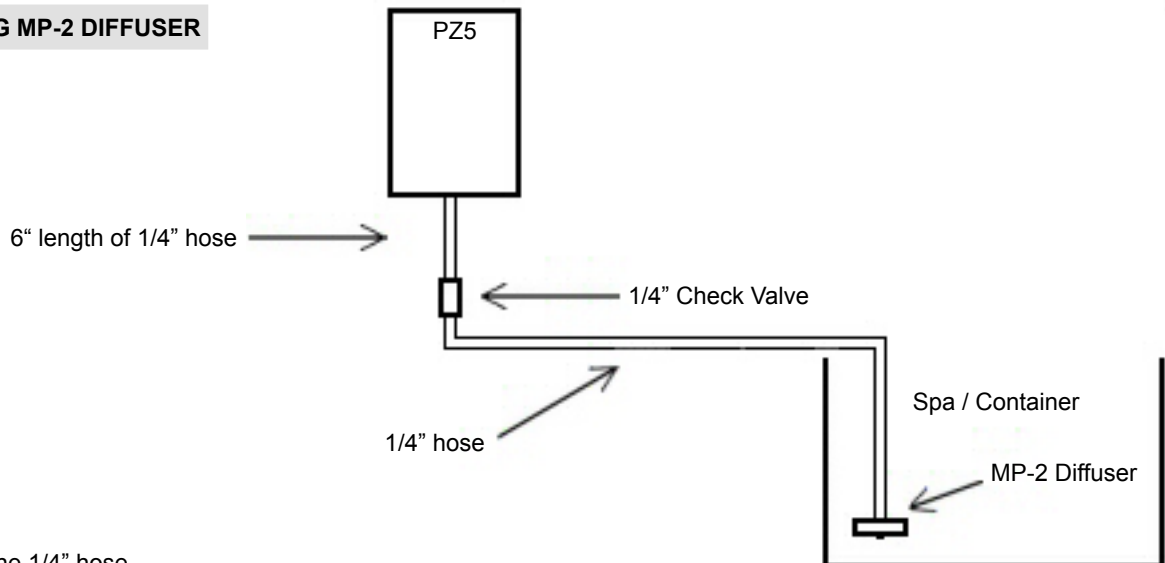
The PZ5 Ozone Generator may be mounted in any orientation. Place the unit above water level or loop the ozone delivery hose above water level. This will prevent water from siphoning down into the ozonator.

## INSTALLATION USING MP-1 OR MP-3 DIFFUSER



1. Cut a 6" length of the 1/4" hose.
2. Attach one end of the 6" length of hose to the 1/4 barb on the Prozone Ozone Generator and secure with a clamp.
3. Make sure you can blow air through the Check Valve towards the spa/container, this is the INLET side of the Check Valve. Attach the other end of the 6" length of hose to the INLET side of the Check Valve and secure with a clamp.
4. Attach one end of the remaining length of 1/4" hose to the other barb (OUTLET) on the Check Valve and secure with a clamp.
5. Route the hose so that at some point it passes above the water level. You may need to tie the hose up to keep it in place.
6. Drain the water from the spa/container.
- 7a. If using a MP-3 Diffuser;
  1. Drill a 3/4" hole in the side of the spa/container near the bottom. Hole should be cut from the inside.
  2. Install the MP-3 Diffuser in the 3/4" hole and secure with furnished nut.
- 7b. If using a MP-1 Diffuser;
  1. Drill a 1-1/8" hole in the side of the spa/container near the bottom. Hole should be cut from the inside.
  2. Install the bulkhead fitting in the 1-1/8" hole and secure with the furnished nut, then install the MP-1 Diffuser into the bulkhead fitting.
8. Attach remaining end of the 1/4" hose to the MP-1 or MP-3 fitting and secure with a clamp.
9. Electrical: If hardwiring, system is either 120VAC, 60Hz; 240VAC, 50/60Hz or 12VAC/DC. Wire Prozone Ozone Generator system to circulation pump switch or timer. Prozone system and circulation pump should be started simultaneously. Use N.E.C. or local code grounding and installation procedures for spa equipment.

## INSTALLATION USING MP-2 DIFFUSER



1. Cut a 6" length of the 1/4" hose.
2. Attach one end of the 6" length of hose to the 1/4 barb on the Prozone Ozone Generator and secure with a clamp.
3. Make sure you can blow air through the Check Valve towards the spa/container, this is the INLET side of the Check Valve. Attach the other end of the 6" length of hose to the INLET side of the Check Valve and secure with a clamp.
4. Attach one end of the remaining length of 1/4" hose to the other barb (OUTLET) on the Check Valve and secure with a clamp.
5. Route the hose so that at some point it passes above the water level. You may need to tie the hose up to keep it in place.
6. Attach remaining end of 1/4" hose to barb on the diffuser, secure both ends with clamps, and the diffuser may simply be hung over the side of the spa/container.
7. Electrical: If hardwiring, system is either 120VAC, 60Hz; 240VAC, 50/60Hz or 12VAC/DC. Wire Prozone Ozone Generator system to circulation pump switch or timer. Prozone system and circulation pump should be started simultaneously. Use N.E.C. or local code grounding and installation procedures for spa equipment.

### OPERATION

The Prozone system produces ozone when air is drawn across a special high-energy vacuum ultraviolet (VUV) lamp, converting some air to ozone. Ozone is introduced into the water through a porous metal disk (diffuser) which creates extremely fine bubbles. As the bubbles rise, the ozone is absorbed into the water where it reacts. In the case of spa applications, the ozone is introduced via the "ozone ready" air venturi inherent in virtually all spas manufactured today. For spa and other water containers not ozone-ready, or for temporary or simple installations, a diffuser may be inserted into the ozone generator output hose, and the diffuser merely hung over the side.

### WATER CHEMISTRY

- pH - 7.2 to 7.6. Ozone is pH neutral and will not cause the pH value of the water to fluctuate.
- Santizers - A chlorine level of 0.5 ppm to 1 ppm is recommended.
- Shock - Non-lithium-based material such as Calcium Hypochlorite or Sodium Hypochlorite, etc.
- The use of other chemicals is not usually required and they could cloud the spa water.

### INSTALLATION KITS

#### A05 Kit for MP-1 Diffuser

Description	Part Number	Quantity
Plastic clamp 1/2"	20185	4
Check Valve 1/4"	20214	1
MP-1 Diffuser	600058	1
Clear Hose 1/4"	20263	72"
Diffuser, Air Body W/FTG	600062	1

#### A06 Kit for MP-2 Diffuser

Description	Part Number	Quantity
Plastic clamp 1/2"	20185	4
Check Valve 1/4"	20214	1
MP-2 Diffuser	600059	1
Clear Hose 1/4"	20263	72"

#### A07 Kit for MP-3 Diffuser

Description	Part Number	Quantity
Plastic clamp 1/2"	20185	4
Check Valve 1/4"	20214	1
MP-3 Diffuser	600060	1
Clear Hose 1/4"	20263	72"

### TROUBLESHOOTING GUIDE

Problem	Probable Cause	Remedy
No light from Prozone unit	Power not connected	Check electrical connections
No bubbles from Diffuser	No power to unit	Voltage incompatibility
	Defective lamp or other component	Check power source
		Return to dealer
Cloudy water	Ozone generator operation time too short	Increase operation time
	Water chemistry out of balance	Check reading and balance accordingly
	Total Dissolved Solids (TDS) level too high	Refer to dealer for proper water testing
	Filter not working	Clean or replace filter