

Triangularwave Patented Chemical-Free Deposit Control Technology

Technologically Advanced Method for Hard Water Conditioning & Treatment

Versatile Deposit Control Products & Systems To Effectively Meet The Needs Of Any Industry and Application - **Chemical-Free**
 • Residential • Commercial • Industrial

Control Scale Deposits / Bacteria / Corrosion / Algae / Colloids In All Fluid Based Systems

Hard Water Problems Solved Easily
 Efficient, Cost Effective & Reliable



TWT, Inc. offers a full range of products & systems designed to address fluid problems wherever fluid flows. TWT has the versatile, efficient, cost-effective methods to solve your fluid management problems end to end.

- Controls scale, bio-film & corrosion
- Enhance operating efficiency & life cycle of equipment
- The only products & systems that pay for themselves
- Review application and installation guidelines of all products and systems to ensure proper use and treatment.

TWT® Patented Deposit Control systems use advanced technology to restore and maintain a clean, corrosion-free delivery system in an environmentally safe and chemical-free manner...
 The result is clean pipes and tubing with no biofilm and reduced bacterial contamination.

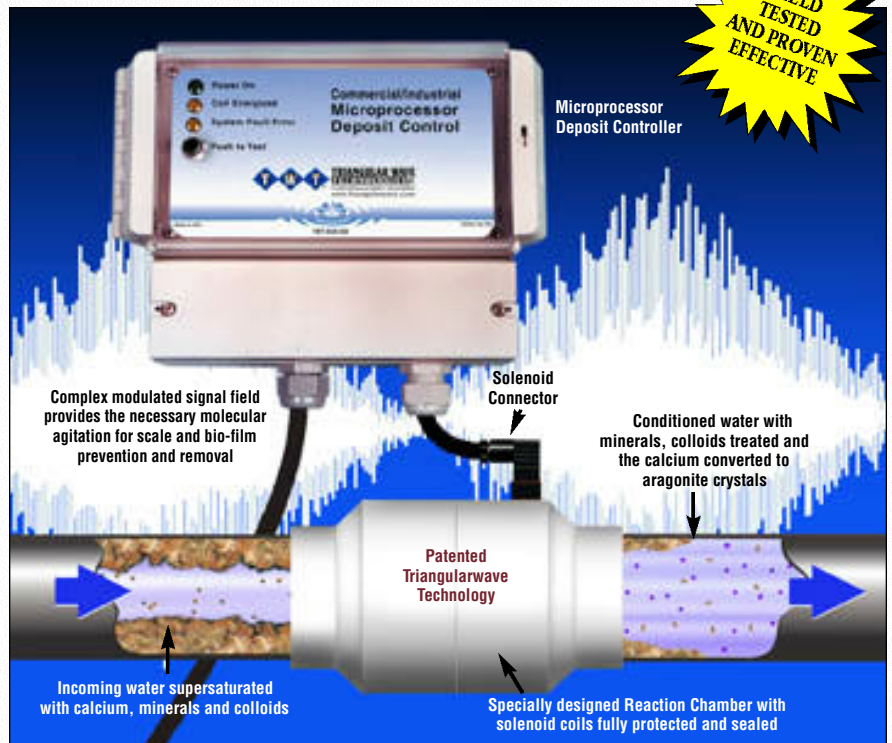


ISO Certified Facility



TWT-5C8-472
 Deposit Controller for Pipes up to 1 inch.
 Voltage: 9 vdc
 Transformer

Residential Deposit Control Unit



Commercial/Industrial Deposit Control Unit

HARD WATER PROBLEMS SOLVED EASILY!

TWT products, Systems and treatment methods, make sense from and operational, economic and safety points of view.

Ownership of the TWT System will afford you and customers significant savings over a short period of time and even greater savings over the life cycle of the equipment.

POTABLE WATER, PROCESS AND WASTE WATER TREATMENT & CONDITIONING

ENHANCE PRODUCT LINE

Enter new markets and broaden customer satisfaction

CUSTOM DESIGN

Let the team at TWT, Inc. custom design a fluid management system to meet your industry specific application requirements.

Triangularwave Technologies, Inc. products and systems provide technologically advanced methods for water and fluid management that are both efficient and cost-effective. Components and subsystems chosen from across the range of treatment methods can be combined in different configurations to provide custom solutions specific

to any industry, site or application. TWT systems work to consistently deliver high quality water, reduce scale and bio-fouling in plumbing systems, and to increase efficiency of both once-through and re-circulating HVAC, process cooling, agriculture, industrial processing, wastewater and other fluid based systems.

TWT® Saves: Chemicals, Water, Energy, Labor, Time and Materials.

Protection for New Equipment

TWT provides new equipment with the ability to enhance the product benefits and features.

Treatment for Existing Equipment

Retrofit existing equipment to improve its operating efficiency and life cycle.

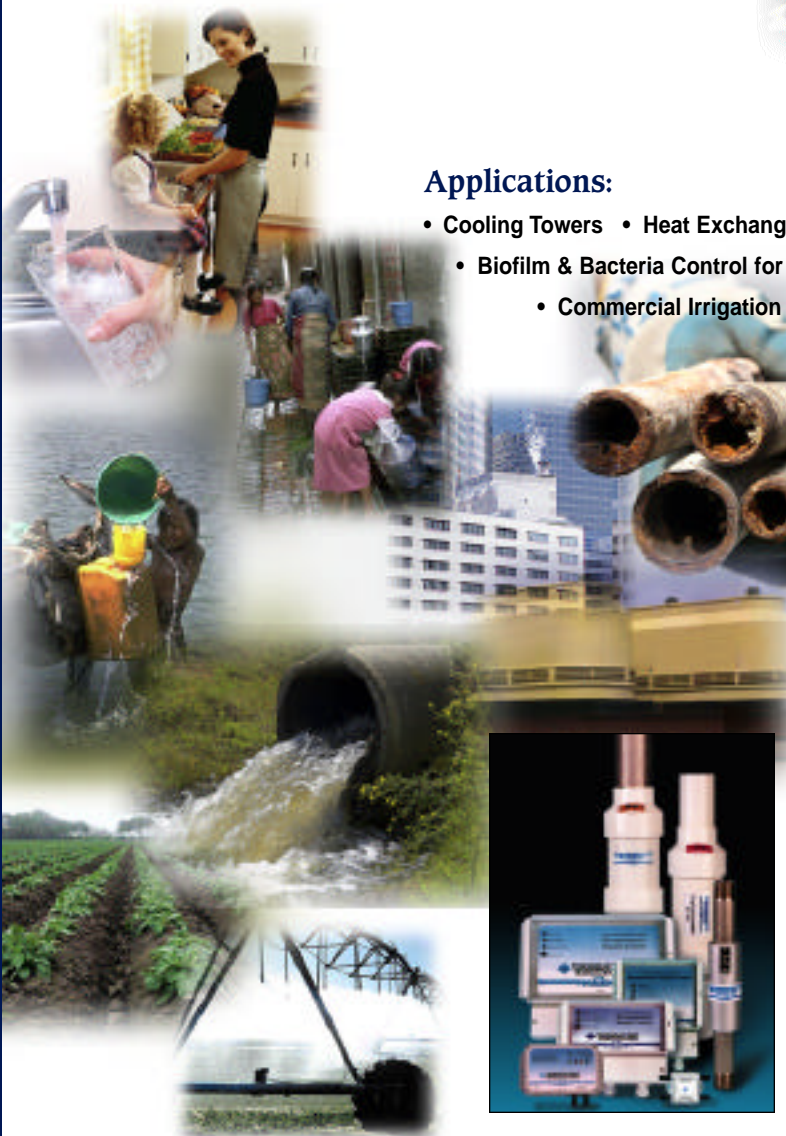
Lifecycle Savings

Savings continue typically for 10 years or more from date of installation. Savings accelerate after the payback period and continue for the life of the system. Lifecycle savings are thus typically many times the cost of the TWT System.



Applications:

- Cooling Towers • Heat Exchangers
- Biofilm & Bacteria Control for Medical/Dental Environments
- Commercial Irrigation • Condensers & Chillers
- Food Processing Equipment
- Manufacturing Processing Equipment
- Boilers/Water Heaters
- Spray Systems
- Private & Commercial Swimming Pools & Spas
- Residential /Office Plumbing
- Coffee & Tea Dispensers
- Bottleless Water Cooler
- Washing Machines
- Humidifiers
- Small Water-Fed Appliances
- Lawn & Sprinkler Systems
- Mobile Homes • Steamers Systems
- Marine Industry / House Boats
- Breweries • Aquariums
- All other Water and Fluid-Based Applications



Product(s) Versatile Application, Installation & Technical Guidelines

P.O.E Point-Of-Entry • Point-Of-Use • Chemical-Free

TWT Deposit Control Technology Guidelines for Fluid-Fed Equipment, Determining Points of Treatment and Optimum Residential, Commercial & Industrial Installation Configurations.

The ability of the Triangularwave Technologies Deposit Control Systems to inhibit scale and biofilm deposits and to remove preexisting deposits is dependent upon the proper application and installation of the products purchased from TWT Inc. **Water chemistry must be taken into consideration.**

We have established that certain configurations are preferred for certain uses, and that if correctly installed in these configurations, the TWT Deposit Control Systems will deliver even greater performance than may have been previously experienced, providing the optimum end-to-end fluid management and treatment solutions available.

Every application has areas called reaction zones. These areas represent locations in a system where the fluid is exposed to different types of changes, that affect its behavior.

Mechanical: change in pressure, velocity, direction, flow pattern (pumps, aerators, agitators, etc.)

Thermodynamic: changes in temperature (heat exchangers, evaporators, boilers, spray nozzles, etc.)

Physiochemical: change in concentration, state (membranes, cooling towers, filters, main/makeup water inlets, etc.)

It is in the **reaction zones** where the particles in the fluid, due to the changes to which they are exposed, are more likely to form scale or biofouling. There are many systems, which, due to their nature, will have multiple reaction zones. In general, it is the reaction zone(s) where the TWT Deposit Control Treatment should be focused. In these cases, pipe size, water conditions and plumbing configurations of the system will play an important role in determining the need for one or multiple sized units. (according to pipe size and material)

Our suggested considerations for optimal installation of the TWT Deposit Control System:

The Deposit Control System will provide the means to keep deposits (calcium, lime, etc.) in solution for extended periods, if not disturbed. The ability of the fluid to retain the deposits in solution is decreased (but not eliminated) by fluid disturbances (e.g., pressure changes) high temperature conditions (flashing, boiling, etc.) and changes in concentration (fluid conditions).

In Automatic Fill Systems, a Fill Solenoid Valve/Float Valve will be used to control the fluid level in the fill system. Where a large pressure change takes place immediately downstream of the valve, TWT recommends that the Reaction Chamber and/or the on-site wrap be located downstream from the solenoid/float valve to avoid this pressure change point.

When water boils and is evaporated, the calcium and other dissolved solids remain and form deposits. These deposits will be softer and more easily removed when treated by the TWT system. In most cases the system self cleaning ability will wash away any potential build up, allowing for a significant reduction in maintenance procedures. If a heating system can be operated without boiling/flashing on the surface of the heating element, a significant reduction in deposits will be obtained.

As the fluid temperature is lowered from boiling, the ability of the TWT treated water to hold the deposits in solution increases. TWT recommends that a reaction chamber and/or onsite wrap be located upstream of (before) any heating system, and where possible downstream (after) the heating system, to further ensure the ability of the fluid to retain the deposits in solution.

When fluid is heavily saturated with deposits (change in concentration/ fluid condition), the ability of the TWT Deposit Control System to treat fluids and hold deposits in solution is decreased but not eliminated. Under these conditions TWT recommends that you upsize (increase the oscillating electrical field) in the Deposit Control System to meet and ensure the highest level of performance for these conditions.

For these and other special requirements and installations, TWT will work directly with you to custom design fluid management solutions and system configurations for your industry-specific needs in an operational and costs effective manner. Examples of custom design for these products include designation of the appropriate deposit control system in the appropriate reaction zones to enhance and guarantee balanced treatment throughout the system, custom reaction chambers to meet size restraints and/or to allow for longer dwell time, as well as upgraded microprocessor design to meet the challenges of unusual circumstances.

Their full treatment benefits are realized, with reduced maintenance requirements.

Consider using TWT deposit control systems in conjunction with any fluid treatment systems as a complementary technology. For further details on how you can leverage the TWT deposit control benefits, please contact us at info@triangularwave.com.

TWT® Technologically Advanced Methods for Water & Fluid Management Potable Water, Process and Waste Water Treatment & Conditioning

- Provides the effects of softened water, neutralizes calcium hardness effects in the water
- Removes and prevents scale buildup
- Uses no salts or other chemicals
- Service and maintenance-free
- Improves efficiency of all water-fed equipment and extends its life cycle
- Quickly pays for itself and continues saving
- Descales the entire plumbing system over time
- Designed for safety—the output is safe to both personnel and equipment. There is no electrical contact with the pipe

TWT chemical-free deposit control (hard water conditioning & treatment) systems enhance other treatment technologies as well, including chemicals, ozone, ultraviolet, separators and other filtration systems, keeping them clean and enhancing their operation. In this way, their full treatment benefits are realized, with reduced maintenance requirements.

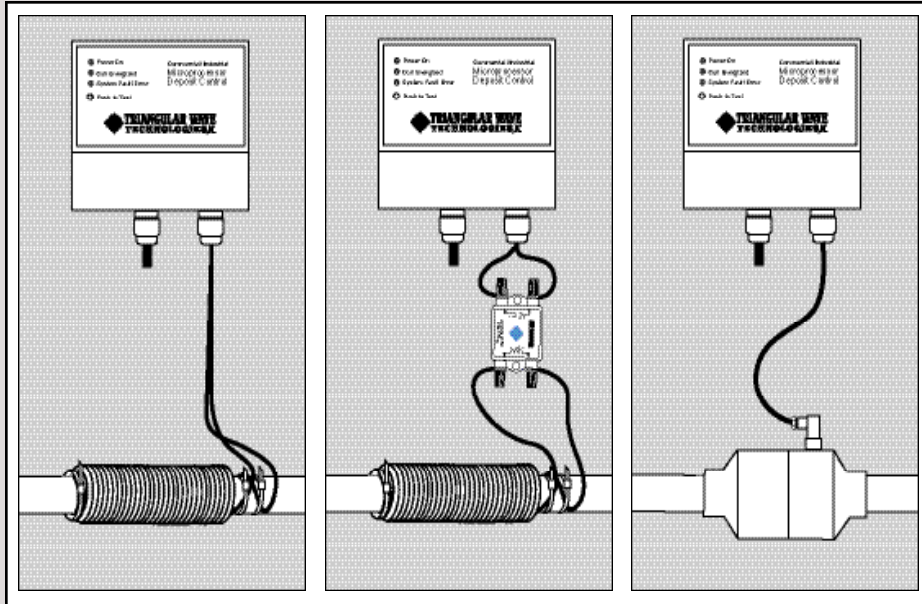
Simply Said... a clean, corrosion-free delivery system is restored and maintained in an environmentally safe and chemical-free manner.

The result is clean pipes and tubing with no biofilm and reduced bacterial contamination.

Sensing Environmental Needs with Intelligent Solutions

Be Smart, Buy Once! Go Green Save Green

For Maximum Effectiveness Follow These Simple Guidelines



TWT-Deposit Control Solenoid Coil Wrap on PVC Pipe Application:

PVC/Plastic pipes require NO copper pipe signal enhancer or reaction chamber

TWT-Deposit Control Solenoid Coil Wrap with a CSE Copper Pipe Signal Enhancer Application:

Copper pipe signal enhancer is required for copper pipe applications only

TWT-Deposit Control with Stainless Steel or PVC Reaction Chamber Application:

Magnetic pipes (steel/iron) require a reaction chamber



TWT® Copper Pipe Signal Enhancer

The copper pipe signal enhancer is a passive signal/ impedance matching circuit. This device provides a power boost to the conditioning signal in copper pipes (for copper pipe applications only).



TWT® Reaction Chambers

To use in conjunction with the TWT Deposit Control Systems when required, Triangularwave Technologies, Inc. has developed a line of factory-wrapped wire Reaction Chambers to address magnetic pipe environments. Typically, wire coil cannot be installed on any magnetic pipe, such as steel, galvanized steel, ductile iron, or cast iron.

The TWT Reaction Chambers solve this problem by providing an easily installed section of non-magnetic pipe to provide the proper pipe material for the Deposit Control System to work as designed. The TWT Reaction Chambers are fully sealed, protecting their layers of factory-wrapped coil. The PVC, Stainless Steel and the Industrial Reaction Chamber systems are designed and manufactured to meet the highest quality specifications.



TWT® System Packaging Contents

- A. TWT Microprocessor Deposit Control Unit
- B. Wire for onsite wiring & solenoid coil hookup
- C. Hardware kit: Screws, wire ties
- D. Controller mounting kit: Mounting brackets & wire ties
- E. System registration card
- F. Owners Manual

Not included, sold separately:

Contact your dealer and/or TWT, Inc. before installation of system if application requires a: TWT Copper Pipe Signal Enhancer TWT factory wrapped Reaction Chamber Teflon coated wire

All TWT® Products And Systems Come With Easy To Follow Care, Maintenance And Operational Manuals. Read All Information Carefully Before Installing The System

All Products & Systems Are Ruggedly Constructed For Exceptional Performance.

The Rugged design Of The products & Systems Ensure That They Will Enjoy A Long And Reliable Life Cycle When properly Cared For.

Have An Industry Specific Fluid Problem?

Have An Industry Specific Tube and/or Pipe Configuration Problem?

In order to ensure the greatest level of performance and satisfaction in your work with the TWT products & systems, we recommend that you contact our engineering staff, who will be pleased to work closely with you to determine the optimal application and installation for your industry specific needs.

We sincerely thank you for your time and interest in our products, and look forward to being a valued part of your operation

