

# SPARKLING CLEAR, ALGAE-FREE WATER WITHOUT CHEMICALS

The Triangular Wave Technologies Enhanced  
Control Pool Management System



## Easy on the Eye

Gain peace of mind with TWT Enhanced Control Pool Management Systems the chemical-free, safe and easy way to enjoy your pool and spa season! Your pool is a place for relaxation. Everyone wants to avoid problems with his or her pool, and also with the effects of handling, storing, and swimming in harsh chemicals and treated water. TWT has the solution for both!

## Super Sparkling Water

The Enhanced Control Pool Management System works with your existing pool filter and pump systems to control deposits and purify the water, killing and removing harmful bacteria and algae, and preventing corrosion

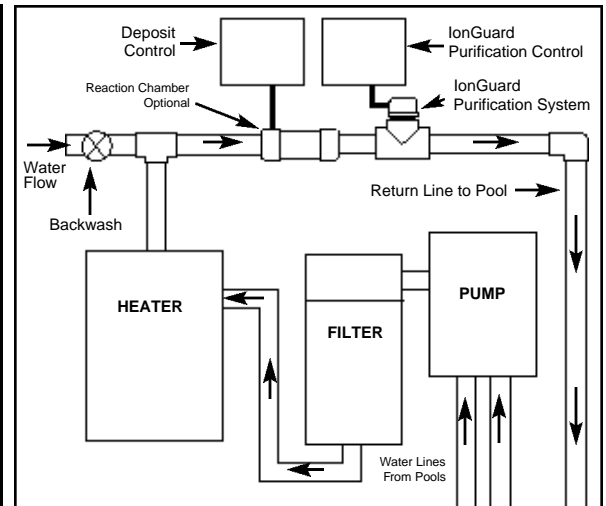
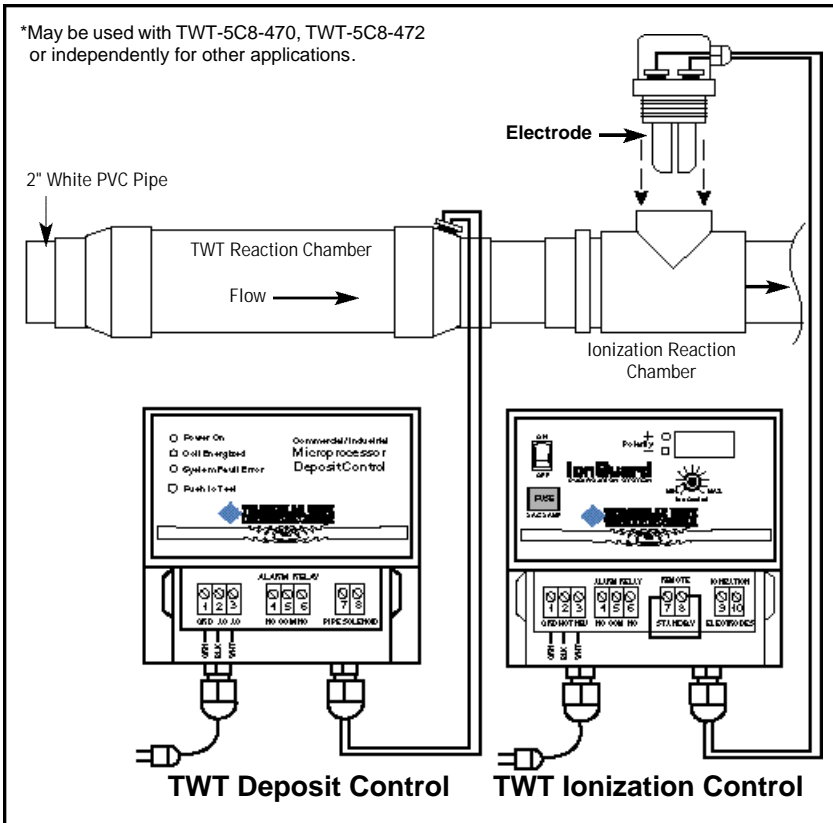
and deterioration of your pipes and equipment. Reduce your chemical treatments and maintenance efforts by 80% or more, and make your swimming experience safe, fun, and environmentally friendly.

- Protect your water lines and equipment from algae, bacteria, and corrosion
- Protect your pool investment from the harsh effects of chemicals
- Lower your electric bills



# TRIANGULAR WAVE TECHNOLOGIES IONGUARD PURIFICATION SYSTEM

\*May be used with TWT-5C8-470, TWT-5C8-472 or independently for other applications.



Typical installation overview of equipment room



triangular wave technologies Microprocessor deposit Control Unit TWT-402, Industrial Ionization Disinfection System TWT-ID-02 and a Factory Wrapped 2" Industrial PVC Reaction Chamber TWT-IRC-02

TWT Deposit Control/Ionization Purification System 2-inch Ionization Unit with Integrated\* TWT-5C8-402

The TWT IonGuard Purification System purifies water through a process called ionization. This process utilizes a low voltage direct current [DC] to place precise and minute amounts of copper and silver ions into water systems. Copper ions kill algae and silver ions kill bacteria. An ion is merely an electronically charged atom or group of atoms. An atom acquires this charge by gaining or losing electrons. Negatively charged electrons are one of the three major subatomic particles, the others being protons, which have a positive charge, and neutrons, which have no charge.

Ions in the Triangular Wave System are positively charged; algae, bacteria and other particles in the water are negatively charged. The positive to negative attraction allows the ions to attach to the organisms, penetrate their cell walls, and kill them. The IonGuard Purification System is an electrolytic copper/silver ion generator. The system units contain specially cast copper/silver alloy electrodes. These electrodes are mounted in a PVC housing designed for easy access.

When the system is used in conjunction with a filter, the dead bacteria with the silver ion attached will be large enough for the filter

to remove. Normal filter backwashing will then remove the dead particles. The criteria for copper and silver in water are as follows: The EPA standard for drinking water is 1.0 ppm (parts per million) maximum for copper and 50 ppb (parts per billion) maximum for silver. The system is programmed so that a water test showing 0.25 ppm to 0.35 ppm copper automatically provides the proper ratio of silver. This will produce drinking water quality in any water system treated. The TWT treatment requires no chemicals in its function of controlling algae and bacteria.

A "current source" generator powers the IonGuard Purification System. Other manufacturers use "voltage source" generators to power their ionization units. In all ionization units, copper and silver ions plate off of the electrodes and enter the water. Over time, the electrodes will become smaller, and the gap between the electrodes will become larger. TWT's current source generator will automatically compensate for the change in gap size, while voltage source generators must be manually inspected and adjusted. The current source generators in the TWT IonGuard Systems offer trouble free operation. We recommend that the IonGuard Purification System be installed down-

stream of a TWT Deposit Control System. The Deposit Controller will keep the IonGuard System electrodes free of scale and other deposits for more effective results. At the same time, the Deposit Control System will help eliminate scale and biofilm deposits throughout the entire water system.

Without the TWT Deposit Control System in place, ionization electrodes may develop either a layer of scale or oxidation. In either case, it is necessary to periodically clean the electrodes with an acid solution. The Deposit Control System eliminates the need for such periodic cleaning. TWT can specially design industry-specific systems using our Deposit Control Microprocessors, Reaction Chambers, UltraViolet Disinfection, and IonGuard Purification System to effectively solve any need in residential, commercial and heavy industrial fluid-based applications.

\* Drinking of any pool water, treated or not, is not recommended.

# TRIANGULAR WAVE TECHNOLOGIES IONGUARD IONIZATION AND PURIFICATION SYSTEMS

Treat your algae, bacteria, scaling, deposit, corrosion and oxidation problems with efficient, environmentally-friendly Triangular Wave Technologies Chemical-Free Pool Management Systems. Reduce your chemical treatment and maintenance efforts by 80% or more, and make your swimming experience safe, fun, and environmentally responsible.



TWT-5C8-277  
0.5 AMP control unit (standard application)  
Ionization/Disinfection System for the control  
of Algae/Bacteria.  
\*Designed for pool sizes up to 40,000 gallons

TWT-5C8-278  
1.0 AMP control unit (high volume application)  
Ionization/Disinfection System for the control  
of Algae/Bacteria.  
\*Designed for pool sizes up to 80,000 gallons



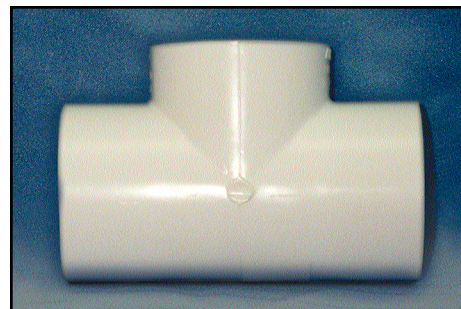
TWT-IDK-0258457  
ID Electrode Installation Kit  
3" Electrode / 2" PVC Tee / 2" Tee-Cap and Conduit  
Normal Conductivity-TDS  
TWT-IDK-0264123  
ID Electrode Installation Kit  
6" Electrode / 3" PVC Tee / 3" T-Cap and Conduit  
Low Conductivity-TDS  
TWT-IDK-026532  
ID Electrode Installation Kit  
6" Electrode / 4" PVC Tee / 4" T-Cap and Conduit



TWT-RE-0255  
3" Replacement Electrodes  
TWT-IRE-0262  
6" Replacement Electrodes



TWT-ID-0257  
2" Tee-Cap and Conduit  
TWT-ID-0263  
3" Tee-Cap and Conduit  
TWT-ID-023634  
4" Tee-Cap and Conduit



TWT-ID-0254  
2" Tee PVC (Schedule 40)  
TWT-ID-0261  
3" Tee PVC (Schedule 40)  
TWT-ID-0265  
4" Tee PVC (Schedule 40)



**Pools & Spa Applications**  
For a complete Pool Management System: IonGuard Purification System for Pools & Spas Microprocessor TWT Deposit Control / TWT-RC Industrial Reaction Chamber / TWT IonGuard Control Unit Electrodes Tee-Housing and Electrode Assembly.  
All components needed for the proper application.

Custom Orders: Multiple units may be used for larger pools. All systems may be customized.