SECTION D

PRODUCT LIST, MARKETING, SALES, DISTRIBUTION & TECHNICAL SUPPORT MATERIALS

Let TWT Help You Make Your Success Our Priority

We pledge to provide you with:

- Unique products and services that directly and reliably address your needs
- The highest level of customer satisfaction before, during and after the sale
- Timely delivery of your order
- More ways to keep your fluid system running right
- More specialized services from one specialized source
- Guaranteed satisfaction

Our teams broad expertise includes...

- Knowledge of industry-specific needs
- Personnel with research and development capabilities and know-how
- Manufacturing and quality control specialists
- Marketing, Sales
- Domestic and international sales specialists

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

Enhance Product Line

Enter new markets and broaden customer satisfaction

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.

All TWT® products, and integrated systems are engineered and manufactured to conform to CSA, CE, UL and efficacy standards. TWT and it's suppliers use listed components and materials as available. Continuous monitoring of the design and manufacturing provides quality assurance of the products, systems and there intended use.

TWT
TRIANGULAR WAVE TECHNOLOGIES
FLUID MANAGEMENT SOLUTIONS
www.Triangularwave.Com

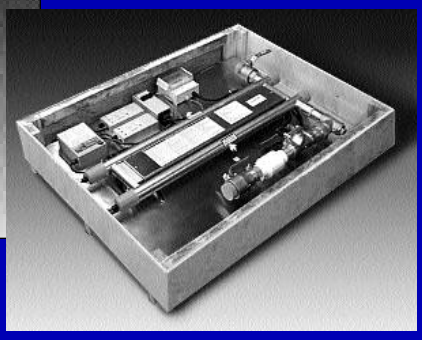
TWT® PRODUCT PACKAGING

All products & systems are:

- Properly packaged, skidded and/or crated to ensure safe delivery
- Shipped complete with all components ready for easy installation*
- Provided with easy to follow installation & application guidelines
- Clearly numbered for easy inventory and stockroom control

Skidded

Crated



Packaged

*Pumps, piping, fittings, valves,and other material needed to and from system owners responsibility

TRIANGULAR WAVE TECHNOLOGIES, INC.
FLUID MANAGEMENT SOLUTIONS
www.Triangularwave.Com

Email:info@triangularwave.com • triwaveinc@aol.com • Visit our web site:www.Triangularwave.com

DO YOU KNOW WHAT'S IN YOUR WATER?*

IS IT COSTLY, DIRTY, SAFE TO USE?

TWT has extensive design, engineering, manufacturing, consulting and training ability to work with customers worldwide, and to use its products and/or systems in whole or component form, as a component assembly, or as an accessory to their primary product. Take advantage of our outstanding manufacturing and marketing expertise — let TWT custom design a product and/or system to meet your specific application, system integration, and/or retro-fit program needs.

Our unique capabilities and custom design expertise have and continue to successfully solve a wide variety of problems for a wide variety of customers (Commercial • Industrial • Residential).

- ***FROM IDEAS TO FINAL PRODUCTION***
- ***EFFICIENT ENGINEERING DESIGN TEAM***
- ***STATE -OF-THE-ART PRODUCTION EQUIPMENT AND FACILITY TO MEET THE EVER CHALLENGING PRODUCTION REQUIREMENTS***
- ***TECHNICAL AND TEST DEPARTMENT WITH OUTSTANDING QUALITY CONTROL GUARANTEED***
- ***COST EFFECTIVE AND DELIVERED ON TIME***
- ***IN ORDER TO ENSURE THE GREATEST LEVEL OF PERFORMANCE AND SATISFACTION IN YOUR WORK WITH TWT PRODUCTS AND SYSTEMS, WE RECOMMEND THAT YOU CONTACT OUR ENGINEERING STAFF, WHO WILL BE PLEASED TO WORK CLOSELY WITH YOU TO DETERMINE THE OPTIMAL INSTALLATION FOR YOUR INDUSTRY SPECIFIC NEEDS.***

REVIEW SOME OF THE FEATURED CUSTOM DESIGN PRODUCTS, SYSTEMS, APPLICATIONS AND INSTALLATIONS FOR SOME OF OUR INDUSTRY SPECIFIC CUSTOMERS WORLDWIDE

See Section A9 For Additional Info

Triangular Wave Technologies, Inc
Installation & Technical Guidelines

D2

Triangular Wave 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. Each product line offers a variety of both standalone and comprehensive treatment solutions for end-to-end fluid management, for all types of applications.The patented Triangular Wave Deposit Control Systems use advanced integrated circuitry and signal processing to create a complex frequency and amplitude modulated wave form. A complex and changing electrical field is induced in the pipe, which increases the solubility of the minerals and changes the shape and size of the calcium carbonate crystals. By this reaction, the crystals lose their adhesive properties, remain in sub-micron suspension, and pass harmlessly through the pipe. Existing scale deposits are taken into solution and also pass through.

Triangular Wave Deposit Control Systems offer all the positive effects of soft water, and clean up existing deposits, without the use of traditional salts and chemicals.

TWT® 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 Deposit Control 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.

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.

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.

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.

Thank You

TWT
TRIANGULAR WAVE TECHNOLOGIES, INC
FLUID MANAGEMENT SOLUTIONS
www.Triangularwave.Com

State-of-the-Art Versatile Fluid Management Systems
To Effectively Meet The Needs Of Any Application

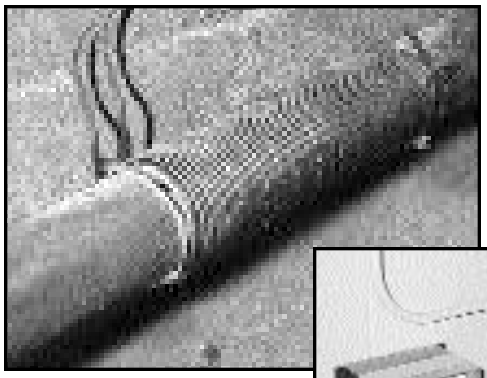
Residential • Commercial • Industrial Treatment

Specializing in:

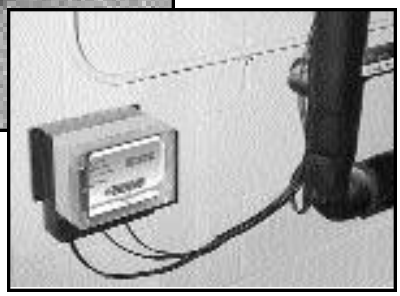
- Chemical-Free Deposit Control Systems
- Eliminating Scale Deposits and Bio-Film in Pipes, Fixtures and Equipment
- Ultraviolet / Ozone / Disinfection & Purification Systems
- Ionization Purification Systems
- Custom Systems Design & Integration
- Water Filtration Products
- Bacterial Reduction Systems
- Economical & Cost Effective
- For All Fluid-Based Industries

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 Coolers • Washing Machines • Humidifiers
- Small Water-Fed Appliances • Lawn & Sprinkler Systems
- Mobile Homes • Marine Industry / House Boats • Steamers Systems
- Breweries • Aquariums • All other Water and Fluid-Based Applications



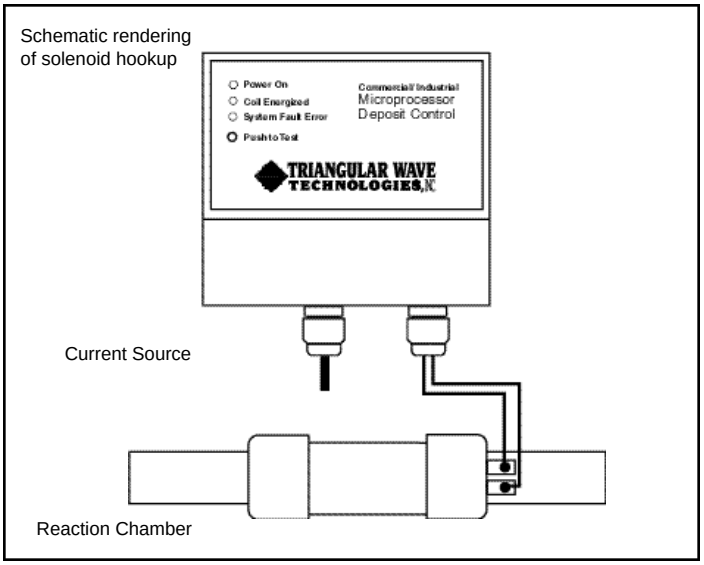
Solenoid wrapped pipe



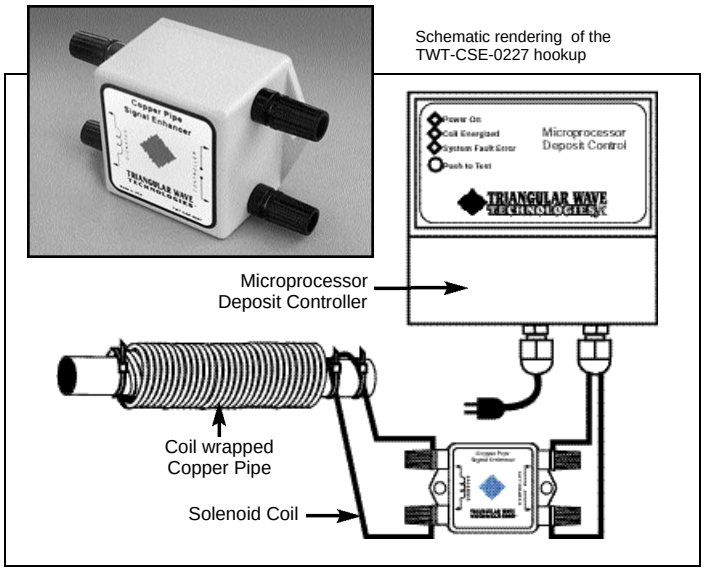
Solenoid wrapped pipe
(Coil hidden by insulation)
with deposit controller

TRIANGULAR WAVE TECHNOLOGIES REACTION CHAMBERS

To use in conjunction with the TWT Deposit Control Systems when required, Triangular Wave Technologies, Inc. has developed a line of factory-wrapped wire coil 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.** If a coil is applied to such a pipe, the pipe becomes a shield and prevents the wave energy from entering the fluid path. 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 two 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.



The TWT Reaction Chamber is part of the patented TWT Deposit Control Technology, the function of which is to control scale and bio-film in the plumbing infrastructure, fixtures, and water-fed appliances found in the facility being treated. The Reaction Chamber provides a chamber through which the water flows and is exposed to the triangular wave signal that lies at the heart of the deposit control technology. As the fluid passes through, it is treated and then carries that treatment downstream, to condition the rest of the plumbing system, non-chemically and reliably.

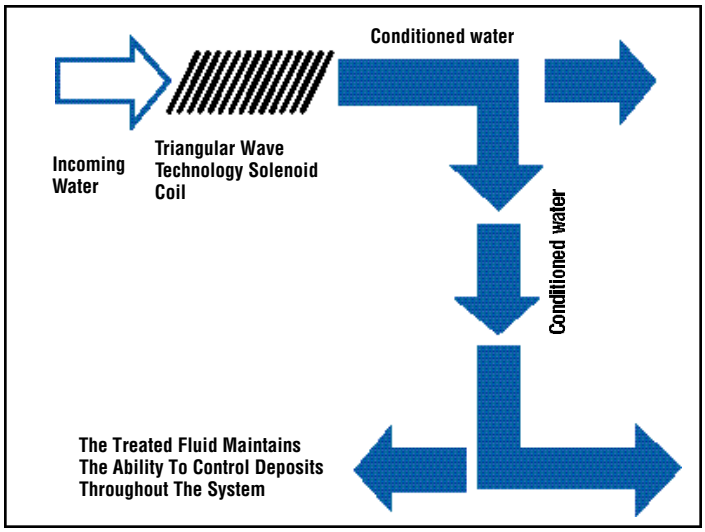


Copper pipes, although acceptable, are one of the more difficult of materials to work with. To overcome this difficulty…

Triangular Wave Technologies has designed its Copper Pipe Signal Enhancer. This unit is placed between the controller and the copper pipe solenoid. The function of the signal enhancer is to provide a proper impedance match and to ensure maximum energy transfer between the controller and the solenoid, which ensures enhanced treatment of the fluid. The Copper Pipe Signal Enhancer must be used in all copper pipe applications to maximize the performance, and provide a boost to your application.

The copper signal enhancer is a passive signal / impedance matching circuit. This device provides a power boost to the conditioning signal in copper pipes.

WHEN TWT SYSTEMS ARE PROPERLY INSTALLED, THE EFFECTS OF THE TRIANGULAR WAVE TREATMENT LAST DOWNSTREAM



In effect, 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.

Water The Way Nature Intended it!

Take these steps before placing your purchase order

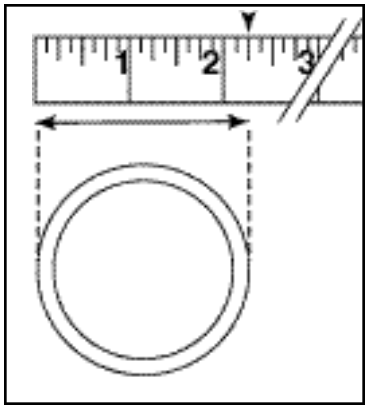
1. **Know the performance capabilities and technical limitations of all TWT® products and systems to guarantee the proper installation application and treatment solutions** (see back page).
2. **Verify the pipes (size) to be treated in your systems, i.e., diameter of pipe (1", 2", 3",etc.) pipe material – copper, PVC, steel, ductile iron, glass, rubber, etc.**

Follow these simple procedures to verify pipe sizes (application) prior to submitting a purchase order.

Conversion chart of field measurements to determine pipe size (same for any material, to nearest 1/4" inch).

Measuring with non-flexible ruler

Outside Pipe Diameter (inches)	TWT Pipe Application (inches)
3/4"	1/2"
1"	3/4"
1 1/4"	1"
1 3/4"	1 1/2"
2 1/2"	2"
3 1/2"	3"
4 1/2"	4"
6 1/2"	6"
8 1/2"	8"
10 3/4"	10"

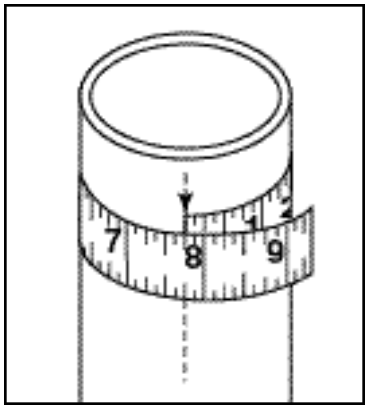


Example:

Outside diameter of pipe measuring 2 1/4" = 2" TWT pipe application

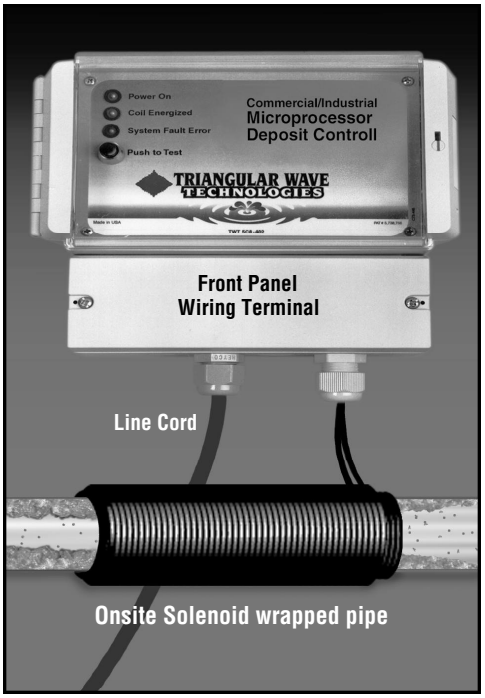
Using tape measure or flexible ruler

Pipe Circumference (inches)	TWT Pipe Application (inches)
2 1/2"	1/2"
3 1/4"	3/4"
4 1/4"	1"
6"	1 1/2"
7 3/4"	2"
11"	3"
14 1/4"	4"
20 3/4"	6"
27"	8"
33 3/4"	10"



Example:

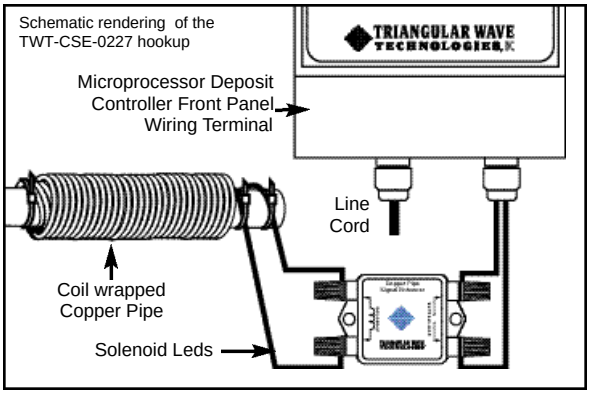
Circumference of pipe measures 7 3/4"= 2" TWT pipe application



The TWT® Deposit Control System will give many years of service if installed properly. Please read all instructions carefully (owners installation manual) before assembling the system.

The unit is provided with a line cord. The cord should remain unplugged until the installation is complete. Mount the unit to a supporting structure using the base mounting flange, and case mounting kit supplied. Install two mounting feet to the top rear of controller case with screws supplied. Place one of the mounting brackets on the top corner over the locating tab on each side of the unit, attach the brackets with screws provided. The two bottom mounting holes are located inside the controller in the terminal hookup area. You need to remove the front panel to locate the mounting holes at the bottom corners of the case. With the brackets in place you have a method to fasten all four corners of the controller to an appropriate surface.

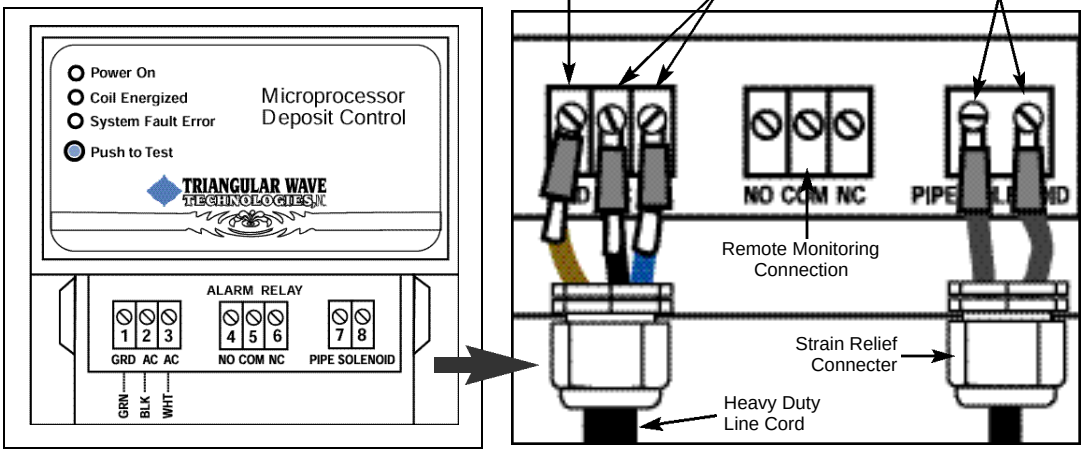
TWT-CSE Copper Pipe Signal Enhancer Application



Copper pipes, although acceptable, are one of the more difficult of materials to work with. To overcome this…TWT has developed its Copper Pipe Signal Enhancer. This unit is placed between the Deposit Controller and the solenoid coil on the copper pipe as illustrated. The function of the signal enhancer is to provide a proper impedance match and to ensure maximum energy transfer between the controller and the solenoid, which, in turn, ensures enhanced treatment of the fluid.

Special Note: Copper pipe signal enhancers are to be used on copper pipes only.

TWT Deposit Controller terminal Hookup



TWT Deposit Control Unit

The controller is supplied with a wiring kit and a strain relief connector for the solenoid coil wires. This strain relief will provide a water resistant seal for the two coil wires. You should rotate the compression ring counter clockwise to release pressure on the seal. Feed the two wires through the provided holes and tighten the compression ring. Connect the two wires to the coil terminals in the controller housing as illustrated (refer to winding instructions in owners installation manual).

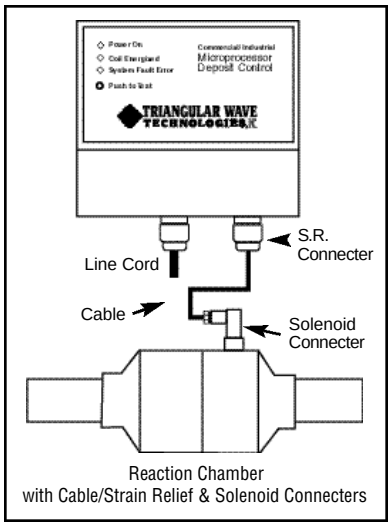
A standard installation will not require access to the main control circuit board, because all connections are available in the wiring terminal. The control circuit is accessed by removing the front panel of the TWT unit.

Factory Wrapped Wire Coil Reaction Chambers Application

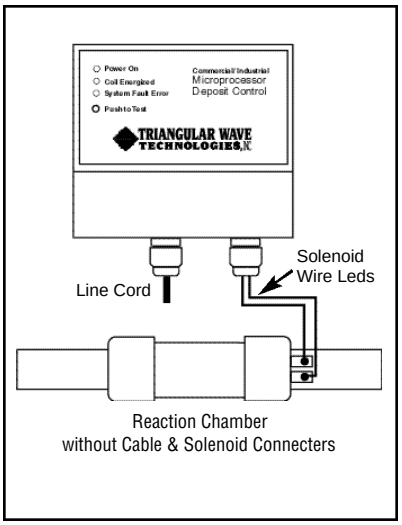
- **To address magnetic pipe applications**
- **When a protected environment (code) is needed**
- **When on-site solenoid wrap is not applicable**

The TWT Reaction Chamber is part of the patented TWT Deposit Control Technology. The Reaction Chamber provides a chamber through which the water flows and is exposed to the triangular wave signal that lies at the heart of the deposit control technology. As the fluid passes through, it is treated and then carries that treatment downstream, to condition the rest of the plumbing system, non-chemically and reliably.

When you have purchased a reaction chamber with cable and connecters with your controller unit, the correct strain relief connecter for the controller is furnished with the cable for the reaction chamber. The strain relief connecter on the controller (pipe solenoid) should be removed and replaced with the strain relief connecter provided with the reaction chamber cable. The two wires should be connected to the coil terminals in the controller housing as illustrated above.

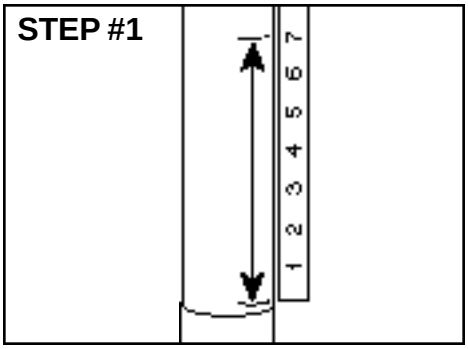


Schematic rendering of industrial reaction chamber hookup

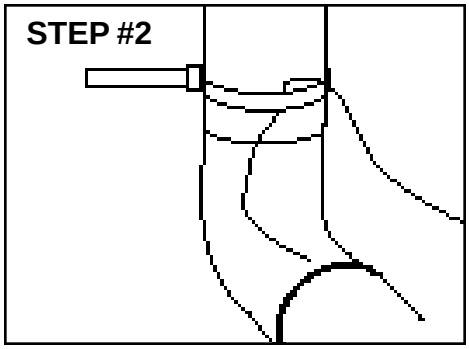


Schematic rendering of reaction chamber hookup using wiring kit provided

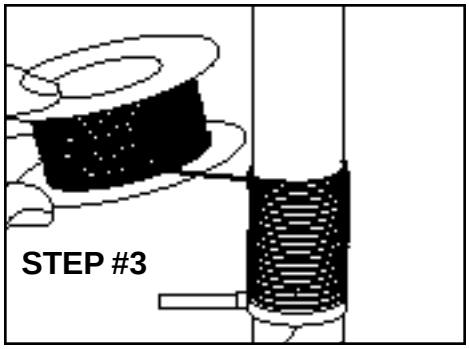
Step by step installation Instructions for onsite solenoid Coil Wrap for Model #TWT-5C8-402



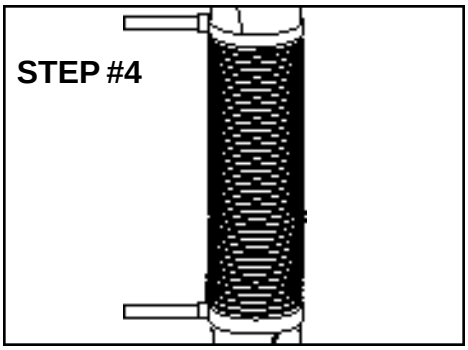
Measure and mark a 7" section in the middle of a straight pipe segment.



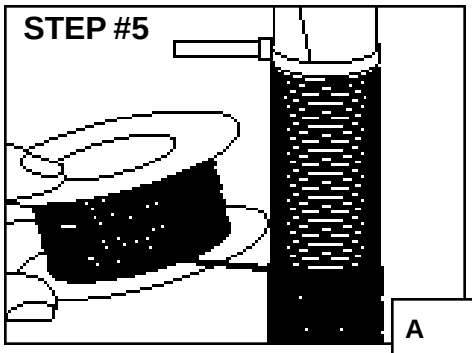
Fasten the signal wire to the pipe with a cable tie (provided) at one end of the 7" section.



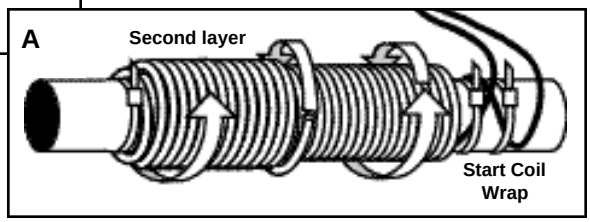
Wrap the signal wire around the pipe in a tight coil, in a clockwise manner, so that the adjacent wires are touching each other.

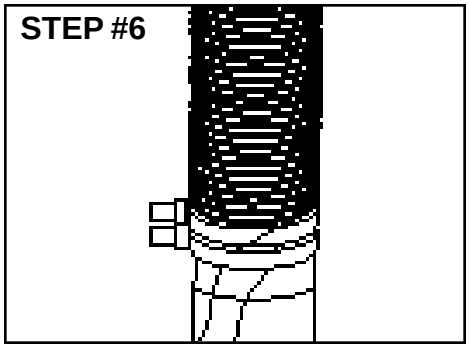


Continue to wrap until the 7" section of pipe is completely covered. Fasten down the end of the coil with the second cable tie (provided). You can hold the first layer in place with cloth tape or electrician's tape.

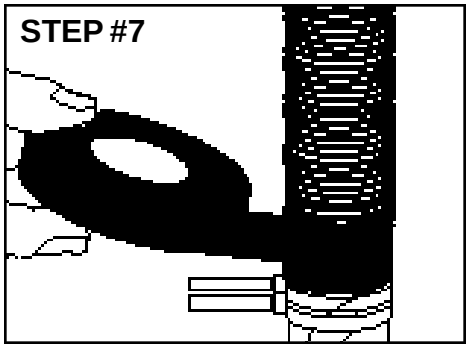


Add a second layer to the coil by continuing to wind in a clockwise manner starting where you completed the first layer and wind ***back in the direction of the starting point. (see Diagram A) Do Not Twist or Cut Wire or the System WILL NOT Function.*** Place the second layer directly on top of the first layer.Be careful to wind the second layer tightly ***in the same clockwise manner*** as the first layer ***back in the direction of the starting point.***

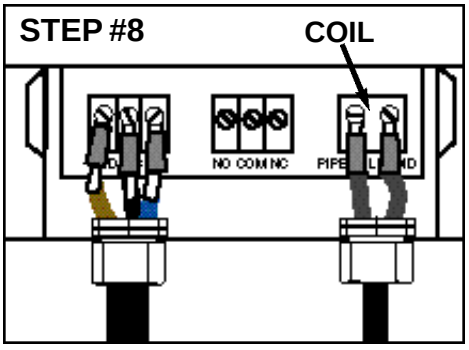




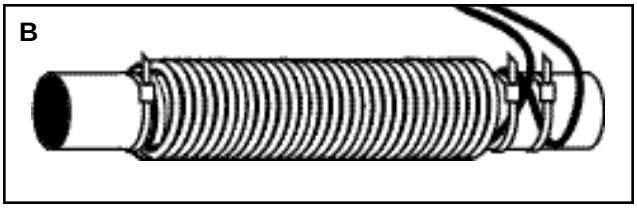
Complete the second layer by clamping the wire with third cable tie (provided). ***(See Diagram B Below)***



Wrap the coil with vinyl industrial tape to help maintain a tight coil and protect the coil from loosening.



Guide both wires to the Triangular Wave Unit and leave about 2" of extra wire.



On site solenoid wrap sizes vary according to pipe material & size.For further instructions regarding the completion of the installation, please refer to your Deposit Control System Owner/Installation Manual.

For high temperature applications of 176˚F and above, request and use teflon wire. Teflon wire solenoid wrap sizes vary according to pipe material and pipe size, refer to the technical guidelines on the TWT website for additional information.

TWT recommends that installers should use vinyl self-sealing industrial electrical tape for maximum protection and support of the solenoid coil wrap.

Deposit Controller	Pipe Size	Wrap Length Along Pipe	Wire Kit	Solenoid
TWT-5C8-470	**.5 inch**	4 inch wrap	75 ft.	The solenoid is wound in two overlapping layers, approx.60 turns per layer
TWT-5C8-472	**.75 / 1 inch**	4 inch wrap	75 ft.	The solenoid is wound in two overlapping layers, approx.60 turns per layer
TWT-5C8-473	**1 inch**	4 inch wrap	75 ft.	The solenoid is wound in two overlapping layers, approx.60 turns per layer
TWT-5C8-401	**1 1/2 inch**	4 inch wrap	100 ft.	The solenoid is wound in two overlapping layers, approx.60 turns per layer
TWT-5C8-402	**2 inch**	7 inch wrap	150 ft.	The solenoid is wound in two overlapping layers, approx.90 turns per layer
TWT-5C8-403	**3 inch**	7 inch wrap	200 ft.	The solenoid is wound in two overlapping layers, approx.90 turns per layer
TWT-5C8-404	**4 inch**	7 inch wrap	225 ft.	The solenoid is wound in two overlapping layers, approx.90 turns per layer
TWT-5C8-406	**6 inch**	4.5 inch wrap	275 ft.	The solenoid is wound in two overlapping layers, approx. 65 turns per layer
TWT-5C8-408*	**8 inch**	*	*	*TWT-5C8-408 and above contact TWT directly for solenoid winding instructions

Please see the installation manual for instructions to correctly wind the coil.

Coil Kit provided will contain UL 1007 #20 awg wire with the assumption that the Controller will be located within 10 to 15 ft. of solenoid.
All installations may splice additional wire to remotely locate the Controller up to 100 ft. away from the solenoid coil. Refer to Owner's/Installation Manual for further information.

Note: When upgrading controller for extreme hard water conditions (TDS), the on-site wrap coil dimensions must continue to match the actual pipe size, not the controller upgrade.

High Temperature Applications for Triangular Wave Technologies™ Deposit Control Systems 176° F and Above (Teflon Wire)

TWT-5C8-470	**.5 inch**	3.5 inch wrap	55 ft.	The solenoid is wound in two overlapping layers, approx.60 turns per layer
TWT-5C8-472	**.75 / 1 inch**	3.5 inch wrap	55 ft.	The solenoid is wound in two overlapping layers, approx.60 turns per layer
TWT-5C8-473	**1 inch**	3.5 inch wrap	55 ft.	The solenoid is wound in two overlapping layers, approx.60 turns per layer
TWT-5C8-401	**1 1/2 inch**	4 inch wrap	75 ft.	The solenoid is wound in two overlapping layers, approx.60 turns per layer
TWT-5C8-402	**2 inch**	5 inch wrap	125 ft.	The solenoid is wound in two overlapping layers, approx.90 turns per layer
TWT-5C8-403	**3 inch**	5 inch wrap	175 ft.	The solenoid is wound in two overlapping layers, approx.90 turns per layer
TWT-5C8-404	**4 inch**	5 inch wrap	200 ft.	The solenoid is wound in two overlapping layers, approx.90 turns per layer
TWT-5C8-406	**6 inch**	3.75 inch wrap	250 ft.	The solenoid is wound in two overlapping layers, approx.65 turns per layer
TWT-5C8-408*	**8 inch**	*	*	*TWT-5C8-408 and above contact TWT directly for solenoid winding instructions

In applications where the pipe surface temperature is 180º F and above, you should request a Teflon Wire Kit. We will provide a spool of Teflon Insulated Wire to form the pipe solenoid at our factory cost. The wire ties supplied with the unit are satisfactory for use with the Teflon Wire.

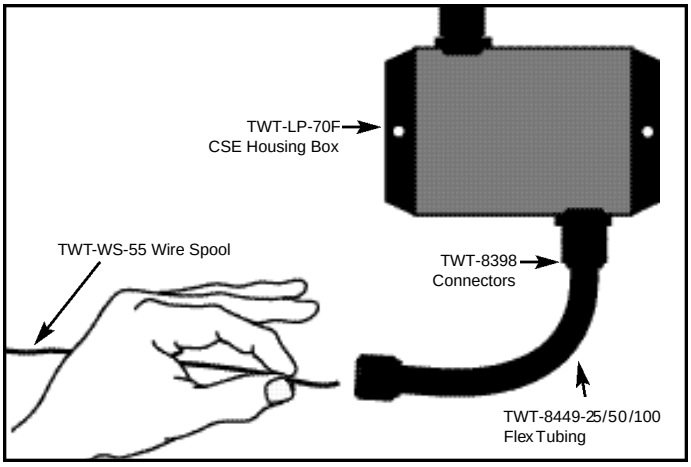
Please see the installation manual for instructions to correctly wind the coil. The Teflon Wire will be slightly smaller in diameter and the solenoids should be formed as described above:

The wire used to form the pipe solenoid provided with enclosed Microprocessor is: UL1007 #20awg.

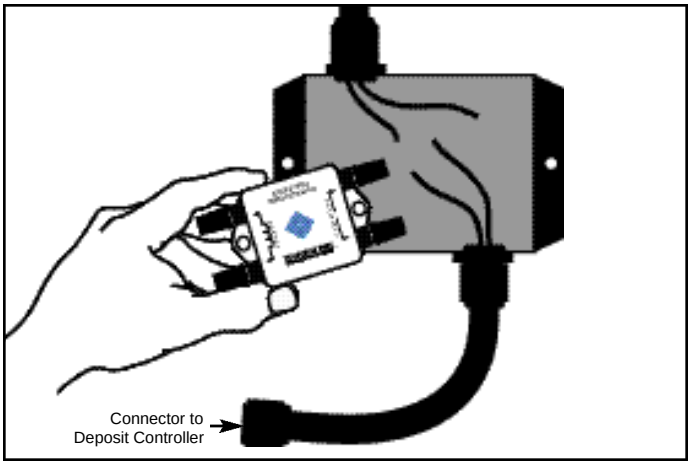
Teflon Insulated Wire Kit is provided at factory upon request. The wire ties supplied with the unit are satisfactory for use with the Teflon Wire.

For further information about custom installations for 10", 12",14" and larger pipe sizes,please contact Triangular Wave Technologies,Inc.

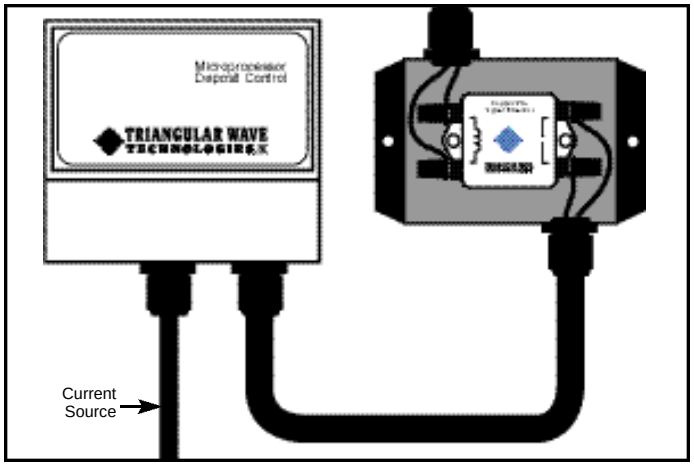
On Site Professional Installation Assembly When Using Copper Signal Enhancer (for Copper Pipes Only)



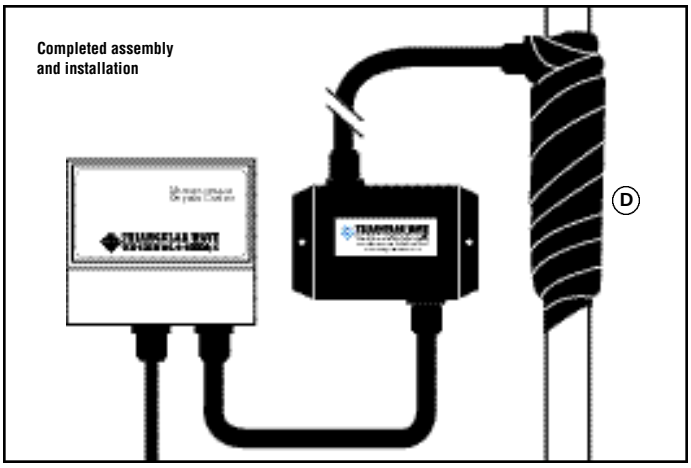
Insert wire through black flex tubing and into mounted CSE housing box, leave enough wire for CSE Unit connection

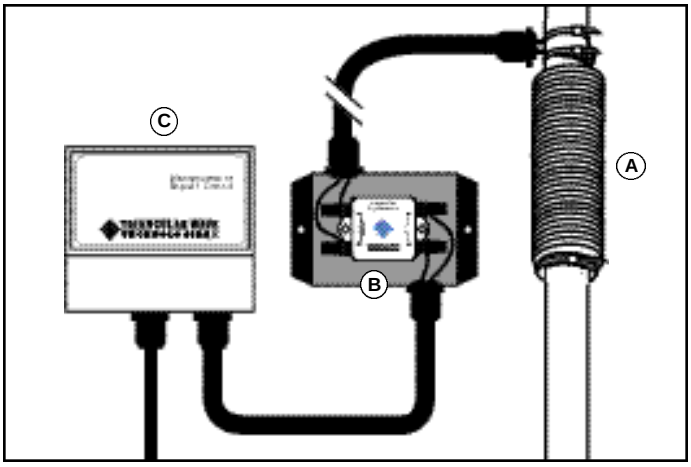


Secure CSE Unit to housing and connect wires to unit



Copper pipe signal enhancer correctly wired and installed





Completed System Installation Must Reflect:

A. Solenoid coil correctly field wrapped

B. CSE (copper pipe signal enhancer) securely mounted in CSE Housing

C. Visual placement for deposit controller suitable for periodic visual inspection of LED'S

D. Solenoid coils should be covered with vinyl self-sealing industrial electrical tape to protect the coil from loosening *(see illustration on left)*

All wires must be securely fastened and/or taped to connections

All associated wiring/conduit/line cords must be fastened with plastic wire ties and out of harms way

CSE housing unit should be installed not more than 10 feet from onsite solenoid wrap installation for best results

For high temperature applications of 176˚F and above, request and use teflon wire. Teflon wire solenoid wrap sizes vary according to pipe material and pipe size, refer to the technical guidelines on the TWT website for additional information.

Accessories: ***Note: Complete factory packaged CSE kits available upon request***

Flex Tubing:

TWT-8449-25 – 25 ft. • TWT-8449-50 – 50 ft. • TWT-8449-100– 100 ft.

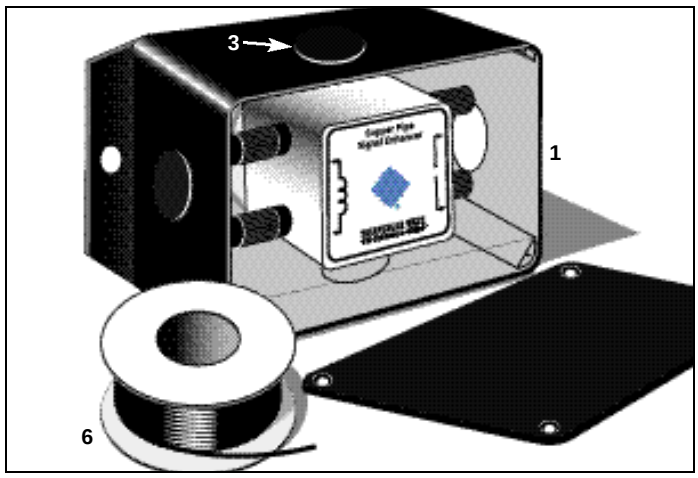
CSE Black Housing Box: TWT-LP-70F
(To mount and enclose CSE Unit)

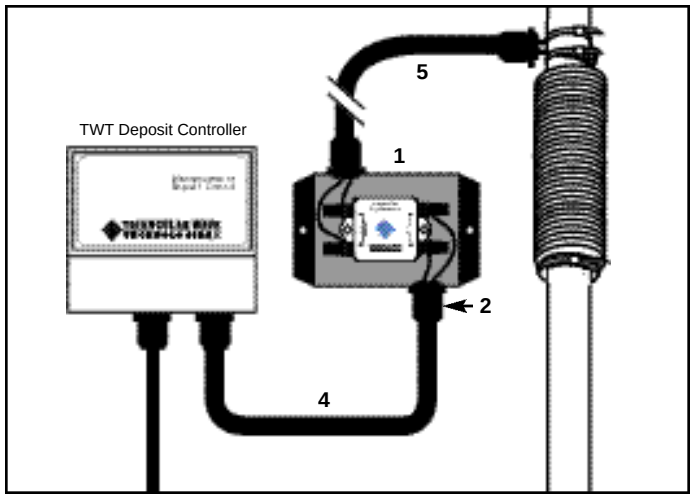
Connectors: TWT-8398
(For Flex Tubing and CSE Black Box)

Copper Signal Enhancer Installation:
Conduit, CSE housing box plus 2 sets of connectors required for each CSE unit installed

On Site Professional Installation Assembly When Using Copper Signal Enhancer *(for Copper Pipes Only)*

Schematic renderings for illustrative purposes only





ITEM #	KIT DESCRIPTION & COMPONENTS
TWT-CSE-0227K	***For installation of copper pipes up to 2" only***

1- 1 CSE black housing box with pre-mounted CSE unit, and 4 pre-drilled 1/2" holes for easy assembly and installation. CSE kit may be mounted vertically or horizontally. Box dimensions: 5.5"W x 4.25"H x 1.75"D

2- 4 connectors for CSE housing box, controller and solenoid connections

3- 2 plastic hole plugs (cover remining holes)

4- 1-15' length of flex tubing for housing box to deposit controller connection

5- 1-10' length for hosing box to onsite solenoid connection

6- One 55' extra wire spool

ITEM #	KIT DESCRIPTION & COMPONENTS
TWT-CSE-0229K	***For installation of copper pipes up to 4" only***

1- 1 CSE black housing box with pre-mounted CSE unit, and 4 pre-drilled 1/2" holes for easy assembly and installation. CSE kit may be mounted vertically or horizontally. Box dimensions: 6.1"W x 4.6"H x 2.4"D

2- 4 connectors for CSE housing box, controller and solenoid connections

3- 2 plastic hole plugs (cover remining holes)

4- 1-15' length of flex tubing for housing box to deposit controller connection

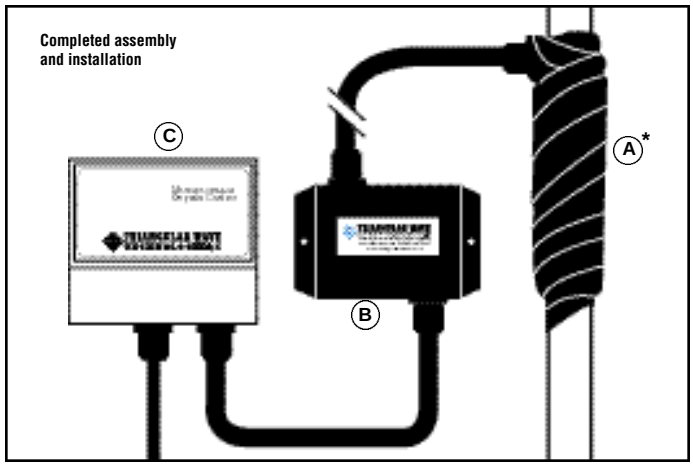
5- 1-10' length for hosing box to onsite solenoid connection

6- One 55' extra wire spool

Kits for larger copper pipe diameters available upon request

#18/20 awg wire for onsite solenoid installation packaged and shipped with all TWT deposit controllers

For high temperature applications of 176˚F and above request from your distributor or TWT teflon wire.



Completed System Installation Must Reflect:

A. Solenoid coil correctly field wrapped

B. CSE (copper pipe signal enhancer) securely mounted inside CSE Housing

C. Visual placement of deposit controller suitable for periodic visual inspection of LED's

All wires must be securely fastened and/or taped to connections

All associated wiring/conduit/line cords must be fastened with plastic wire ties and out of harms way

CSE housing unit should be installed not more than 10 feet from onsite solenoid wrap installation for best results

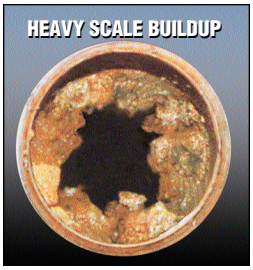
**** Solenoid coils should be covered with vinyl self-sealing industrial electrical tape to protect the coil from loosening (see illustration on left)***

For high temperature applications of 176˚F and above, request from your distributor or TWT teflon wire. Teflon wire solenoid wrap sizes vary according to pipe material and pipe size, refer to the technical guidelines on the TWT website for additional information.

MADE IN U.S.A.

TRIANGULAR WAVE TECHNOLOGIES, INC.
FLUID MANAGEMENT SOLUTIONS
www.Triangularwave.Com

TWT is the world's leading manufacturer and supplier of chemical- free fluid management products based on its patented TWT triangular waveform technology. TWT's chemical-free fluid treatment and management methods have been accepted for use around the world by governments, industry, and individuals, who all enjoy the increased safety, extended equipment life cycle, and decreased operating costs that the TWT systems deliver.



To understand how to solve water-related problems, it is necessary to understand what causes these problems. Although water is basically H_20 (a simple combination of hydrogen and oxygen), by its nature it is highly receptive to many other substances that complicate and contaminate this simple mixture.

Encrusted Tube Bundles

THERE ARE THREE BASIC CAUSES OF WATER/FLUID RELATED PROBLEMS

Scale

Problems:
- *Loss of heat transfer efficiency*
- *Flow restriction in pipes and frozen valves*
- *Back pressure increases energy needed to pump*
- *Reduced reaction vessel capacity*
- *Localized corrosion*
- *Visible surface scale objectionable*

Adverse Water Chemistry

Problem:
- *General corrosion*

Biofilm

Problems:
- *Loss of heat transfer efficiency*
- *Biocorrosion (both general and local)*
- *Sludge*
- *Disease and odors*
- *Bacteria, Algae, Fungus, etc.*

The End Results of Water Problems

- *Wasted water*
- *Ruined equipment*
- *High energy costs*
- *Productivity losses*
- *Product contamination or quality problems*
- *Disease and odor in the water environment*

Materials That Deposit on Equipment and Cause Water/Fluid Problems

Materials may be animal, vegetable, mineral, or corrosive water chemistry. The sources of the materials include: pollution; wind borne dirt, bacteria, and algae; chemical additives; and process components themselves. Some of the materials can grow; such as bacteria, algae, fungus, etc.

Treatment

Scale, Adverse Water Chemistry & Biofilm Can Cost You Money!

Untreated fluid used in boilers, hot water systems, cooling towers and other fluid related equipment contains dissolved salts, gases and traces of many minerals and metals. These elements are the direct cause of scale buildup in pipes and equipment. If left untreated, scale buildup can increase fuel costs, repair and ongoing cleaning costs, downtime and may eventually result in significant equipment replacement.

The bottom line is that if the problem-causing materials are controlled, then 85% to 90% of the problems are eliminated. Treatment options include removal and control.

- ***Removal involves physical or chemical cleaning, filtration, ion exchange, softening, demineralization, reverse osmosis.***
- ***Control involves adding chemicals or ozone, or electro-magnetically conditioning the water.***
- ***Triangular Wave Technologies, Inc. Versatile Fluid Management Products & Systems Are The Solution!***

TWT Deposit Control Installation for Fluid-Fed Equipment - Determining Points of Treatment and Optimum Treatment Configurations for Commercial and Industrial Facilities and Systems

A complete TWT treatment system may use all or only some of the components of a comprehensive water treatment plan, including deposit control, filtration, purification, and disinfection. This configuration guide deals with factors to consider when selecting TWT **deposit control** models for use in a commercial or industrial environment.

Site conditions may indicate that a combination of deposit control products of varying sizes and models is most appropriate for an optimal installation. Among the factors to consider are water chemistry (hardness/grain count) process, "reaction zones", and pipe layout.

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 best end-to-end fluid management and treatment solutions available.

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

Continued ➤

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 patter (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, the size and conditions of the system will play an important role in determining the need for one or multiple units, likely of varying sizes/models. (based on 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 valve to avoid this pressure change point.When water boils and/or is evaporated, the calcium and other dissolved solids remain and form deposits. As a result of the TWT fluid conditioning, these deposits will be softer and more easily removed when treated by the TWT deposit control system. In most cases the heating system process and 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 (TDS, grain count, 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.The ability of the TWT Deposit Control Treatment System effectiveness decreases proportionately with the increase in TDS. i.e., grain count, change in concentrations, evaporation and/or other fluid exposures as referred in the above “reaction Zones” .

That is why a TWT representative must examine the water (fluid) to be treated and all of the obvious influences surrounding it to ensure proper installation & application. ***Under these conditions TWT recommends that you upsize (increase the oscillating electrical field) 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.

In order to ensure the greatest level of performance and satisfaction in your work with the TWT Deposit Control Systems and our other fluid management products, we recommend that you use the systems analysis worksheets (provided on CD) and contact our engineering staff, who will be pleased to work closely with you to determine the optimal installation for your needs and provide the best range of fluid management solutions.

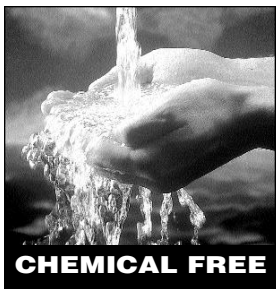
TWT products make sense from operational, economic, and safety points of view. Ownership of the TWT System will afford you and your customers significant savings over a short period of time and even greater savings over the life cycle of the equipment.

NOTE:

Triangular Wave Technologies Patented Deposit Control Systems enhance the life cycle and operating efficiency of all filtration, disinfection, and purification systems.

Properly installed, 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.

Thank you
Triangular Wave Technologies, Inc.



Visit Triangular Wave Technologies, Inc.’s comprehensive website, the valuable technical resource for all involved in water and fluid management...

WWW.TRIANGULARWAVE.COM

Versatile Fluid Management Systems To Effectively Meet The Needs Of Any Application

Upgrade Deposit Controllers if extreme hard water conditions exist

Unique, Scalable Systems For Every Need

TWT Deposit Control Systems can be deployed in different modular configurations, scaling to fit your specific needs.

Configuring for extreme hard water conditions (TDS)

Example:

An industrial plant with 2" piping and a moderate to high Total Dissolved Solids (TDS) level could be treated with the expected TWT 402 (2") Deposit Controller and the appropriate 2" Reaction Chamber, Copper Pipe Signal Enhancer or on-site solenoid wrap.

If that site, however, had a very high TDS level, the 2" pipe would best be treated by a 3", 4", or even 6" TWT Deposit Controller combined with the appropriate 2" Reaction Chamber, Copper Pipe Signal Enhancer or on-site solenoid wrap, depending upon the severity of the TDS level. In other words, for unusual situations, application of TWT products can be scaled up to meet those needs.

Note: When upgrading controller, the on-site wrap coil dimensions must continue to match the actual pipe size, not the controller upgrade.

For Recirculating Systems:

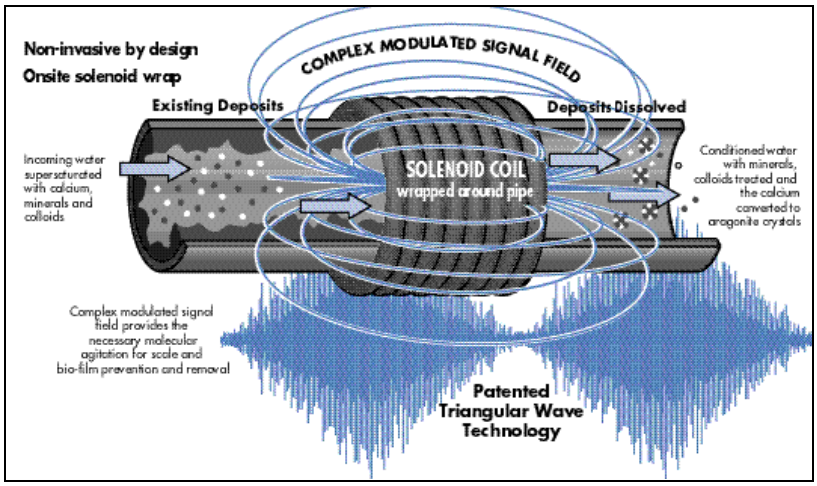
Guide to Choosing Your Products by Volume of Water

The proper use of a TWT Deposit Control System will generally allow standard water system operation at concentration ratios of between 6 and 8, conserving a great deal of water and energy. Average untreated systems typically run at concentration ratios of 3 to 4.

The chart below is provided as a guide and approximation only - the choice of products to be used at any given site will depend upon the water quality and other specifics of that site

Assuming a Concentration Ration of 6 to 8:

A 2" TWT Deposit Control System can generally treat a recirculating volume of water up to 6,000 gallons.
A 4" TWT Deposit Control System can generally treat a recirculating volume of water up to 19,000 gallons.
A 6" TWT Deposit Control System can generally treat a recirculating volume of water up to 43,000 gallons.
An 8" TWT Deposit Control System can generally treat a recirculating volume of water up to 77,000 gallons.

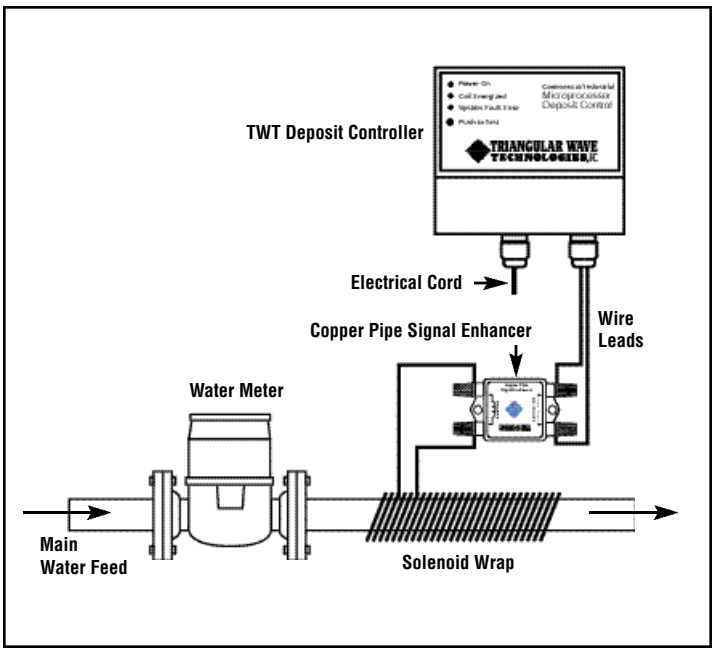


Using modern integrated circuitry and signal processing techniques, the patented TWT Deposit Control Technology works by producing a complex frequency-modulated waveform. This creates a deionizing effect, induced by physical means, which increases the solubility of the minerals, and colloids in the liquid and changes the shape, size and texture of the calcium carbonate crystals.

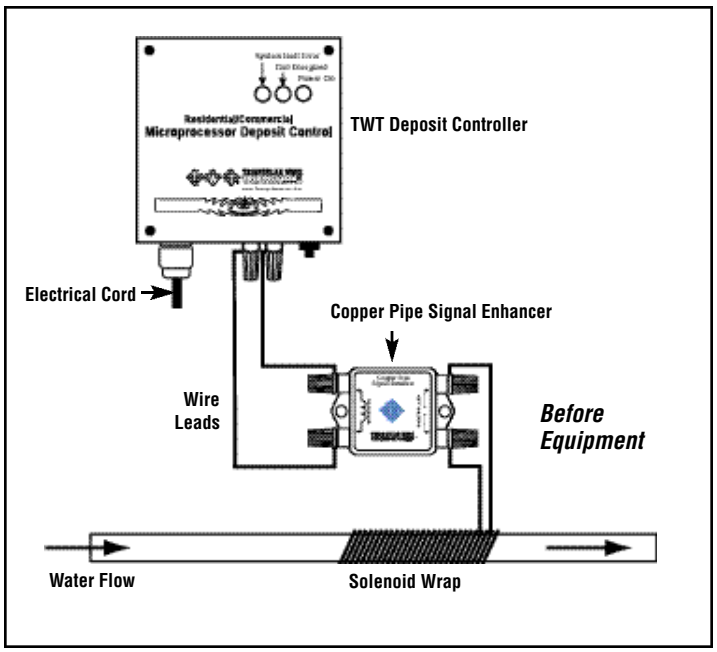
By this reaction, the minerals, colloids and crystals lose their adhesive properties and remain in suspension in the liquid. Pre-existing scale is taken back into solution and removed in the same way. The effects are immediate and long lasting down stream.

Email:info@triangularwave.com • triwaveinc@aol.com • Visit our web site:www.Triangularwave.com

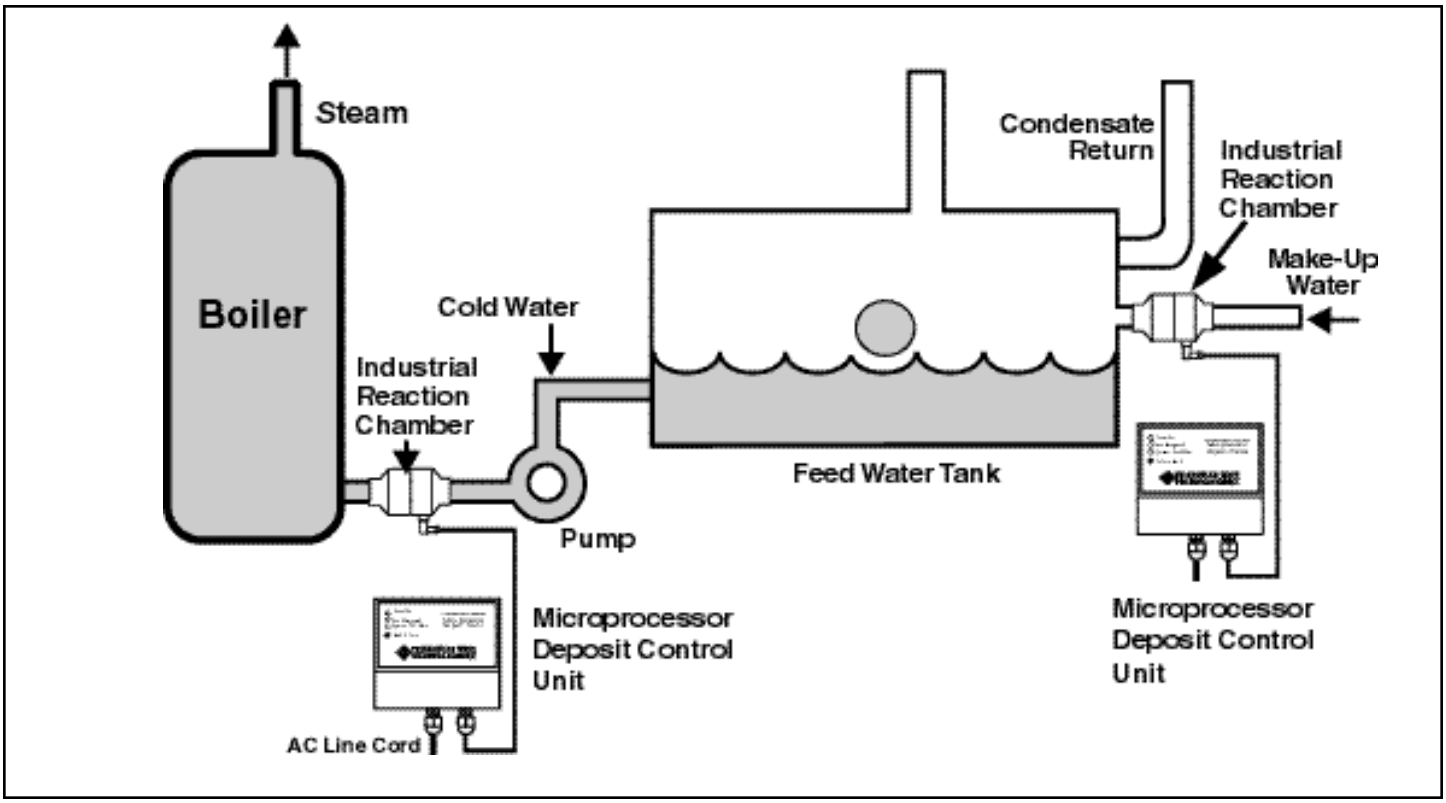
Main Water Feed Line (after water meter) to Facility
Well Water Application (after pressure tank) to Facility

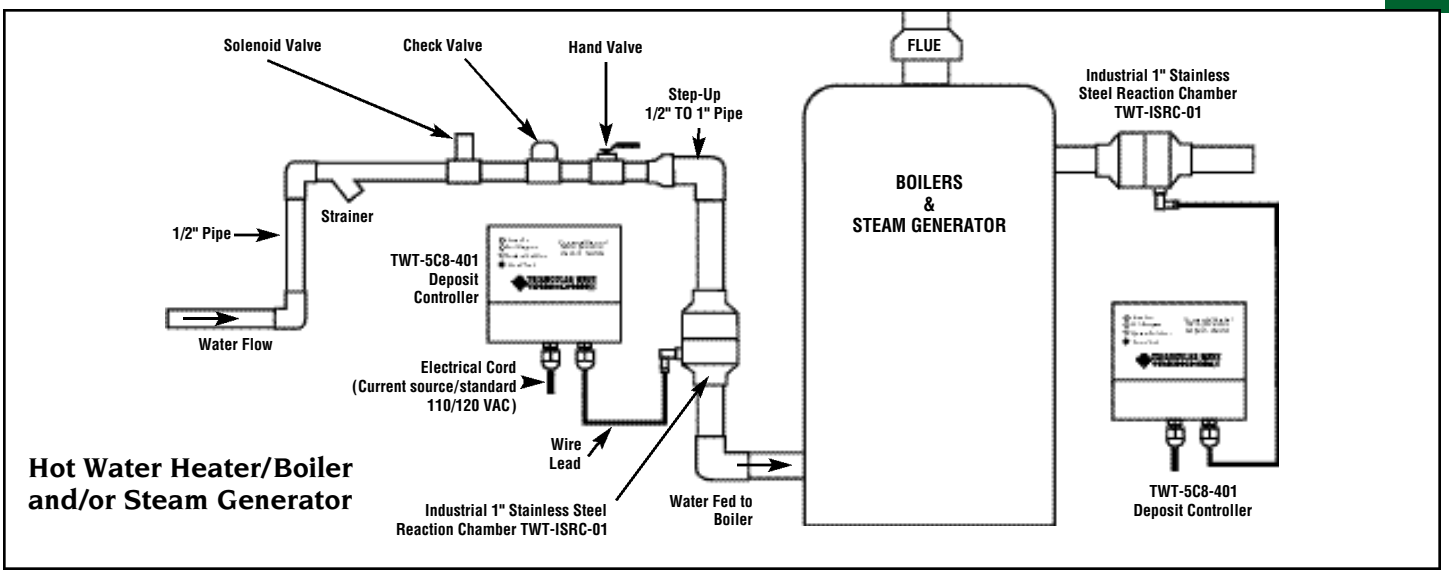


Ice Machine, Misters, Steamers and other Water Fed-Appliances in Facility

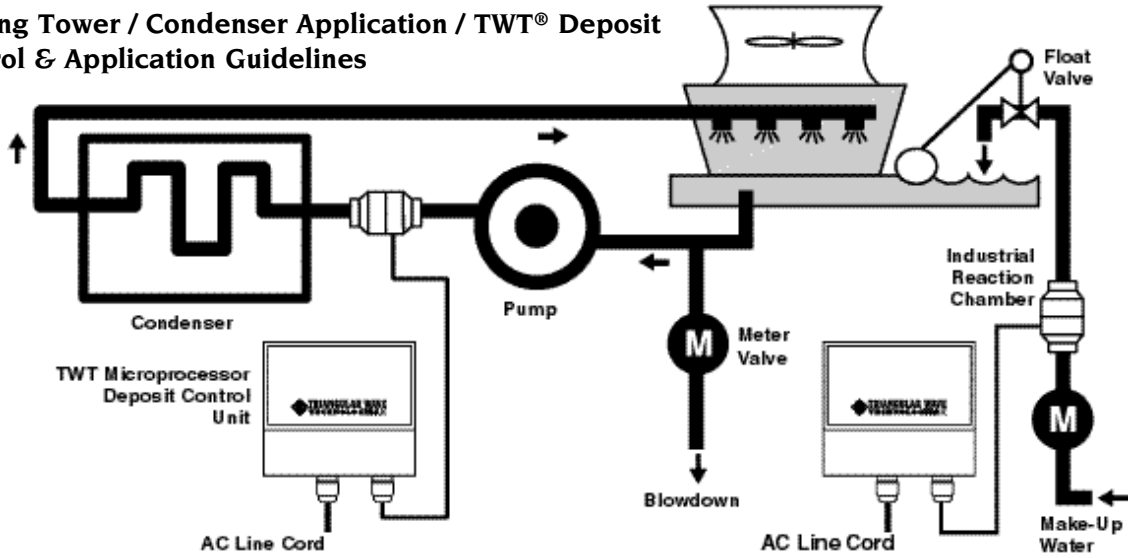


Boiler Application / Installation

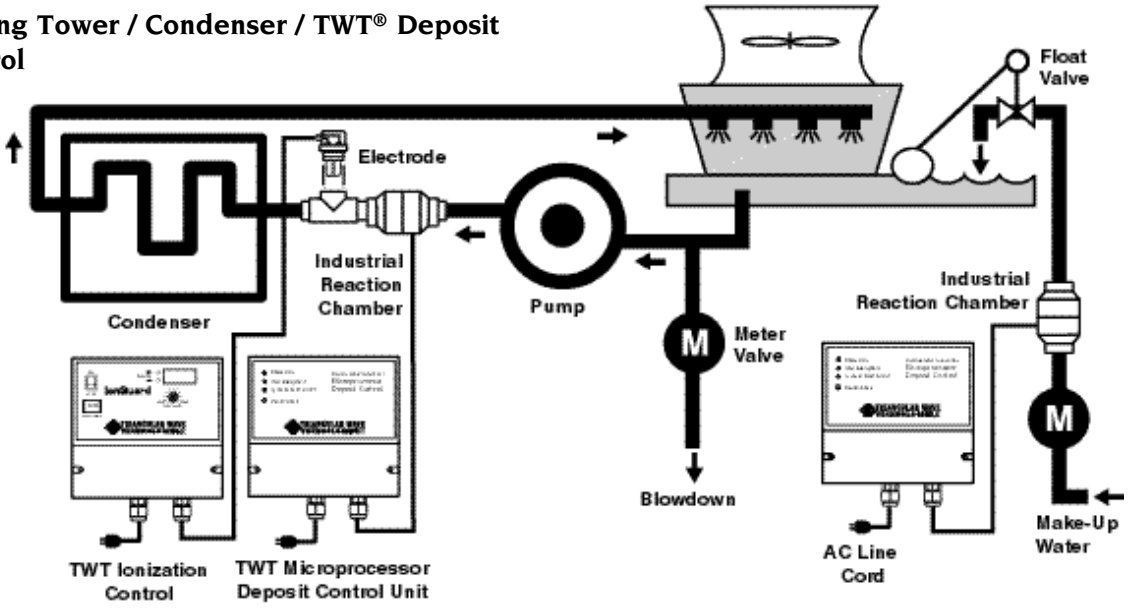




Cooling Tower / Condenser Application / TWT® Deposit Control & Application Guidelines

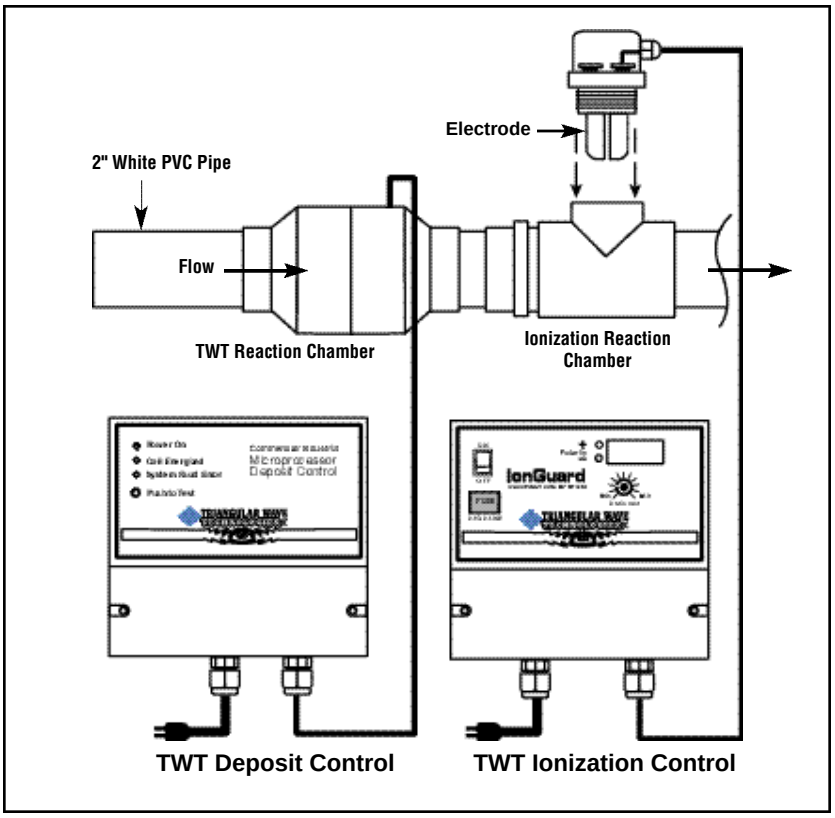


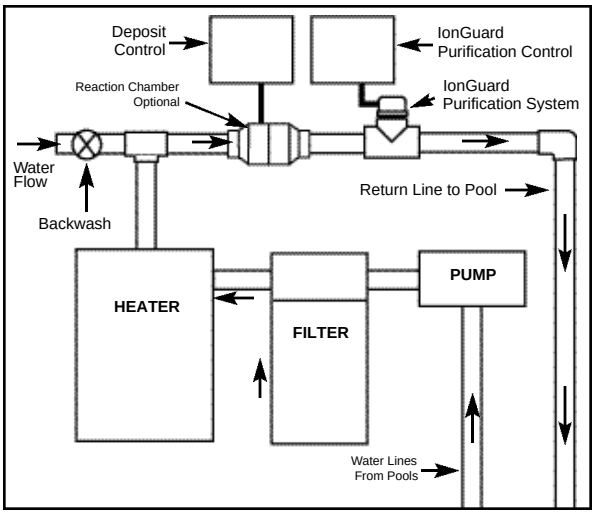
Cooling Tower / Condenser / TWT® Deposit Control



For **Algae and Bacteria** problems use TWT Deposit Controller & Ionization Purification System as illustrated above

Swimming Pool And Spa





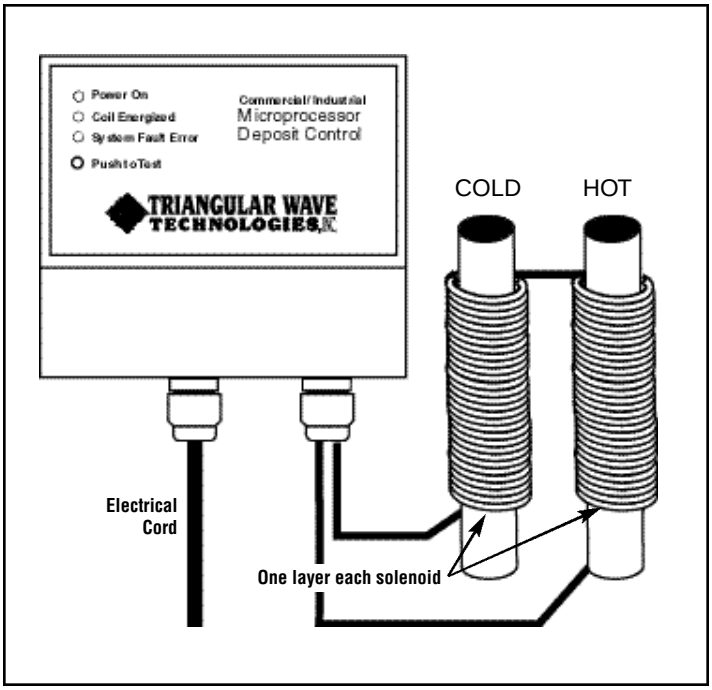
Typical installation overview of equipment room

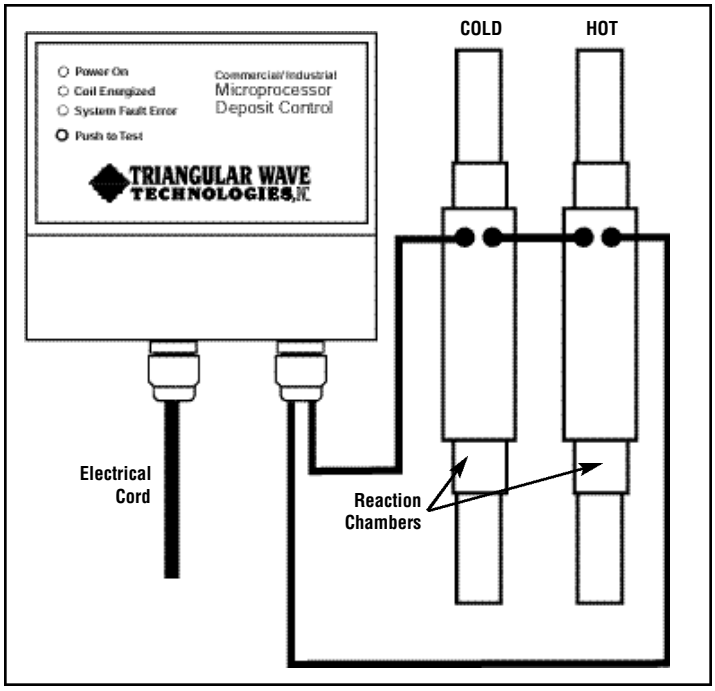
TWT Microprocessor Deposit Controllers, Copper Pipe Signal Enhancers and/or Reaction Chambers are combined to provide a start-to-finish answer to simplified treatment and management. TWT systems are scalable to your industry-specific needs

Contact TWT Inc. to determine your industries specific application

Alternate Application

Alternate acceptable applications for systems with good water quality (low grain count)



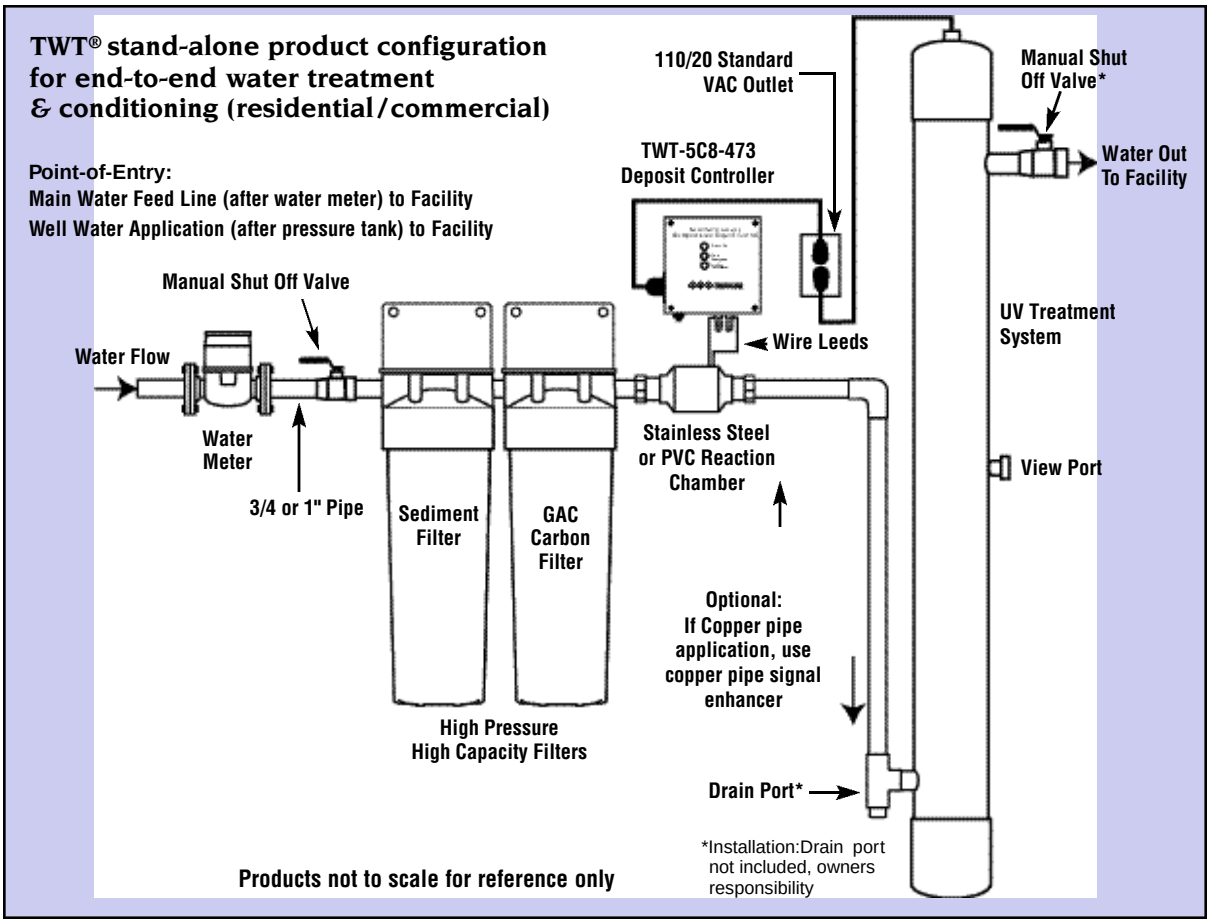


Situation:
One Deposit Controller with two solenoid coils and/or Reaction Chambers for before and after system installation, or when entrance of water line to facility prevents preferred installation.

Solution:
The Deposit Control unit will accept two solenoids coils or two Reaction Chambers so long as the total impedance of the load is within the units design (consult TWT or its distributors for verification).Upgrading of the Controller is necessary when using reaction chambers and/or if extreme hard water conditions exist. Install two solenoids or reaction chambers (as shown).One on the cold water feed and one on the hot water feed. Wire the two in series as shown.The distance between the reaction Chambers/solenoids to the Controller may be a total of not more than 100 feet without loss of output power.(closer distances are recommended)

Note: When upgrading controller for extreme hard water conditions (TDS), the on-site wrap coil dimensions must continue to match the actual pipe size, not the controller upgrade.

Filtration • Deposit Control • UV Disinfection & Purification



TWT-SYS700-FS–
3/4" pipe size
TWT-SYS1200-FS–
1" pipe size

Filter Set Systems Specs:
Filter Housings
20" sediment filter
20" carbon filter
Mounting Bracket
Filter Wrench
Pressure Tested

TWT-5C8-473
Residential / Commercial
Deposit Control System
For Pipes 1 inch or
less in diameter

TWT-CSE-0227–
for copper pipes only
2" or less in diameter

The copper signal enhancer is a passive signal/ impedance matching circuit.This device provides a power boost to the conditioning signal in copper pipes.

TWT-RC.75–
PVC Reaction Chamber
for pipes 3/4" or less in diameter

TWT-RC-1–PVC Reaction Chamber
for pipes 1" or less in diameter

TWT-SRC.75–Stainless Steel Reaction Chamber for pipes 3/4" or less in diameter

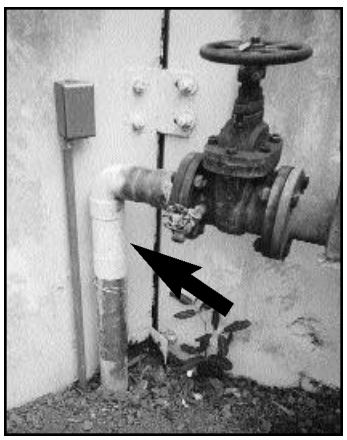
TWT-SRC1–Stainless Steel Reaction Chamber for pipes 1" or less in diameter

TWT-UV250–4 GPM
TWT-UV700–8 GPM
TWT-UV1200–12 GPM
Ultraviolet Disinfection
System

On Site Outdoor Solenoid Installation

The versatility of the Triangular Wave Deposit Control System allows for exterior installation when interior installation is impossible

Triangular WaveTechnologies, Inc.Microprocessor TWT-5C8-404 installed in a weatherproof electrical box on the outside wall of the building.

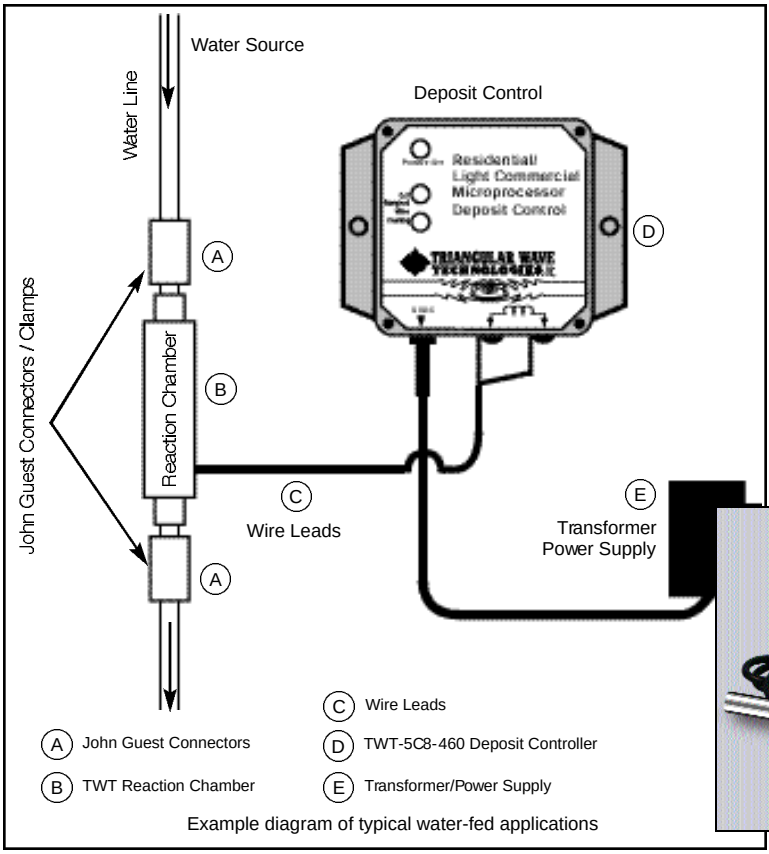


The coil is wrapped around a 2" water pipe and protected from dirt, disturbance and moisture with weatherproof tape.

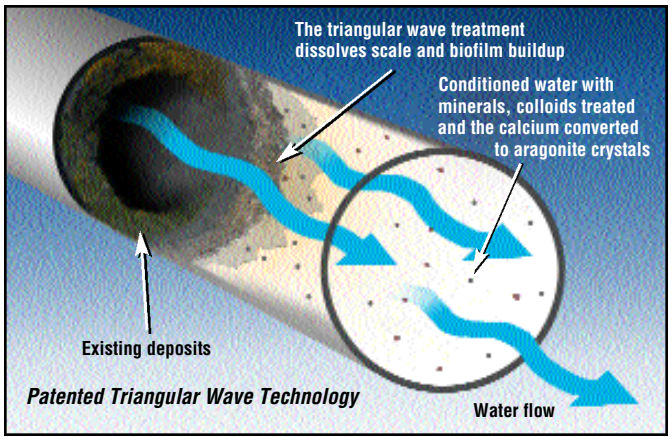
TWT Deposit Control System Installation for Water-Fed Appliances

D2

Control Scale and Bio-fouling in Beverage Dispensing Equipment



Example diagram of typical water-fed applications



Dissolving scales in fluid pipe.

Model TWT-5C8-460
Residential/Light Commercial Deposit Control System with Reaction Chamber
Designed for pipes 1/2 inch or less in diameter.
Size: 3.3"W x 3.3"H x 1.3"D
Voltage: 9 vdc
Amperage: Draws less than 1 Amp.

Optimal installation of the TWT Deposit Control System:

1. Cut water line and insert Reaction Chamber using John Guest connectors/ Clamp as illustrated.
2. Attach power supply to back of machine or adjacent to water-fed appliance in a safe location.
3. Attach wire leads from Reaction Chamber to terminals on Deposit Controller.
4. Plug transformer/power supply into a standard 110 VAC outlet.

Note:
Deposit Control Reaction Chamber should be installed on water feed line after a any filter and solenoid valve system.

Install reaction chamber on water feed line midway between solenoid valve and water tank.

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 reduced by fluid disturbances (e.g., pressure changes) and high temperature conditions (flashing, boiling, etc.).

In Automatic Fill Systems, a Fill Solenoid Valve will be used to control the fluid level in the fill system. Where a large pressure change takes place immediately downstream of the solenoid valve, TWT recommends that the Reaction Chamber be located downstream from the solenoid valve to avoid this pressure change (fluid disturbance).

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. 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 minerals in solution increases.

In order to ensure the greatest level of operation, performance and satisfaction in your work with TWT's water-fed beverage/coffee dispensers, we recommend that you contact our engineering staff, who will be pleased to work closely with you to determine the optimal installation to meet your needs and provide the best results for you and your customers.

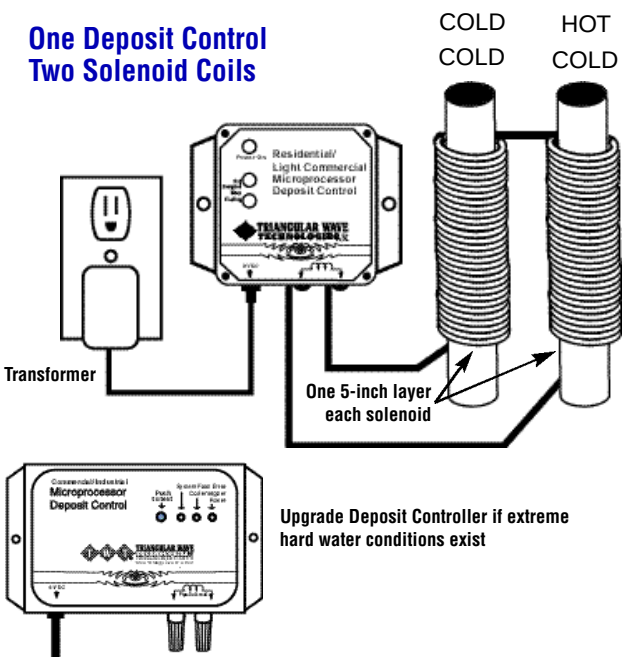
Triangular Wave Deposit Control System Controls Scale Buildup In Reverse Osmosis Water Treatment System

- **No scaling of the flanges or locking rings.**
  Prior to the Triangular wave System wrenches were needed to disassemble the assemblies; now the disassembly can be accomplished by hand
- **Reverse Osmosis filters capacity and life cycle extended**
- **Filters were not scaled on the surface. The filter membranes were filled with dirt and particulate matter; as would be expected. The extended life of the membranes is due to the lack of scale accumulation on the surface.**
- **No scale formed around the edges of the filter assemblies, and no short circuiting of the filters was found**
- **Reaction Chamber and/or coil installed before other fluid treatment technologies**
- **TWT Deposit Control Systems work to protect other treatment technologies as well, including ozone,ultraviolet, and other filtration systems, keeping them clean and enhancing their operation. In this way, their full treatment benefits are realized, with reduced maintenance requirements.**

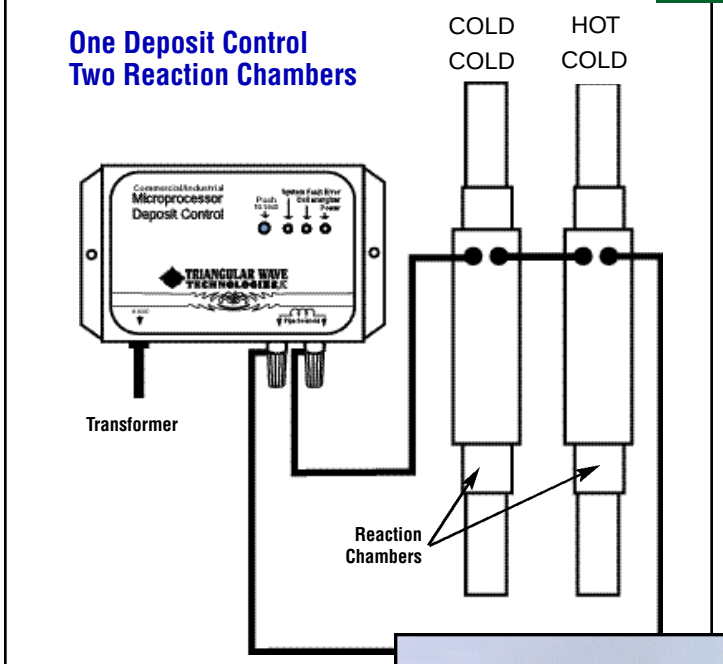
Consider using TWT Deposit Control Systems in conjunction with any existing or potential fluid treatment systems as a complementary technology. For further details on how you can leverage TWT Deposit Control benefits, please contact us.

MADE IN U.S.A.

One Deposit Control Two Solenoid Coils



One Deposit Control Two Reaction Chambers

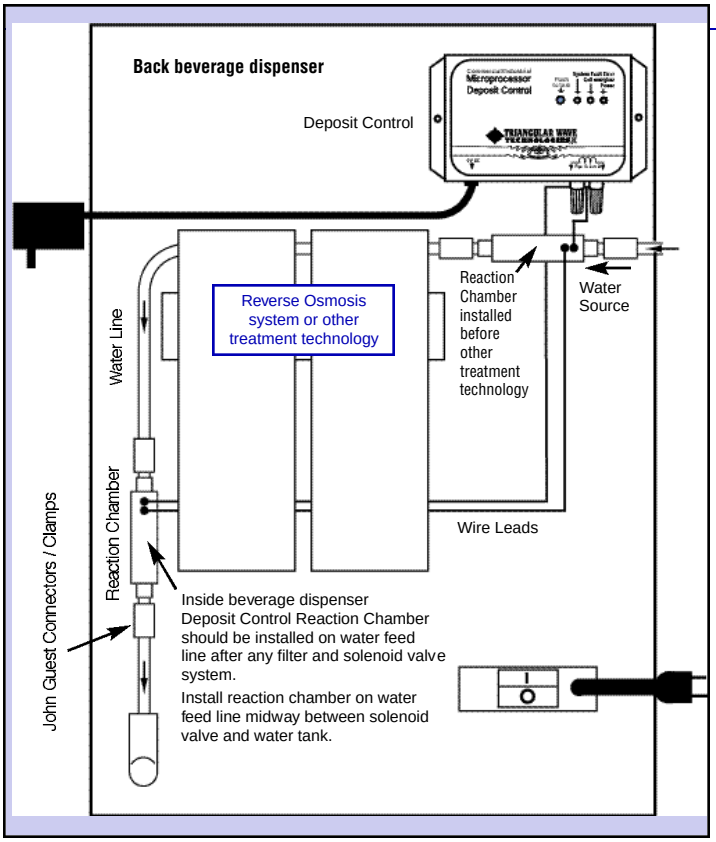


Situation:
One Deposit Controller with two solenoid coils and/or Reaction Chambers for before and after system installation, or before other treatment technologies and were recommended by TWT.

Solution:
The Deposit Control unit will accept two solenoids coils or two Reaction Chambers so long as the total impedance of the load is within the units design (consult TWT or its distributors for verification).Upgrading of the Controller is necessary when using reaction chambers and/or if extreme hard water conditions exist. Install two solenoids or reaction chambers (as shown).One on the cold water feed and one on the hot water feed or before other treatment technologies and were recommended by TWT. Wire the two in series as shown.The distance between the reaction Chambers/ solenoids to the Controller may be a total of not more than 100 feet without loss of output power.(closer distances are recommended)

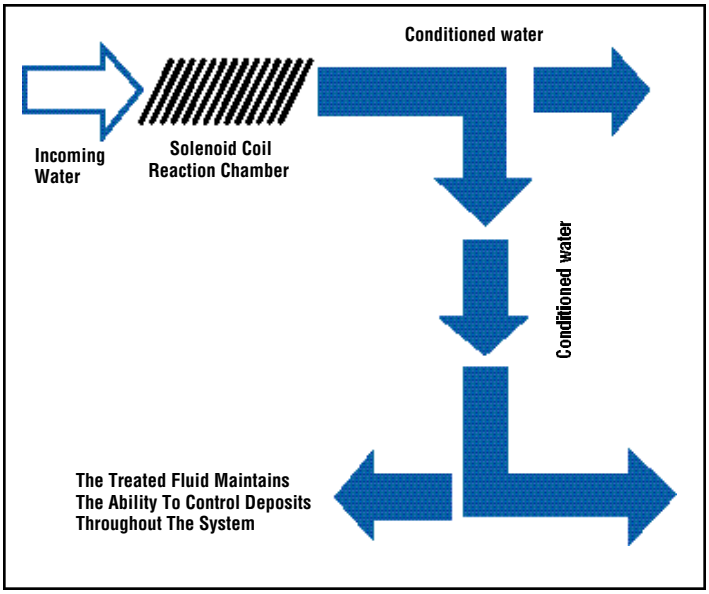
Note: When upgrading controller for extreme hard water conditions (TDS), the on-site wrap coil dimensions must continue to match the actual pipe size, not the controller upgrade.

Model TWT-5C8-472
Commercial/Industrial
Designed for pipes 1 inch or less in diameter
Size: 3.75"L x 6.5"W x 1.3"D • Voltage: 9 vdc
• Amperage: Draws less than 1 Amp.
• Coil length: 4'



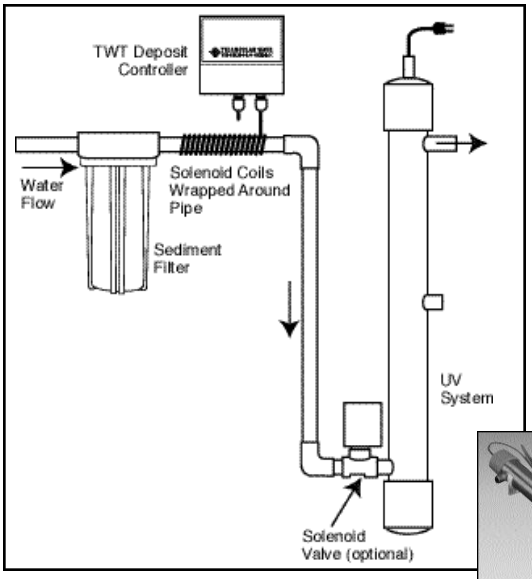
One Deposit Control / Two Reaction Chambers

When the TWT system is properly installed the effects of the triangular wave form technology treatment last downstream



TRIANGULAR WAVE TECHNOLOGIES SYSTEM INTEGRATION
ULTRAVIOLET DISINFECTION/PURIFICATION SYSTEM WITH DEPOSIT CONTROL

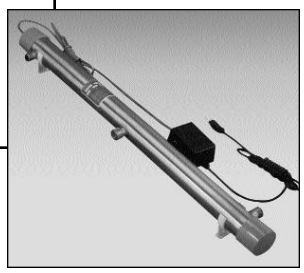
Eliminate the biofilm, that serves as a breeding ground for disease-causing bacteria, collecting in your pipes, tubing and equipment.



The patented Triangular Wave Deposit Control System conditions the water before it enters the water lines for the equipment and ultraviolet System. The bacteria and scale particles in the water are conditioned so that they remain suspended and unable to attach to the water line walls or the ultraviolet system. In addition, the conditioned water will attack the biofilm on the walls of the water lines and cause the biofilm to detach from the walls and remain suspended in the water. By eliminating the habitat provided by the biofilm, the bacteria will ultimately die off.

Recommended configuration for combined use of TWT Ultraviolet Disinfection and Deposit Control Systems

All the needed elements for maximum fluid protection, management, and peace of mind in one simple packaged solution. State-of-the-art Microprocessor Deposit Controller, Solenoid Coil and/or Reaction Chamber, and UV Disinfection units are combined to provide a start-to-finish answer to simplified prevention, treatment and management of water line contamination dangers. TWT solutions are scalable to fit the volume you need - ask us to specify the system that works best for you!

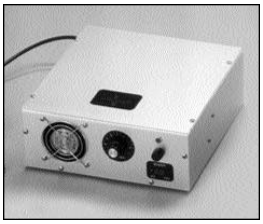


UV-700

Deposit Controller Model TWT-5C8-401

OZONATOR

The Ozonator is a natural, safe way to purify water in many different applications. Common uses include hot tubs, whirlpool baths, swimming pools, water bottling plants, water vending machines and household water systems. It eliminates the need for chemicals which can be irritating to people and costly to budget. The Ozonator converts Oxygen (O2) into (O3) by the action of the corona discharge system. Ozone is then injected into the water where it destroys viruses, bacteria and many other micro-organisms. taste, odor and color disappear and iron oxide, hydrogen sulphide, lignite and tannin are precipitated out, leaving your water pure and clean.



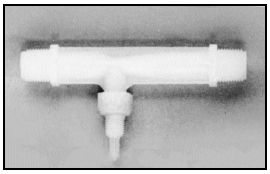
TWT-15-SW-400

DRYER

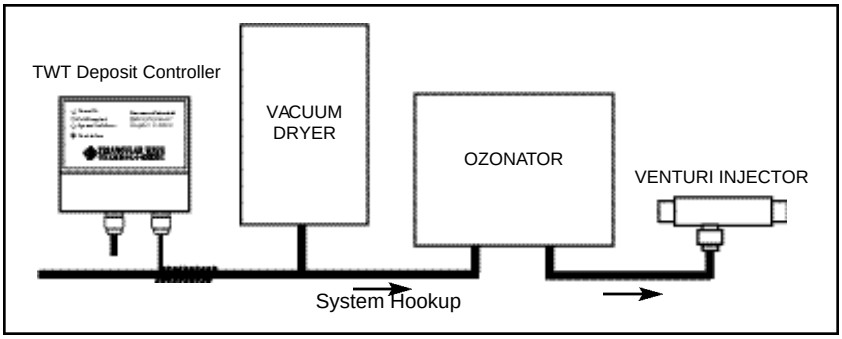
This unit is a vacuum dryer that will greatly enhance the ozone production.The SVD-1 dries the input air, therefore generating more oxygen and by default, more ozone. The venturi is used to inject the ozone into the water, and this completes the system needed to purify tour water

Both the SW-400 and the SVD-1 are easy to install and operate continuously and automatically, using no more current than an ordinary light bulb!.

TWT-15-SVD1-1



Venturi



Recommended configuration for combined use of TWT Deposit Control, Vacuum Dryer, Ozonator and Venturi Injector System

Larger volume systems available upon request

TWT FLUID MANAGEMENT PRODUCTS & SYSTEMS
THE ENHANCEMENT SOLUTIONS FOR ORIGINAL EQUIPMENT MANUFACTURERS

FLUID MANAGEMENT SOLUTIONS

• Residential • Commercial • Industrial

Chemical-free Fluid Management Systems To Improve Operating Efficiency And Life Cycle Of Equipment

Bringing You The Best In Fluid Management Solutions

Protection For New Equipment

Treatment For Existing Equipment

- ***SYSTEMS INTEGRATION***
- ***RETROFIT PROGRAMS***
- ***PRIVATE LABEL PROGRAMS***
- ***INDUSTRY-SPECIFIC CUSTOM DESIGN***
- ***CONSULTING AND TRAINING***
- ***Please contact us with details on your OEM integration or custom design ideas & projects at info@triangularwave.com***

TWT has extensive design, engineering, and manufacturing ability to work with OEM customers to use our products in whole or component form, as a component assembly, or as an accessory to their primary product. We offer custom design, private label, and OEM pricing schedules. Take advantage of our outstanding manufacturing and marketing expertise — let TWT custom design a product to meet your specific application needs.

Our unique capabilities and custom design expertise have and continue to successfully solve a wide variety of problems for a wide variety of customers

- ***FROM IDEAS TO FINAL PRODUCTION***
- ***EFFICIENT ENGINEERING DESIGN TEAM***
- ***STATE -OF-THE-ART PRODUCTION EQUIPMENT AND FACILITY TO MEET THE EVER CHALLENGING PRODUCTION REQUIREMENTS***
- ***TECHNICAL AND TEST DEPARTMENT WITH OUTSTANDING QUALITY CONTROL GUARANTEED***
- ***COST EFFECTIVE AND DELIVERED ON TIME***

Value Added Programs

TWT Value Added Programs (VAP's) provide original equipment manufacturers (OEM) with the opportunity to enhance their product line, enter new markets, and broaden their customer base. Through our VAP's, we will work together with your sales and technical staffs to develop fluid management product enhancements, product marketing initiatives, and sales support and training programs.

OEM Discounts

We offer quantity discounts on many of our customized products. If our minimum quantities exceed your monthly supply schedule, you can set up a blanket order. A blanket order will also guarantee regular product shipments to meet your production schedule.

Retrofit Program

Our Retrofit Program offers the opportunity to generate new business from your existing and inactive customer base, whose fluid handling equipment can benefit from a retrofit upgrade. Our ***Private Label Program*** enables you to provide your customers with your own end-to- end solutions under your own name plate, increasing your market presence. We are also eager to work with our OEM customers to purchase and integrate their products into our own. If you have a product that you believe would enhance one of TWT's own products, please contact us to discuss the opportunity.

TWT will work together with your sales and technical staffs to develop fluid management product enhancements, product marketing initiatives, and sales support and training programs to make your success the priority. The TWT team is driven by a simple but challenging goal - to build superior products and to continually innovate to be the leader in fluid and water management solutions.

TWT manufacturers, represents and distributes a broad range of water and fluid management products for industrial, commercial, and residential use

Our products provide end-to-end solutions to solve all fluid-related problems

TREATMENT FOR EXISTING EQUIPMENT

BRINGING YOU THE BEST IN FLUID MANAGEMENT SOLUTIONS

PROTECTION FOR NEW EQUIPMENT

RESIDENTIAL & LIGHT COMMERCIAL OFFICES

Coffee & Tea Dispensers
Swimming Pools & Spas
Whirl Pools
Medical/Dental Offices
Bottle-Less Water Coolers
Washing Machines
Dishwashers
Ice Machines
Lawn & Sprinkler Systems
Homes
Mobile Homes
Humidifiers
Water Heaters
Boilers
Espresso Machines
Aquariums
Car Wash
Soup Vending Machines
Soda Dispensing Equipment
Steamers Systems
Marine Industry-Houseboats
Laundry & Cleaning Industry
and many more

WATER SUPPLY

Pollution Remediation
Water Treatment
Waste Water Treatment
Emergency Water Systems

COMMERCIAL

Cooling Towers
Heat Exchangers
Condensers & Chillers
Boilers/Water Heaters
Power Generation
Condensers Irrigation
Public Swimming Pools
Public Display Fountains
Steam Cleaning Systems
Spray Systems
Food Processing Equipment
Hotel/Motel Restaurant
Printing
Trucking
Maritime Cargo
Optical
Medical/Dental
Veterinary
All Fluid Based Applications

INDUSTRIAL PROCESS

Petro Chemical
Aluminum
Chemical Plastics
Glass Molding
Dye Manufacturing
Food Processing
Iron Removal
Lumber
Metal / Mills Finishing
MTBE
Paint Manufacturing
Pulp & Paper Industry
Pharmaceuticals
Rubber
Steel
Textile Manufacturing
Mining & Ore processing
Breweries
Pasteurization
Plastic Injection Molding

HEAVY INDUSTRY & ELECTRIC GENERATION

Surface Condenser Cooling Tower
Refining
Petro-Chemical
Chemical Manufacturers
Water Purification
Surface Condensers
Steam Electricity Generation

AGRICULTURAL APPLICATIONS

Irrigation Systems
Poultry
Farming

MEMBRANE SEPARATION PROCESS

Reverse Osmosis
Ultra-Filtration
Ceramic Filtration-Biofouling

To find out more about our prospective markets check TWT's website under industrial applications

TWT® Products & Systems Users and Market Opportunities!

RESIDENTIAL & LIGHT COMMERCIAL OFFICES

Coffee & Tea Dispensers
Swimming Pools & Spas
Whirl Pools
Medical/Dental Offices
Bottle-Less Water Coolers
Washing Machines
Dishwashers
Ice Machines
Lawn & Sprinkler Systems
Nipple & Plasson Drinkers
Homes
Mobile Homes
Humidifiers
Water Heaters
Boilers
Espresso Machines
Aquariums
Car Wash
Soup Vending Machines
Soda Dispensing Equipment
Steamers Systems
Marine Industry-Houseboats
Laundry & Cleaning Industry
and many more

WATER SUPPLY

Pollution Remediation
Water Treatment
Waste Water Treatment
Emergency Water Systems
Well Water treatment

COMMERCIAL

Cooling Towers
Filtration Equipment
Heat Exchangers
Condensers & Chillers
Evaporators
Boilers/Water Heaters
Power Generation
Condensers Irrigation
Public Swimming Pools
Public Display Fountains
Steam Cleaning Systems
Spray Systems
Food Processing Equipment
Hotel/Motel Restaurant & Catering
Printing
Trucking
Maritime Cargo
Optical
Medical/Dental
Veterinary
All Fluid Based Applications

INDUSTRIAL PROCESS

Petro Chemical
Aluminum
Chemical Plastics
Glass Molding
Dye Manufacturing
Fabric Manufacturing
Food Processing
Iron Removal
Lumber
Metal / Mills Finishing
MTBE
Paint Manufacturing
Pulp & Paper Industry
Pharmaceuticals
Rubber
Slurry Process Lines
Steel
Sugar Mills
Textile Manufacturing
Mining & Ore processing
Breweries
Pasteurization
Plastic Injection Molding
Polymer Production

HEAVY INDUSTRY & ELECTRIC GENERATION

Steel Making
Surface Condenser Cooling Tower
Refining
Petro-Chemical
Chemical Manufacturers
Water Purification
Surface Condensers
Steam Electricity Generation

AGRICULTURAL APPLICATIONS

Dairy Products
Irrigation Systems
Poultry
Farming

MEMBRANE SEPARATION PROCESS

Reverse Osmosis
Ultra-Filtration
Ceramic Filtration-Biofouling

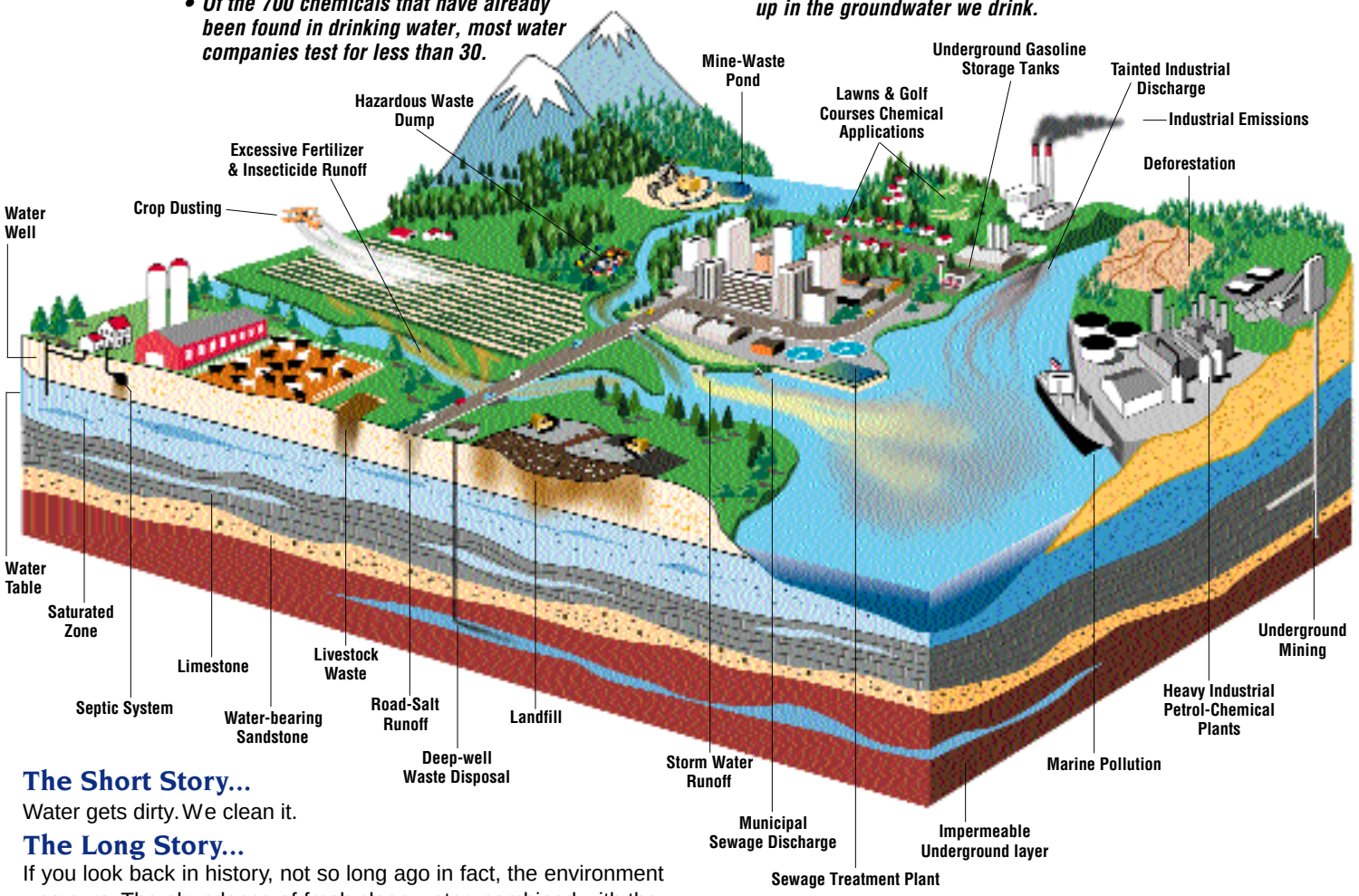
To find out more about our prospective markets check TWT's website under industrial applications

DO YOU KNOW WHAT'S IN YOUR WATER?

IS IT COSTLY, DIRTY, SAFE TO USE?

Over 500 billion pounds of hazardous chemical waste are improperly disposed of every year.

- *Every day, 50 billion gallons of liquid hazardous waste are disposed at 26,000 disposal sites, 85% are located above aquifer. Some chemicals, such as TCE are too toxic, a single gallon can contaminate a years worth of drinking water for 3800 people.*
- *Every year, 100 billon gallons of liquid hazardous waste are absorbed into groundwater supplies.*
- *Of the 1,000 EPA Priority waste sites in the U.S., less than 20 have been cleaned up since the EPA's inception.*
- *Of the 700 chemicals that have already been found in drinking water, most water companies test for less than 30.*
- *This much we know... If we put toxic chemicals into or on the ground, they will eventually end up in the groundwater we drink.*



The Short Story...

Water gets dirty. We clean it.

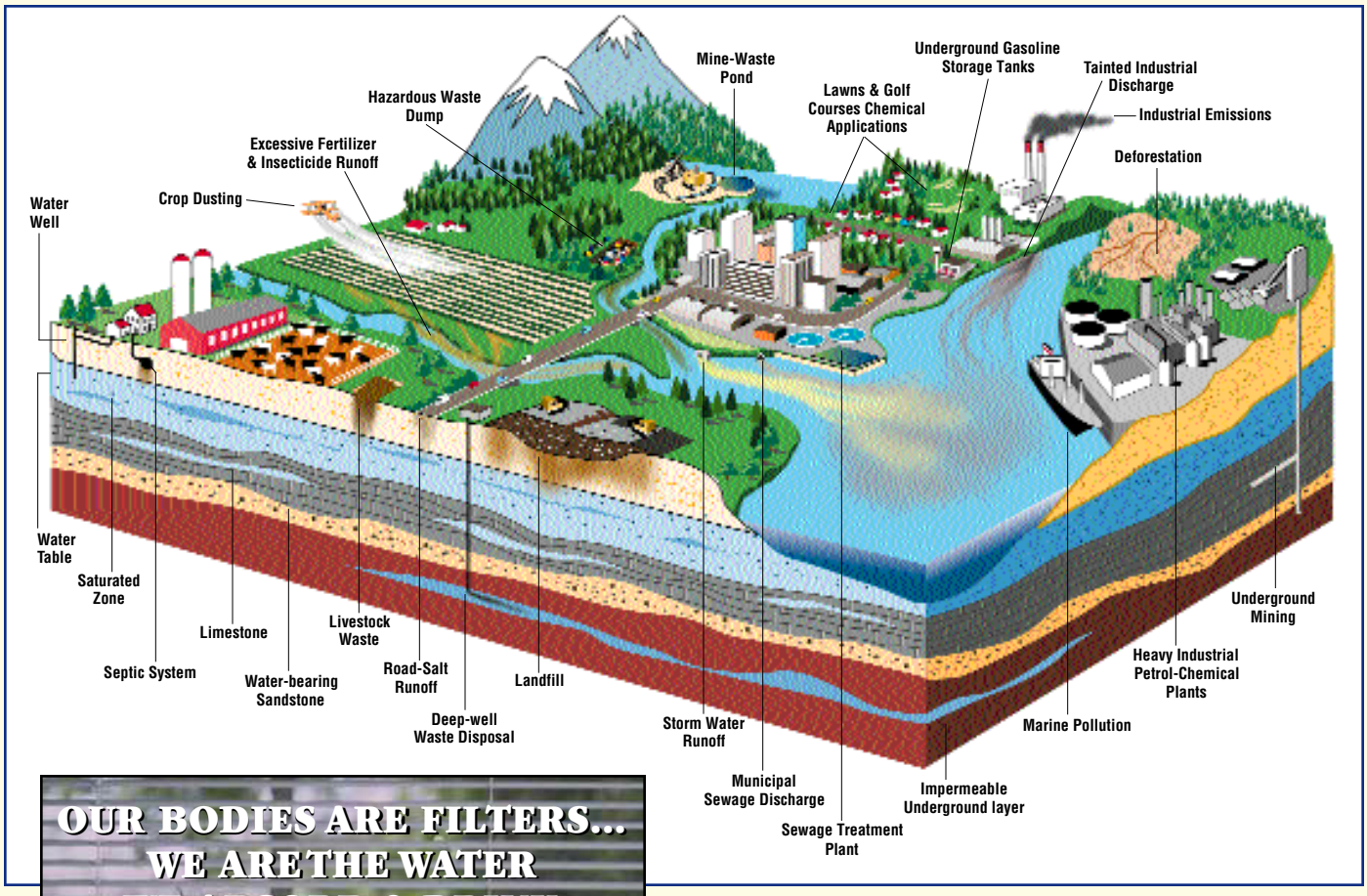
The Long Story...

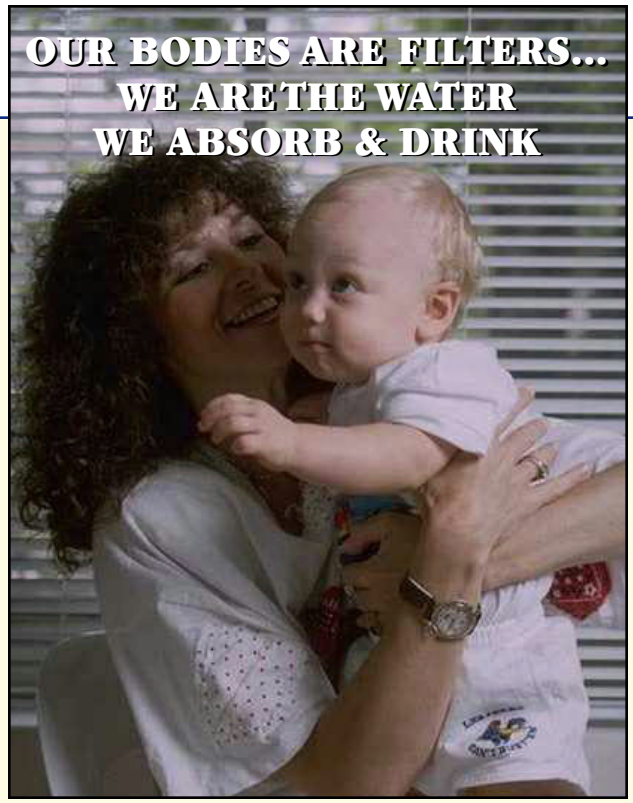
If you look back in history, not so long ago in fact, the environment was pure. The abundance of fresh clean water, combined with the natural cycles of evaporation, purification (through ultra violet light found in the suns rays), deionization (through thunderstorm activity) and precipitation, regularly returned fresh water to the earths' surface in the form of pristine rainfall, maintaining the integrity of our planets water supply for eons. Once the atmospheric process of disinfection and purification was complete, that same clean water was drawn by the earths' gravity deep into aquifers miles under ground.Then the geothermal process forced that same water back up to the surface, squeezing the water through layers of rock and sediment, filtering out all of the remaining impurities,

DO YOU KNOW WHAT'S IN YOUR WATER?

Is it Costly, Dirty, Safe to Use? Over 500 billion pounds of hazardous chemical waste are improperly disposed of every year. This much we know...If we put toxic chemicals into or on the ground, they will eventually end up in the water we consume.

ATS94A





THE HUMAN BODY IS 70% WATER

Which would you prefer...to filter your water while you drink it, or before you drink it??

NO MATTER HOW TOUGH THE JOB... TWT IS THE SOLUTION

In effect, 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. TWT systems make sense from operational, economic, and safety points of view. Ownership of the TWT System will afford you and/or your customers significant savings over a short period of time and even greater savings over the life cycle of the equipment.

www.Triangularwave.com

Email:info@triangularwave.com • triwaveinc@aol.com • Visit our web site:www.Triangularwave.com

THERE ARE THREE BASIC CAUSES OF WATER/FLUID RELATED PROBLEMS

■ Scale

Problems:
- **Loss of heat transfer efficiency**
- **Flow restriction in pipes and frozen valves**
- **Back pressure increases energy needed to pump**
- **Reduced reaction vessel capacity**
- **Localized corrosion**
- **Visible surface scale objectionable**

■ Adverse Water Chemistry

Problem: • **General corrosion**

■ Biofilm

Problems:
- **General corrosion**
- **Biocorrosion (both general and local)**
- **Sludge**
- **Disease and odors**
- **Bacteria, Algae, Fungus, etc.**

■ The End Results of Water Problems

- **Wasted water • Ruined equipment • High energy costs**
- **Productivity losses • Product contamination or quality problems • Disease and odor in the cooling water environment**

■ Materials That Deposit on Equipment and Cause Water/Fluid Problems

Materials may be animal, vegetable, mineral, or corrosive water chemistry. The sources of the materials include: pollution, wind borne dirt, bacteria, algae, chemical additives, and process components themselves. Some of the materials can grow; such as bacteria, algae, fungus, etc

■ Treatment

***S*cale, Adverse Water Chemistry & Biofilm Can Cost You Money!**

Untreated fluid used in boilers, hot water systems, cooling towers and other fluid related equipment contains dissolved salts, gases and traces of many minerals and metals. These elements are the direct cause of scale buildup in pipes and equipment. If left untreated, scale buildup can increase fuel costs, repair and ongoing cleaning costs, downtime and may eventually result in significant equipment replacement.

The bottom line is that if the problem-causing materials are controlled, then 85% to 90% of the problems are eliminated. Treatment options include **removal** and **control**.

- **Removal involves physical or chemical cleaning, filtration,ion exchange, softening, demineralization, reverse osmosis.**
- **Control involves adding chemicals or ozone, or electromagnetically conditioning the water.**

■ The Importance of Clean Water

Clean water is essential for human well-being and survival, agriculture, and industry. When water is consumed or absorb with harmful contaminants or in insufficient quantities, human condition can deteriorate through malnutrition, sickness, disease, miscarriage, and death.

■ The earth is abundant in water but only 1% of the earth's water is drinkable.

97% of the earth's water is in oceans and seas and contain intolerable levels of salt, While various desalination technologies exist, no cost-effective high-throughput method is available. The remaining 2% of the earth's water is frozen and not readily accessible.

Drinkable water comes from two sources: Surface water at lakes, reservoirs and rivers which supply most major cities, groundwater from wells that access underground geological formations such as aquifers which is used by smaller communities. While pristine water is usually clean, regulatory agencies monitor over 100 dangerous water contaminates which can come from rain runoff over hazardous waste, naturally occurring sources of contaminants, water treatment chemicals, and pollution from residential consumers, industry and agriculture.

Water is generally classified into two groups...surface water and ground water:

■ Surface Water

Surface water is just what the name implies; it is water found in a river, lake or other surface impoundment. This water is usually not very high in mineral content, and many times is called soft water even though it usually is not. Surface water is exposed to many different contaminants, such as animal wastes, pesticides, insecticides, industrial wastes, algae and many other organic materials. Even surface water found in a pristine mountain stream possibly contains giardia or coliform bacteria from the feces of wild animals, and should be boiled or disinfected by some means prior to using or drinking.

Ground Water

Ground water is water trapped beneath the ground. Rain that soaks into the ground, rivers that disappear beneath the earth, and melting snow are but a few of the sources that recharge the supply of underground water. Because of the many sources of recharge, ground water may contain any or all of the contaminants found in surface water as well as the dissolved minerals it picks up during it is long stay underground.

Due to the different characteristics of ground and surface water, it is important that you know the source of your water. Of th 326 million cubic miles of water on earth, only about 3% of it is fresh water, and 2% of that is frozen. Only 1/2 of 1% of all water is underground; about 1/50th of 1% of all water is found in lakes and streams. The average human body is about 70% water.You can only survive five days or less without water.

Hard Water: What is hard water?

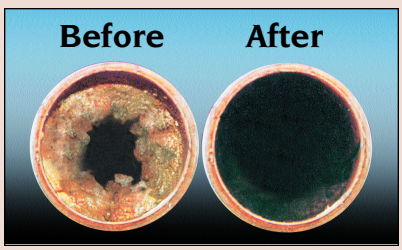
Waters that contains dissolved minerals, such as calcium and magnesium above certain levels are considered "hard water" because water is considered a "solvent", i.e., over time it can break down the ionic bonds that hold most substances together, it ends to dissolve and gather up small amounts of whatever it contacts. For instance, in areas of the world where rock such as limestone, gypsum, fluorspar, magnetite, pyrite and magnesite are common, well water is usually very high in calcium content, and therefore considered "hard".

Hard water is the most common problem found in the average home. Hard water is water that contains dissolved hardness minerals above 1 grain of hardness per gallon (GPG*) or about 17 parts per million of hardness.

What are hardness minerals?

Calcium, manganese and 0magnesium are the most common.

Pounds of Scale Removed from a Hot Water Plumbing and Heating Systems



*Grains per gallon

How do you measure hardness?

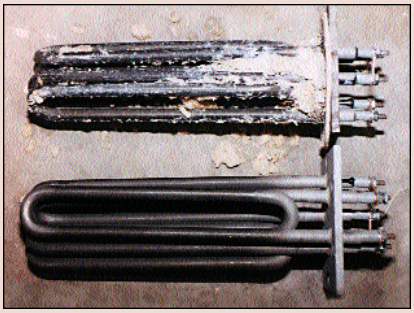
Parts per million or grains per gallon are the most common unit to measure hardness. One part per million (PPM) is just what it says: out of one million units, one unit. Grains, or grains per gallon (GPG) is a weight measurement taken from the Egyptians; one dry grain of wheat, or about 1/7000 of a pound. It takes 17.1 PPM to equal 1 GPG.

Why should hard water concern me? *Problem*

For many uses, it would not matter. For instance, to put out fires, wash the mud off the streets or float your boat, water would have to be pretty hard to cause a problem. But for bathing, washing dishes and clothes, shaving, washing your car, and for most commercial and industrial uses, as well as others, hard water is not as efficient or convenient as soft water.

For instance:

- You generally use only 50% as much soap cleaning with soft water or with water where the effects of hardness have been neutralized, as you do with hard water.
- Hard water and soap combine to form "soap scum" that can't be rinsed off, forming a "bathtub ring" on all surfaces and leaving unsightly spots on your dishes, fixtures, etc..
- Soap scum will remain on your skin even after rinsing! It will clog the pores of your skin and coat every hair on your body.This serves as a home for bacteria and causes diaper rash, minor skin irritation and skin that continually itches.
- When hard water is heated, the hardness minerals are re-crystallized to form hardness scale. This scale can clog your pipes and hot water heater, causing premature failure, and necessitating costly repairs or even replacement.



Scaled Tube Bundles Above

- For many industrial uses, the hardness minerals interfere with the industrial or commercial process, causing inferior product.

Triangular Wave Technologies, Inc. (TWT®) Product Summery

Sorted by Technology

TWT, Inc. offers a full range of products & systems designed to address fluid problems wherever fluid flows. From patented deposit control technology to pre and post filtration needs, ionization, iron removal, disinfection, and ultraviolet purification treatment and conditioning, TWT has the versatile, efficient,
cost-effective methods to solve your fluid management problems end to end.

- **Versatile Fluid Management Systems To Effectively Meet The Needs Of Any Industry and Application**
- **Controls scale, bio-film & corrosion**
- **Enhance operating efficiency & life cycle of equipment**
- **Saves water & energy**
- **Protection for new equipment: TWT provides new equipment with the ability to enhance it's features and benefit**
- **Treatment for existing equipment: Retrofit existing equipment to improve its operating efficiency and life cycle**

■ TWT® Patented Deposit Control

Technologically Advanced Method for Water & Fluid Management Providing Comprehensive End-To-End Treatment & Conditioning (chemical-free)

TWT Patented Deposit Control System–

The basic component in the TWT systems is the deposit controller. It is comprised of a microprocessor, solenoid coil wrap and/or a reaction chamber. The microprocessor is a patented controller that functions like a small computer to relay a continuous electrical power supply to the solenoid coil and/or reaction chamber. The reaction chamber is plumbed into the main water in-take line and/or just before each piece of vital processing equipment, and provides a factory-wrapped wire coil forming a solenoid. The solenoid conveys the triangular wave signal at the appropriate power level (as allowed by the model chosen) to the water passing through the chamber. This signal constantly changes the polarity, frequency, and amplitude of the current entering the water. This triangular wave treatment produces several benefits. It increases the capability of the water to hydrate scale ions and other colloidal particles. In effect, the surface charge of the hydrogen molecules is enhanced and the water is made "wetter". This "hydrated" water can dissolve unwanted particles, suspend them in solution, and allow them to be easily filtered out or flushed from the system. Accordingly, the mineral and biological particles that cause scale, deposits, and corrosion are dissolved and washed away. This means that the breeding environments for bacteria, such as bio-film and corrosion, are eliminated. The agitation created in the reaction chamber also disrupts the conditions essential for the normal reproduction of bacteria and they die, thus allowing them to be harmlessly flushed out of the system.

TWT Reaction Chamber–

The TWT Reaction Chamber is part of the patented TWT Deposit Control Technology,the function of which is to control scale and bio-film in the plumbing infrastructure, fixtures, and water-fed appliances found in the facility being treated. The Reaction Chamber provides a chamber through which the water flows and is exposed to the triangular wave signal that lies at the heart of the deposit control technology. As the fluid passes through, it is treated and then carries that treatment downstream, to condition the rest of the plumbing system, non-chemically and reliably.

To use in conjunction with the TWT Deposit Control Systems when required, Triangular Wave 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. If a coil is applied to such a pipe, the pipe becomes a shield and prevents the wave energy from entering the fluid path. 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 two 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.

Triangular Wave Technologies, Inc. (TWT®) Product Summery

Sorted by Technology

TWT, Inc. offers a full range of products & systems designed to address fluid problems wherever fluid flows. From patented deposit control technology to pre and post filtration needs, ionization, iron removal, disinfection, and ultraviolet purification treatment and conditioning, TWT has the versatile, efficient,
cost-effective methods to solve your fluid management problems end to end.

- **Versatile Fluid Management Systems To Effectively Meet The Needs Of Any Industry and Application**
- **Controls scale, bio-film & corrosion**
- **Enhance operating efficiency & life cycle of equipment**
- **Saves water & energy**
- **Protection for new equipment: TWT provides new equipment with the ability to enhance it's features and benefit**
- **Treatment for existing equipment: Retrofit existing equipment to improve its operating efficiency and life cycle**

■ TWT® Patented Deposit Control

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in the toilet, tub and sink., the laundry will be cleaner, too! The Rust-Erase Iron Filter works automatically. Every drop of water coming through the line is filtered to remove rust and other particles. The pre-set timer periodically activates the back-wash mechanism which keeps the filter medium fresh and effective for many years. Media is good for approximately 3 - 5 years or more depending on water conditions.

Effects of iron and manganese in water

When exposed to air, dissolved iron or manganese reacts with oxygen and is converted by oxidation to a colored, solid material that settles out of the water. Iron changes to white, then yellow and finally to a reddish-brown color. Manganese forms a black residue. High concentrations of these sediments cause reddish-brown or black stains on laundry and facility fixtures. Another result of iron and manganese in water is the presence of harmless bacteria in soil, shallow groundwater supplies and some surface water that secrete large amounts of red-brown (iron) or black-brown (manganese) slime that stain toilet tanks.

Integrated Water: Treatment & Conditioning Systems

MD Series Integrated Water Treatment Systems–

TWT® technologically advanced method for water management. Triangular Wave Technologies, Inc. All-In-One fluid management systems, the ultimate in water treatment & conditioning TWT® systems are factory engineered and assembled, applying all of the needed elements for maximum fluid protection, management, and peace of mind in one simple packaged solution. TWT® Filtration, Microprocessor Deposit Controller, Reaction Chamber, and UV Disinfection units are combined to provide a start-to-finish answer to simplified prevention, treatment and management of water line contamination dangers. The TWT All-In-One Fluid management water disinfection/purification systems are unique, compact, self-contained units for the treatment of water. (well and ground water application)

DP Series Integrated Water Treatment Systems–

Technologically advanced method for water management. Triangular Wave Technologies, Inc. TWT® Patented Deposit Control/ Ultraviolet Disinfection / Purification systems, TWT® systems are factory engineered and assembled, applying the needed elements for maximum fluid protection, in one simple packaged solution. TWT Microprocessor Deposit Controller, Reaction Chamber, and UV Disinfection units are combined to provide a simplified prevention, treatment and management of water line contamination dangers.The TWT water disinfection/ purification systems are unique, compact, self-contained units for the treatment of water. (municipal water application)

Bacterial Reduction Systems–

Technologically Advanced Fluid Treatment Methods for the Meat, Poultry and Other Related Processing Industries. Filtration • Deposit Control Technology • Ozone and/or UV Disinfection / Purification Combined for maximum effectiveness. (bacteria reduction guaranteed)
"The Competitive edge"

Total Water Control System–

For large cooling system applications - computer controlled system featuring Deposit Controller, Ultra-violet Disinfection or Ionguard and Filtration. Low pressure systems to 6,000 gpm,high pressure systems to 36,000 gpm for cooling tower, process water and other industrial applications.

Transportable Water Treatment Systems–

The most economical and efficient way to produce safe drinking water in temporary situations. The TWT Transportable Water Treatment System is an integrated system of exactingly selected components customized to remedy specific water treatment problems in temporary installations, remote areas or crisis situations. First developed for use in military camps related to the 1996 UN peace-keeping mission in Bosnia, the TWT are well suited to a wide range of applications. TWT systems are designed to produce safe drinking water, dependably and economically, from a wide range of problem input sources. The self-contained, transportable system filters out contaminants such as heavy metals, pesticides and parasites from any non-salt water source and kills all micro-organisms including virulent bacteria and viruses.

The following information will allow you to restore the quality, taste and clarity of your water. If your water related problems have not been answered...The good news is, there is something you can do about it...

REQUEST A QUOTE OR SEEK TECHNICAL INFORMATION

REQUEST A QUOTE FOR WATER & FLUID TREATMENT ON THE TWT WEBSITE HOME PAGE: WWW.TRIANGULARWAVE.COM

You may fill in this form on line and submit it to us as per below, or you may print it, fill it in, and fax it to us at (201) 573-8710. Please note that all fields marked with (*) must be filled, in order to receive a response. If you have trouble submitting this form via the Submit button at the top of this form, please send an e-mail to info@ triangularwave.com with your contact information

TWT is happy to provide this on-line quote and information request form to make your evaluation and purchase process as streamlined as possible. Your complete system quote and/or additional information will be provided to you by either TWT or an authorized TWT dealer or distributor, via e-mail (or fax, if requested) Please feel free to call us with any questions.

- **Filtration**
- **Patented Deposit Control Technology**
- **UV Disinfection & Purification**

COMBINED FOR MAXIMUM EFFECTIVENESS–
The Competitive Edge!

CLEANER WATER IS HEALTHIER WATER!

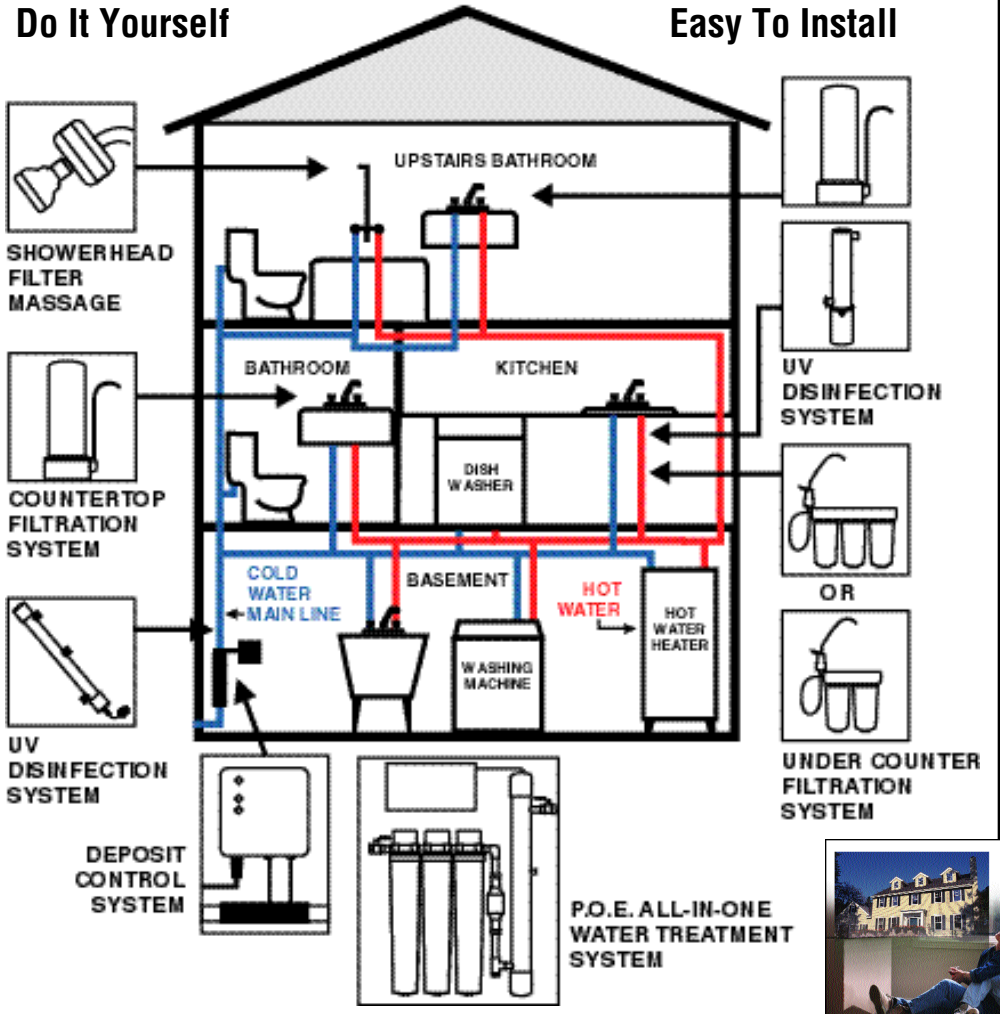
TWT® YOUR SIMPLE AND SAFE SOLUTION

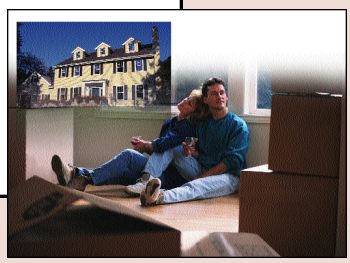
For a complete list of TWT® products, systems and technologies visit our website at:WWW.Triangularwave.com

On our home page you can download and watch for latest product updates

TWT Suggested Water Treatment Applications Home, Office and/or Facilities

No need to lift, carry, buy or store heavy water bottles





Restore the Quality, Taste and Clarity of your water.

How to Choose the Right System

Choosing the right system depends on these things…

- **The optimum amount of water measured in gallons per minute (GPM) or gallons per day (GPD) necessary to satisfy your peak water usage.**
- **The pipe size and material of the water pipe P.O.E. (point-of-entry) or P.O.U. (point-of-use) feeding your home,office or facility.**
- **The water treatment requirements dictated by the base water quality and environmental factors found in your geographic location.**
- **The levels of chemical/biological contaminant's found in your personal water source as revealed in an independent water quality test.**
- **The current source requirements in your part of the world.**

At TWT we feel the simplest way to choose a system depends on on your personal situation.Home/office and facility owners with well water have different water treatment requirements than users who rent an apartment in the city,owner facilities supplied by municipal water.

People with municipal water may choose to rely on a scaled down system that meets their current needs, while people drinking untreated ground water or surface water need to fully account for all aspects of water treatment in order to guarantee the purity of their water. Contractors and architects building large projects or facilities managers responsible for maintaining expensive H.V.A.C. equipment have unique water treatment requirements as well.

If you need guidance choosing the right products or systems, contact us at: info@triangularwave.com. If you feel that your requirements don't fit into any of the categories presented, please let us know and we will be more than happy to give you a thorough water quality requirements consultation free of charge.

TWT® the Ultimate in Chemical-Free Water Treatment & Conditioning– *Prevents Scale Build-up Throughout the Fluid System*

P.O.E. Point-of-Entry • P.O.U. Point-of-Use

www.triangularwave.com

■ Who will test my water for hardness?

If you are connected to a municipal supply, call the Water Superintendent, or your municipality. They can either provide the answer, or direct you to the proper individual who can. Remember the conversion factor: it takes 17.1 PPM to equal 1 GPG. In other words, if your water has 17.1 PPM calcium in it, divide 171 by 17.1 to get the answer in grains. This example would be 10 grains, or GPG. If you are on a private supply, you could contact your county extension agent; collect a sample in an approved container and send to the city or state health department for testing. You can also find a testing lab (try the yellow pages); or call a water conditioning company.

By the way, if you are on a private well, ***YOU, AND YOU ALONE*** are responsible for the safety of the water you and your family use and drink. You should test your supply for bacteria at least once per year and other contaminants at least every three years — more often under certain conditions.

■ Suffering from the scaling effects of hard water?

Solution

If your water tests over 1 GPG hardness, you should condition it with a ***Triangular Wave Deposit Control System***. The Triangular Wave System for neutralizing hardness and preventing the formation of lime deposits uses an electronic deposit controller; no salt or other chemicals are added to the water.

A. Deposit Control Systems:
Controls mineral and biological deposits, as well as corrosion in all fluid-based systems.

B. Factory Wrapped Wire Coil Reaction Chambers:
To use in conjunction with the TWT Deposit Control Systems to address magnetic pipe environments.

C. Copper Pipe Signal Enhancer:
The copper pipe signal enhancer must be used in all copper pipe applications to maximize the performance, and provide a boost to your application.

■ The Triangular Wave System will:

1. **Give the benefits of soft water without adding salt or removing health giving minerals.**
2. **Prevent any further hard scale buildup in and on water equipment and fixtures.**
3. **Remove existing scale that is inside the water system.**
4. **Soften the existing hard scale around taps, basins, and toilets.**
5. **Reduce soap scum and improve the lather of soap.**
6. **Make the water feel silkier.**
7. **Reduce the harsh effects of hard water on skin and clothes.**
8. **Reduce water spotting on fixtures and surfaces in contact with the water.**
9. **Provide a much more environmentally friendly solution to hard water; no salts or chemicals.**
10. **Improve the taste of water as pipes will be cleared of both mineral and biological deposits.**
11. **Increase the growth rate of plants that receive treated water.**

■ Water with Odors: My water stinks! What can I do?

First, you must learn a little about your nose: Once you smell something, your sense of smell can be dulled for a short while, and you can't make accurate judgments of smell. For instance, if I blindfold you, let you smell gasoline, hand you a piece of onion to eat and tell you it is an apple, you can't tell it is not because your nose is not working properly!! (Your sense of taste is not working either — smell and taste are closely related and affect each other!) So, to correctly analyze your problem, you need to become a detective.

The best time to locate the smell is after you have been away from home for a few hours — this allows your nose to become sensitive to 'that smell' again. With your 'sensitized' nose, go to an outside spigot—one that the raw, untreated water flows from. Turn it on, let it run a few minutes, then smell it. If it smells —we found it. If not, we must look further. (Many, many smells are not in the raw water at all, they are introduced into the water inside the house.) Go to a cold, treated water spigot inside the house, turn it on

and let it run a minute; then smell. If this water smells, and the outside, untreated water didn't—you must have a device (cartridge filter, water softener, etc.) in the water line that needs to be cleaned and sanitized. If it is a cartridge, or "string" filter, replace the element and sanitize the housing. If you have a water conditioner call the Company where you bought the unit for advise on how to sanitize the unit.

If the cold, treated water inside didn't smell, turn on the hot water and let it run a few minutes—does it smell? If it does, chances are you have a sacrificial anode inside your hot water heater that is "coming apart at the seams" and throwing off a "rotten" egg odor. This obnoxious smell will drive you right out of your shower!

OK, it is my raw water that smells– Now what?

First you must determine what is causing the smell, and how strong it is.

Minor, Musty Smell

If it is a minor, or low-level smell, you MIGHT be able to solve it with a small, point-of-use Triangular Wave Counter Top or Under-Counter filter (filter media to be determined). You can place these filters on the water line going to the cold water where you draw you drinking water. Or, you might solve it with a ***Triangular Wave Whole House All-In-One System*** on your incoming water line to filter all of the water inside your home.

Double Unit Under-Counter Water Filter System–Ideal for Kitchens, Bathrooms

Counter Top Filter System

MD All-In-One Multi-Process Fluid Management System

Strong, Rotten-Egg Smell

Strong, rotten-egg odors in the raw water are usually the result of the decomposition of underground organic deposits. As water is drawn to the surface, hydrogen sulfide gas can be released to the atmosphere. In strong concentrations, this gas is flammable and poisonous. It rapidly tarnishes silver, turning it black. In sufficient quantities it is toxic to aquarium fish. As little as 0.5 ppm hydrogen sulfide can be tasted in your drinking water.

Strong, Musty Smell

If you are unlucky enough to have this problem, you should consider the ***Triangular Wave Whole-House System or Big Blue Filters Housings with 20" Sediment Filter and a 20" Carbon Filter.***

Big Blue Filters

Filters

Installation of a ***Triangular Wave Whole-House filter with Sediment, KDF and/or granular activated carbon media*** is often successful for hydrogen sulfide removal.The copper in the KDF media reacts with the hydrogen sulfide to form copper sulfide and water. The copper sulfide is insoluble in water and can be backwashed out of the Whole-House Filter. While other filter systems are available, they typically must be recharged with chlorine or potassium permanganate. The removal capacities of these types of filters are usually fairly low, and must be sized to contain enough media to prevent premature exhaustion, and subsequent passage of the smell to service. It is also typical that the amount of hydrogen sulfide can fluctuate rapidly, causing great difficulty in sizing the unit. In addition, potassium permanganate is extremely 'messy', and will leave stains that are very difficult to remove.

Whole House Filtration System

Rust staining in bathroom and fouling expensive appliances? Water that Stains

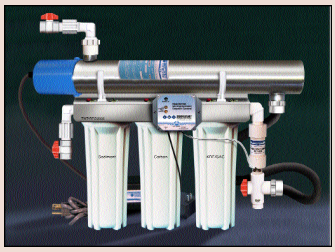
I have red stains in my sinks and other fixtures - Help! Red stains are normally caused by iron in the water. You must test to determine the amount and the type of iron you have. Some types are: oxidized, soluble, colloidal, bacteria or organic-bound. All are problems! It only takes 0.3 ppm to stain clothes, fixtures, etc.

Rust Erase Chemical-Free Iron Filtration

Take Control Over the Quality of Your Water

■ Oxidized

This type of iron is usually found in a surface water supply. This is water that contains red particles when first drawn from the tap. The easiest way to remove this type of iron is by a Triangular Wave Deposit Control System in combination with a fine mechanical filter or iron removal filtration system. A cartridge type filter is usually not a good solution, due to the rapid plugging of the element. The Triangular Wave Deposit Control System will help the filter function better. Another method or removal is by feeding a chemical into the water to cause the little particles of iron to clump together, and then fall to the bottom of a holding tank, where they can be flushed away.



Point-of-Use Potable Water Treatment & Conditioning System

Point-of-Use / Point-of-Entry Treatment System

■ Soluble

Soluble iron is called "clear water" iron. After being drawn from the well and contacting the air, the iron oxidizes, or "rusts", forming reddish brown particles in the water. Depending on the amount of iron in the water, you may solve this problem with a ***Triangular Wave Deposit Control System and a KDF/Carbon Filter***. The Triangular Wave system conditions the iron particles and keeps them suspended in the water. The KDF media alloys function as catalysts to change soluble ferrous cations (positively-charged ions) into insoluble ferric hydroxide, which can be removed with regular backwashing.

TWT Patented Deposit Control Technology

Dual Filtration Media

With enough oxygen dissolved in the water, iron removal rates of 98 percent or better are common. You also may use an iron filter that recharges with chlorine or potassium permanganate, or feed chemicals to oxidize the iron and then filter it with a mechanical filter. You can sometimes hide the effects of soluble iron by adding chemicals that, in effect, coat the iron in the water and prevent it from reaching oxygen and oxidizing.

■ Colloidal

Colloidal iron is very small particles of oxidized iron suspended in the water. They are usually bound together with other substances. They resist agglomeration, i.e., the combining of like substances forming larger, heavier, more filterable ones, due to the static electrical charge they carry. This iron looks more like a color than particles when held up in a clear glass, as they are so small. There are usually two treatment options: Feed chlorine to oxidize the organic away from the iron, thus allowing agglomeration to occur, or, feed in polymers that attract the static charge on the particles, forming larger clumps of matter that is filterable.

■ Potentially harmful bacteria in your water?

Iron bacteria are living organisms that feed on the iron found in the water, pipes, fittings, etc. They build slime all along the water flow path. Occasionally, the slimy growths break free, causing extremely discolored water. If a large slug breaks loose, it can pass through to the point of use, plugging fixtures. These types of bacteria are becoming more common throughout the United States. If you suspect bacteria iron, look for a reddish or green slime buildup in your toilet flush tank. To confirm your suspicions, gather a sample of this slime and take it to your local health department, or water department for observation under the microscope.

This type of iron problem can be treated with a combination of a ***Triangular Wave Deposit Control System*** and a ***Triangular Wave Ultraviolet Disinfection System***. You must kill the bacteria, using the UV disinfection system where the water enters the building. ***The Triangular Wave Deposit Control System*** will condition the water and the conditioned water will dissolve, over time, the slime coating on the pipe walls. The combined deposit control/ UV system will work continuously to prevent regrowth. A filter alone will not solve this problem.

TWT All-In-One Multi-Process Fluid Management System–The Ultimate in Water Treatment and Conditioning

Do You Have Effective Water Treatment

P.O.E. Point-of-Entry • P.O.U. Point-of-Use

Organic Bound

When iron combines with tannins and other organics, complexes are formed that cannot be removed by ion exchange or oxidizing filters. This iron may be mistaken for colloidal iron. Test for tannins; if they are present, they are most likely combined with the iron. Low level amounts of this pest can be removed by use of a combination ***Triangular Wave Deposit Control System*** and ***KDF/Carbon*** filter, which absorbs the complex. You must replace the carbon bed when it becomes saturated. Higher amounts require feeding ozone or chlorine to oxidize the organics to break apart from the iron and cause both to precipitate into filterable particles.

Deposit Control Technology

Big Blue Filtration System

Have blue or green stains on my fixtures- Help!

You either have copper in your water supply, or you have copper pipes and corrosive water. Test for copper in your water. Test the pH, total dissolved solids content and the oxygen content of your water.

Copper

Copper can be removed by a Triangular Wave KDF/Carbon Filter. The removal rate is about the same as it is for iron.

Copper Pipes and Corrosive Water

If your pH is from 5 to 7, you may raise it by passing the water through a sacrificial media such as calcite (calcium carbonate). By sacrificing calcium carbonate into the water, the pH of the water will be increased and the corrosivity will be reduced. Be sure to install a ***Triangular Wave Deposit Control System*** downstream of the calcite to prevent calcium scale form forming on the pipes and water appliances. If the pH is below 5, you will need to chemicals in the water. If the corrosivity is caused by excess oxygen, the hot water will be much more corrosive than the cold. Treatment is by feeding polyphosphate or silicates to coat and protect the plumbing, or to aerate the water to release the excess oxygen.

TWT Deposit Control Technology

Toxic chemicals in your water?: Filters...What can they do?

There are many types of filters available in the market place today.We will try to group them by the method they use to filter water. Almost everyone has seen the ads for the filter that fits on the end of your kitchen sink or bathroom spigot.These filters usually use two basic types of filtration: a filter "pad" catches the large (usually over 25 micron in size) particles or “chunks”, and a small amount of carbon absorbs organic and/or chlorine. The ***Triangular Wave Slim-Line Shower Head Filter and Low-Flow Shower Head*** are specifically designed to incorporate the proper flow rate for removal of chlorine, sediments, and other pollutants. The main problem here is the flow rates at which they are expected to work. If you purchase this type of filter, make sure it has a way of limiting the rate at which water passes through it. Next comes the cartridge type filters.

Filtration Systems

Slim-Line Showerhead

Counter-Top

Double Under-Counter

Iron Removal

Big Blue Filters

Point-of-Use / Point-of-Entry Treatment System

The ***Triangular Wave Counter-Top and Under-the-Counter Filters*** are in this category. Most common are the 10 or 20 inch long filters. This type filter will usually have a removable housing, into which different types of "elements" can be placed. A sediment filter cartridge element can be manufactured to remove certain larger sized particles. Most elements for home use will indicate 10 or 20 micron and larger removal. More expensive elements, usually for industrial use, may indicate a particle size (in microns).

Remember, filters actually get better, or more effective, as they are used.The "junk" in the water collects on the surface of the filter and becomes a part of the filter as well. As it builds up, progressively smaller and smaller particles are trapped, but the flow rate through the filter slowly diminishes. The slowing of the flow rate can be a source of problems to water using appliances in your home.

If you use such a filter, regular changing of the filter element is very important. remember, all filters, carbon especially, trap organics that bacteria feed on, and as the water sits without moving, they can multiply rapidly. So always change the elements on a regular basis.

Selective Resins

A relative new comer to the market, are small filters that contain resins that only remove specific things from the water, such as Nitrates, Fluoride or Lead. technology is rapidly changing in this area. If you have a need for such a devise, you should ask for supporting test results from an independent testing lab to verify that the unit will perform as advertised. many states now have legislation that requires such data provided to you prior to purchase.

Deionization

Used mainly in labs, manufacturing processes, or for serious aquarium owners, DI filters are actually more complex than a filter. True filters, unlike the selective resin and DI units, work on a mechanical basis — they just 'catch' the particles that are too large to fit through the spaces between the filter media.

DI works by ion exchange, just like a water softener. Just as a water softener exchanges sodium for hardness minerals, a DI unit will have two types of resin in it: Cation and Anion. Basically, the Cation resin (like in a water softener) removes the ions with a positive charge, while the Anion resin removes those ions with a negative charge. Instead of using salt as a regenerant, acid and caustic are used. Some small DI cartridges are sold as "throw-always", others can be returned for regeneration and reuse. These small units can treat only small amounts of raw, city water. Usually, it is much more economical to pretreat the water feeding a DI system with the reverse osmosis system.

One thing you must watch out for is VOC's (volatile organic chemicals). These chemicals have a lower boiling point than water (like benzene), and can vaporize and mix with the steam, carrying over into the product water. Some stills today have a volatile gas vent — a small hole at the top of the condensing coil that allows the venting of such substances. Many distillers have a carbon filter to "polish" the product water before use and to remove any VOC's that may carry over.

The energy used to treat a gallon of water is usually about 3,000 watts, or about 25 cents per gallon (average) in the US. This treatment method requires that you "plan ahead" and make and store water for use, which makes it somewhat less appealing.The more elaborate units will make and store water automatically, but raise the initial investment and maintenance of the equipment.

Reverse Osmosis

This is a process that is often described as filtration, but it is far more complex than that. We sometimes explain it as a filter, because it is much easier to visualize using those terms. We should remember that osmosis is how we feed each cell in our bodies — As our blood is carried into the smallest of capillaries in our bodies, nutrients actually pass through the cell wall to sustain its' life. Reverse osmosis is just the opposite: We take water with "nutrients" (in this case, junk) in it, and apply pressure to it against a certain type of membrane, and, presto — out comes "clean" water.

Residential Reverse Osmosis Systems

Lets review the basics. If you take a jar of water and place a semi-permeable membrane (like a cell wall or a piece of skin) in it, dividing the jar into two sections, then place water in both sides to an equal level, nothing happens. But, if you place salt (or other such substance) into one side of the jar, you will notice that, after awhile, the water level in the salty side begins to rise higher as the unsalted side lowers. This is osmotic pressure at work.

The two solutions will continue to try to reach the same level of salt in each side by the unsalted water passing through the membrane to dilute the salty water. This will continue until the "head" pressure of the salt water overcomes the osmotic pressure created by the differences in the two solutions.

On the other hand, researchers have discovered that if we take that membrane and feed water with sufficient pressure to overcome the osmotic pressure of the two waters, we can "manufacture" clean water on the side of the membrane that has no pressure. We sometimes say we "filter" the water through the membrane. Depending on the membrane design, and the material it is made from, the amount of TDS (total dissolved solids) reduction will range from 80 to over 95 per cent. Different minerals have different rejection

rates, for instance, the removal rate for a sample membrane is 99.5% for Barium and Radium 226/228; but only 85.9% for Fluoride and 94.0% for mercury. Removal rates are very dependent on feed water pressures, and some membranes are not tolerant to high or low pH.

For home use, it is important to make sure you get a ***Triangular Wave Deposit Control System***, a sediment pre-filter, a KDF/Carbon pre-filter, membrane, storage tank and post carbon filter, and consider an RO system, as well. Some of these filters may be combined into one, e.g., the prefilter may be both a particulate and carbon. The deposit control system will increase the efficiency of the filters and RO unit and protect the RO membrane from scale deposits. The results are longer membrane life and more efficient filter action.

Big Blue Filtration System

A lot of comments have been made concerning the "wasting" of water by an RO. True, the old style units with the early type membranes were more prone to becoming plugged, or fouled by the "junk" they removed from the water. To help keep this from happening, a small amount of water was allowed to run across the membrane to help carry away those impurities to drain. Early designs only recovered 1 gallon of good water for every 4-8 gallons used to keep the membrane clean.

Even worse, when the storage tank was full, water still ran to the drain because the early membranes were made of a material that the little bugs in your water supply (no, not pathogens, or dangerous to you in small numbers) loved to eat! So to prevent that, we just let the water run so they couldn't have time to stop and eat.

Now, ***Triangular Wave Deposit Control Systems*** condition the water and keep the "bugs" suspended in the water and away from the membranes. In addition, membranes are made to not only recover a much higher percentage of the feedwater, but the bugs don't eat them! Newer systems not only recover more, they can have a shut off device that stops all water flow when the storage tank is full.

A. Deposit Control Systems:

B. Factory Wrapped Wire Coil Reaction Chambers:

C. Copper Pipe Signal Enhancer:

Actual recovery rate is dependent on several factors, including the TDS, and just of what the TDS is composed, in your feedwater. Temperature and pressure also have a big effect on the amount of product water you can make in a given period. Remember, all RO units are normally rated using a feedwater temperature of 77˚ degrees F — is your feed water temperature that high?

Water Testing Information: When should I test?

Several factors will influence when and how often you test your water.

- **Where do you get your water from?**
- **Has that source changed?**
- **Have you done any plumbing changes lately?**
- **Is there reason to believe that your water is contaminated?**
- **Is there a sickness or illness in your family affecting more than one person and over a longer than normal time period?**

If you receive your water from a "public supply", i.e., a municipal supply, or a supply that provides water to more than 25 persons for 60 days per year (some states are different - check with YOUR local water department), you can be fairly certain that the water supply is checked on a regular basis. The frequency of the testing is based on the number of people served, and may vary from more than once per week to once per month, or even less.

Under these conditions, test when you move into a new residence to acquire a 'base line' of contaminant level, if any. Retest every three years, unless you have reason to believe that something has changed that could affect the quality of your water. If you have a private well, you are the only person who is responsible for the water your family drinks and bathes in. We recommend testing by your local Health Department every six months for Bacteria and Nitrate. These two tests serve as indicators for other types of contaminations — that is not to say forget the other tests; just that if you get a 'bad' test from them, you should also retest for the other types of contaminants as well.

Private wells should be tested on a regular basis for Pesticides, Herbicides, Metals, Organic and Inorganic chemicals and volatiles. Currently, no laws govern the frequency of such testing — ***that is why we say YOU are the only person responsible for your family's water.*** We recommend an initial test (for a base line), and then follow up testing at least once per year. Remember, one day after testing and finding "no contaminants", your source could become contaminated.

Bacteria Reduction–Not Just a System, It's The Solution

P.O.E. Point-of-Entry • P.O.U. Point-of-Use

What should I test for?: Coliform Bacteria

Coliform bacteria are a group of microorganisms that are normally found in the intestinal tract of humans and other warm blooded animals, and in surface water. The presence of these organisms in drinking water suggest contamination from a surface or shallow subsurface source such as cesspool leakage, barnyard runoff or other source. The presence of these bacteria indicate that disease-causing (pathogenic) organisms may enter the drinking water supply in the same manner if preventive action is not taken. Drinking water should be free of coliforms. ***Triangular Wave UV Disinfection Systems kills at least 99.9% of bacteria, cysts, and viruses.***

UV Disinfection/Purification Systems

UVC Series Disinfection/ Purification Systems

Cysts and Viruses

Cysts and viruses are microbiological contaminants, usually found in surface water supplies. Giardia lamblia cysts can cause giardiasis, a gastrointestinal disease. Another "bug" getting a lot of attention lately, is cryptosporidium, single-cell parasite measuring about 2 - 5 microns in diameter. Many surface water supplies contain this pest, which also comes from the intestine of warm blooded animals.

Nitrates

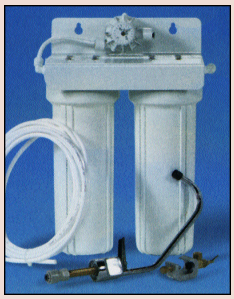
Nitrates in drinking water supplies may reduce the oxygen carrying capacity of the blood (cyanosis) if ingested in sufficient amounts by infants under 6 months of age. This could causes a disease called "methemoglobinemia", or "blue baby" syndrome. The EPA has established a maximum contaminant level (MCL) for nitrate at 10 mg/l (ppm) measured as N. Unlike coliform or other types of bacteria, boiling the water will actually INCREASE the amount of nitrates remaining in the water, thus increasing the danger to infants. If you have high nitrate water, either treat it with an approved treatment methodology or find another source. Boiling will only make it worse!

Lead

Lead is now known to leach from older sweat joints in copper pipe. As the water sits in the pipes, small amounts of lead dissolved into the water, contaminating it. Lead is particularly harmful to small children as they more rapidly absorb the toxic substance into their systems. The EPA has estimated that more than 40 million U.S. residents use water that contains more than the recommended levels. **A Triangular Wave Counter Top or Under-the-Counter point-of-use water filter with KDF and activated carbon** will remove lead and other heavy metals from the water.

Point-of-Use Potable Water Treatment & Conditioning System

Counter-Top



Double Under-Counter

Under-Counter Filtration with Ultra Violet Disinfection

Point-of-Use / Point-of-Entry Treatment System

Mini-Zap Portable Counter Top UV Filter System is the Perfect on Demand Water Treatment Solution For Use at Home and When You Travel to far Away Lands.

TWT® Chemical-Free Fluid Management Solutions–Pool/Spa

P.O.E. Point-of-Entry • P.O.U. Point-of-Use

www.triangularwave.com

■ Concerns about the level of chlorine / fluoride in your Pool/Spa Water?

Reduce or eliminate the use of chlorine–
Sparkling Clear Algae-Free Water for Pools & Spas

Easy on the Eyes

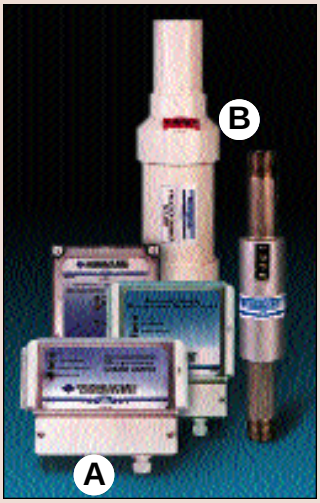
Gain peace of mind with TWT Enhanced Control Pool Management Systems, the chemical-free, safe and easy way to enjoy your pool and spa season! Your backyard or indoor pool is a place for relaxation. Everyone wants to avoid problems with their pool, and also with the effects of handling, storing, and swimming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

- **Reduce the need for chlorine and get the same results with TWT chemical-free treatment & conditioning systems**
- **Protect the investment in your pool/spa from the harsh effects of chemicals**
- **Enhance water quality, andimprove operating efficiency and equipment life cycle**

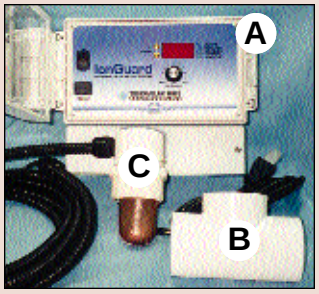
Reduces the need for chlorine– Patented Deposit Control Technology–



A. Deposit Control Systems: Controls mineral and biological deposits, as well as corrosion in all fluid-based systems.

B. Factory Wrapped Wire Coil Reaction Chambers: To use in conjunction with the TWT Deposit Control Systems to address magnetic pipe environments.

IonGaurd Ionization/Disinfection System



A. IonGuard Controllers: IonGuard disinfection system disinfects 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 the water systems. The TWT IonGuard Purification system releases controlled amounts of copper/silver ions unto the water to kill algae, biofilm, fungi and other microorganisms.

B. IonGuard Electrode installation Kits

C. Replacement Electrodes

Ultra Violet Technology

Ultra Violet disinfection & purification technology provides safe pool/spa water free of disease-causing pathogens

UV Disinfection/Purification Systems

UVC Series Disinfection/ Purification Systems

Drink, Bathe and Cook with Pristine "Chlorine-Free" Water

■ Need to Enhance Water Quality, and Improve Operating Efficiency and Life Cycle of Vertical Hot Water Heater/Boiler Systems

Control Scale Deposits Bio-film • Corrosion Algae and Colloids In Your Fluid-Fed Equipment

The build up of scale deposits is a common and costly problem in Hot Water Heaters and Boilers in the residential, commercial environments. The higher costs of maintaining and cleaning heaters and boilers can be attributed to the continuous cleaning of scaled surfaces or to the increased energy and operating costs due to the poor conductivity of the fluid pipe. For example, a 2.0 mm scale layer can induce a 47% decrease in overall heat transfer. Moreover, scale deposits narrow the inner diameter of piping, increasing the amount of energy required to pump the water through the system.

- **Removes Existing Scale on Heat Exchangers Over Time, Which Improves Heat Transfer for Greater Efficiency**
- **Eliminates Deposits in Pipes, and Fixtures**
- **Controls Scale and Bio-fouling in Water Fed Appliances**
- **Reduces Equipment Replacement & Downtime**

■ Suffering from the scaling effects of hard water? *Solution*

If your water tests over 1 GPG hardness, you should condition it with a ***Triangular Wave Deposit Control System***. The Triangular Wave System for neutralizing hardness and preventing the formation of lime deposits uses an electronic deposit controller; no salt or other chemicals are added to the water.

A. Deposit Control Systems:
Controls mineral and biological deposits, as well as corrosion in all fluid-based systems.

B. Factory Wrapped Wire Coil Reaction Chambers:
To use in conjunction with the TWT Deposit Control Systems to address magnetic pipe environments.

C. Copper Pipe Signal Enhancer:
The copper pipe signal enhancer must be used in all copper pipe applications to maximize the performance, and provide a boost to your application.

REQUEST A QUOTE OR SEEK TECHNICAL INFORMATION

- **Dose your water smell bad?**
- **Do you have multiple concerns about the quality of your water?**
- **Are you uncertain about the quality of your water?**
- **Well water users: are you choosing the right solutions?**

The good news is, there is something you can do to solve all of the problems you may encounter with your water

REQUEST A QUOTE FOR WATER & FLUID TREATMENT ON THE TWT WEBSITE HOME PAGE–NO MATTER HOW TOUGH THE JOB... TWT IS THE SOLUTION

You may fill in this form on line and submit it to us as per below, or you may print it, fill it in, and fax it to us at (201) 573-8710. Please note that all fields marked with (*) must be filled, in order to receive a response. If you have trouble submitting this form via the Submit button at the top of this form, please send an e-mail to info@triangularwave.com with your contact information

TWT is happy to provide this on-line quote and information request form to make your evaluation and purchase process as streamlined as possible. Your complete system quote and/or additional information will be provided to you by either TWT or an authorized TWT dealer or distributor, via e-mail (or fax, if requested) Please feel free to call us with any questions.

For additional technical and product information visit us at
WWW.TRIANGULARWAVE.COM

Triangular Wave Technologies Products and Systems Features & Benefits– *Prevents Scale Build-up Throughout the Fluid System*

Advanced, microprocessor-driven deposit control systems for residential, commercial and industrial environments.

Triangular Wave 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 biofouling 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. Each product line offers a variety of both standalone and comprehensive treatment solutions for end-to-end fluid management, for all types of applications.

The Triangular Wave Deposit Control System uses a Current Source as the drive circuit to the pipe solenoid. A Current Source is the most reliable and strongest conditioning signal over a wide frequency range. Most waters have qualities that vary over time. Higher total dissolved solid concentration will cause greater impedance in the system. The TWT system, with a Current Source generator is able to sense the increased impedance and maintain the strong conditioning.

In effect, 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.

Salt and chemical-free water conditioning for any application

■ Prevents Scale Build-Up

- Scale particles in the water receive an enhanced surface charge that causes them to repel each other and from the walls of the equipment

■ Eliminates Toxic Chemicals

- No recurring chemical expense
- No handling and storage of hazardous chemicals on site
- No chemical discharge

■ Reduces Corrosion

- Reduces bio-corrosion by preventing the formation of bio-growth on vessel surfaces where bacteria can attack the metal
- With higher concentration ratios and TDS, the pH will be higher and there will be much less tendency for corrosion
- Prolongs life cycle of equipment
- Increased cycles of concentration in cooling systems=***significant water savings***

■ Controls Algae and Bacteria

- Bacteria and algae must attach to something before they can feed and reproduce.The Triangular Wave System keeps the bacteria, algae, and their food dispersed in the water, off of surfaces, and away from their biofilm breeding ground
- Eventually the biofilm will die, too
- Improve the operating efficiency and life cycle of process infrastructure and equipment **SHORT PAYBACK PERIOD**
- The combined reduction of water, chemical and energy costs is enough to pay for the Triangular Wave System in as little as 9 to 18 months
- With the Triangular Wave Treatment, the systems can run at higher concentration ratios, meaning the amount of water removed as blowdown and the corresponding sewer charges are greatly reduced.

TWT treatment equipment is a reusable investment and retains its value – if you move your facility or reengineer your plumbing system, TWT equipment moves with you.

- With no chemicals being added, the requirements for pretreatment of blow down are eliminated
- One time cost vs. recurring monthly chemical= ***better profit margin***
- Labor costs for maintaining the systems will be reduced
- Labor costs to clean the vessel surfaces will be reduced
- Costs to replace corroded parts like heat exchanger tube bundles, etc. will be reduced.
- Less downtime for equipment repairs an maintenance=***increased production***
- The Triangular Wave System requires little or no maintenance
- There is little electrical current flow through the electromagnetic system
- Reduces energy costs use through improved heat transfer efficiency
- Increased heat transfer from non-scaled tube surfaces=***significant energy savings***
- Easy interface with facility management hardware and software systems for centralized management

Benefits for Cooling & Heating Applications

The constant battle of monitoring cooling and heating systems will become a thing of the past. Balancing the water chemistry on a daily or weekly basis is not necessary with the Triangular Wave System. Cleaning of the systems will be much easier, involving a pressure wash one or two times per year, rather than extensive manual brushing and acid washing.When water systems are clean and free of deposits, heat transfer is at its most efficient. Scale and biofilm are great insulators, that are eliminated. Also scale buildup in pipes creates increased roughness and reduced flow area. Clean pipes mean less energy is needed to drive the pumps.

Energy costs may be reduced by up to 30%. Many municipal sewer agencies penalize and charge fees to users, because their blowdown contains hazardous chemicals, which the agencies must treat.Without chemicals in the blowdown, those fees can be avoided.

Unpolluted discharge from blowdown and bleed= environmental compliance. The workplace is safer, because the staff is not handling toxic chemicals.

Cooling and heating systems are large investments that need to be protected.The Triangular Wave System reduces corrosion, deposits, and harmful chemicals, all of which allow the equipment to meet or exceed life cycle expectations. Recent studies by manufacturers of cooling systems indicate that systems that should last 20 years or more are lasting an average of 8 to 12 years

Treatment for Existing & New Equipment

Installed along with new and existing equipment to improve its operating efficiency and life cycle. TWT Deposit Control Systems enhance other treat ment technologies as well, including chemicals, separators, ozone, ultraviolet, and other filtration systems, keeping them clean and enhancing their operation. In this way, their full treat ment benefits are realized, with reduced maintenance.

Energy Savings Mechanism

The primary energy savings result from a decrease in energy consumption in heating or cooling applications. This savings is associated with the prevention or removal of scale build-up on a heat exchange surface where even a thin film (1/32" or 0.8 mm) can increase energy consumption by nearly 10%. Examples of savings resulting from the removal of calcium-magnesium scales are shown in ***table***. A secondary energy savings can be attributed to reducing the pump load, or system pressure, required to move the water through scale-free, unrestricted piping.

Scale Thickness (inches)	Increase Energy Consumption (%)
1/32	8.5
1/16	12.4
1/8	25.0
1/4	40.0

Example Increase in Energy Consumption as a Function of Scale Thickness

Specializing in:

- Chemical-Free Deposit Control Products & Systems
- Improving Operating Efficiency & Life Cycle of Equipment
- Control Scale Deposits/Bacteria/Corrosion/Algae and Colloids in Pipes,Fixtures and Equipment
- Ultraviolet Disinfection Systems /Ionization Purification Systems
- Pre & Post Water Filtration Products
- Custom System Design & Integration To Create Solutions For Your Own Industry-Specific Situation
- Value Added & Retrofit Programs
- Energy & Water Savings

Applications: *Commercial • Industrial • Residential*

- Cooling Towers • Heat Exchangers • Condensers & Chillers
- Food Processing Equipment • Swimming Pools & Spas
- Manufacturing Processing Equipment • Agriculture • Laundry
- Boilers/Water Heaters • Small Water-Fed Appliances
- Residential/Office Plumbing • Spray Systems
- Medical/Dental Laboratory • Car Wash
- And All Other Water And Fluid-Based Industries

TWT®is your simple and safe solution! Hard water problems solved easily

- Reduces Soap Scum and Improves Lather of Soap
- Reduces Detergent and Soap Use
- Reduces Effects of Hard Water on Skin and Clothes
- Removes Existing Scale on Heat Exchangers Over Time, Which Improves Heat Transfer for Greater Efficiency
- Control Scale and Bio-fouling in all Hot Water Heaters
- Non-Polluting / Environmentally Safe
- Performance Durability and Guaranteed
- Cost Effective (pays for itself)

The Triangular Wave System gives owners the positive benefits of soft water without the harmful salts

- Eliminate toxic chemicals & salts
- No recurring chemical expenses
- No handling and storage of hazardous chemicals on site
- No hazardous salt contamination

Improve the quality and taste of water at home,office, farm...
Why spend hundreds of dollars for bottled water?
Do you really want to carry, lift and store bottled water?

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 at: Email info@triangularwave.com who will be pleased to work closely with you to determine the optimal application and installation for your industry specific needs.

TWT has extensive design, engineering, manufacturing, consulting and training ability to work with customers worldwide, and to use its products and/or systems in whole or component form, as a component assembly, or as an accessory to their primary product. Take advantage of our outstanding manufacturing and marketing expertise — let TWT custom design a product and/or system to meet your specific application, system integration, and/or retro-fit program needs.

Our unique capabilities and custom design expertise have and continue to successfully solve a wide variety of problems for a wide variety of customers (Commercial • Industrial • Residential).

- *FROM IDEAS TO FINAL PRODUCTION*
- *EFFICIENT ENGINEERING DESIGN TEAM*
- *STATE -OF-THE-ART PRODUCTION EQUIPMENT AND FACILITY TO MEET THE EVER CHALLENGING PRODUCTION REQUIREMENTS*
- *TECHNICAL AND TEST DEPARTMENT WITH OUTSTANDING QUALITY CONTROL GUARANTEED*
- *COST EFFECTIVE AND DELIVERED ON TIME*
- *IN ORDER TO ENSURE THE GREATEST LEVEL OF PERFORMANCE AND SATISFACTION IN YOUR WORK WITH TWT PRODUCTS AND SYSTEMS, WE RECOMMEND THAT YOU CONTACT OUR ENGINEERING STAFF, WHO WILL BE PLEASED TO WORK CLOSELY WITH YOU TO DETERMINE THE OPTIMAL INSTALLATION FOR YOUR INDUSTRY SPECIFIC NEEDS.*

REVIEW SOME OF THE FEATURED CUSTOM DESIGN PRODUCTS, SYSTEMS, APPLICATIONS AND INSTALLATIONS FOR SOME OF OUR INDUSTRY SPECIFIC CUSTOMERS WORLDWIDE

Sensing Environmental Needs with Intelligent Solutions

www.triangularwave.com

TWT, Inc. is focused on providing a complete selection of top quality water treatment, purification and conditioning solutions to discriminating consumers who demand the very best in water quality. Our mission is to provide you, the consumer, with direct access to premium water treatment technology solutions for you in your residential, Industrial and commercial applications

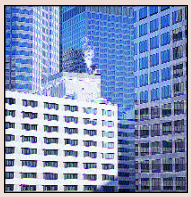
TWT,Inc. offers a full range of products & systems designed to address fluid problems wherever fluid flows. From patented deposit control technology to pre and post filtration, ionization, iron removal, disinfection, and ultraviolet purification treatment and conditioning, TWT has the versatile, efficient, cost-effective methods to solve your fluid management problems end to end.

- **Controls scale, bio-film & corrosion**
- **Enhance operating efficiency & life cycle of equipment**
- **Saves water & energy**
- **Protection for new equipment: TWT provides new equipment with the ability to enhance it's features and benefit**
- **Treatment for existing equipment: Retrofit existing equip ment to improve its operating**
- **Power/Current source available in your part of the world.**

LOOKING FOR A CUSTOM SYSTEM SPECIFICATION?

- **Regardless of the size of your home/facility, or your budget, TWT has the right water treatment products at the right price that will enable you to get the quality water you deserve**
- **For clients managing a household or office who are looking for a custom system tailored to a specific set of requirements, TWT offers a FREE CUSTOM SYSTEM SPECIFICATION. Designing and implementing custom integrated "All-in-One" systems is one of our specialties, so if you are looking for a comprehensive custom water treatment solution for your home/office and facility, you have come to the right place.**
- **For clients with moderate water usage requirements, TWT can guide you in selecting the right combination of Point-of-Use products (Counter Top, Under Counter, Shower Heads)… to ensure that all of the water you drink, wash with and cook with is safe for your consumption.**

Chemical-Free Fluid Management Products & Systems To Enhance Water Quality, and Improve Operating Efficiency and Equipment Life Cycle







Versatile Products & Systems To Effectively Meet The Needs Of Any Industry & Application
• Control Scale Deposits • Bacteria • Corrosion • Algae • Colloids In All Fluid Based Systems

Water The Way Nature Intended It!
Chemical-Free

SATISFACTION GUARANTEED

CONTAMINANT PROBABLE HEALTH EFFECTS*

- Arsenic -- Malignant tumors of skin and lungs, cramps, spasms, effects to nervous system
- Barium -- Prolonged stimulant action on muscles, nerve block
- Benzene -- Cancer, leukemia, anemia
- Cadmium -- Bronchitis, anemia, gastrointestinal upsets, cancer in rats
- Carbon tetrachloride -- Central nervous system depression, gastrointestinal effects, liver and kidney damage, coma, death
- Chlordane -- Carcinogen, liver and kidney damage
- Chlorobenzene -- Irritation to respiratory system, central nervous system depression
- Chloroform -- Possible liver, kidney and heart effects; carcinogenic in at least one animal species
- Chromium -- Kidney damage, cancer
- Copper -- Gastrointestinal tract irritant, possible infant fatality, Wilson's disease
- Dichlorobenzene(s) -- Suspected carcinogen
- 1,1-Dichloroethane -- Central nervous system depression, liver damage, suggested animal carcinogen
- 1,2-Dichloroethane -- Nausea, mental confusion, liver and kidney damage
- Dichloroethylene -- Nausea, dizziness
- Ethylenedibromide (EDS) -- Decreased fertility
- Fluoride -- Skeletal damage when present in high levels
- Heptachlor -- Possible tumor induction, carcinogenic in test animals
- Lead --Damage to nervous system, kidneys, reproductive system; cancer in rats
- Lindane -- Chronic liver damage, anemia, leukemia
- Mercury -- Kidney impairment, possible death
- Methylene chloride -- Toxic
- Nickel -- Signs of hyperglycemia and gastrointestinal and nervous disorders
- Pentachlorophenol (PCP) -- Loss of appetite, respiratory difficulties, anesthesia, coma, death
- PCBs--Damage to skin and liver; nausea, loss of weight, jaundice, coma, death
- Selenium -- Carcinogen; irritation to mucous membranes, dermatitis
- Sulfate -- Laxative action
- Tetrachloroethylene -- Central nervous system effects; confirmed animal carcinogen, anesthesia, death
- Toluene -- Narcosis, irritation to eyes and respiratory system
- Toxaphene -- Possible liver damage
- 1,1,1-Trichloroethane -- Narcosis, depression of central nervous system, unconsciousness, death
- 1,1,2-Trichloroethane -- Possible liver and kidney effects, possible carcinogen in animals
- Trichloroethylene -- Central nervous system depression, loss of coordination, unconsciousness strong irritant and carcinogen
- 2,4,6-Trichloropheno -- Suspected carcinogen
- Trihalomethanes (THMs) -- Effects to nervous system and muscles, loss of consciousness
- Vinyl chloride -- Central nervous system depression, dulling of visual and auditory responses, possible death
- Xylene -- Mucous membrane irritant, lung congestion, impairment of kidney functions
- Zinc -- Muscular stiffness and pain, loss of appetite, nausea

* The Assembly Office of Research, April 12, 1983, states that the health effects listed for these substances were compiled from the following sources:

"Drinking Water and Health", National Academy of Sciences, Safe Drinking Water Committee, 1977,

"Contamination of Ground Water by Toxic Organic Chemicals", U.S. Council on Environmental Quality, 1981

"Carcinogenic Hazards of Organic Chemicals in Drinking Water", R.H. Harris, T. Page, and N.A. Reiches, 1977

Environmental Protection Agency head Christie Whitman called water quantity & quality "the biggest environmental issue that we face in the 21st century"

U.S News & World Report, August 12th 2002

President Clinton asked the Environmental Protection Agency to reduce the acceptable levels of arsenic in our drinking water from 50 parts per billion to 10 parts per billion, effective January 2006.

The National Academy of Sciences report, indicates that even the Clinton standard was weak: As little as 3 ppb arsenic carries a far higher bladder and lung cancer risk than do other substances EPA *regulates.*

U.S News & World Report, August 12th 2002

"U.S. Industry...generates some 88 million pounds of toxic wastes a year, 90 percent of which, the EPA estimates, are improperly disposed

ABC Network News

The Future of Water – Costly, Dirty & Scarce

U.S News & World Report, August 12th 2002

"Several million Americans are drinking water that is potentially hazardous due to chemical or bacterial contamination" Newsweek

"Parasites in water are widespread... can be dangerous, even fatal, to people with weakened immune systems"

USA Today

"More than 1 in 5 Americans unknowingly drink tap water polluted with fecal, radiation or other contamination...nearly 1,000 deaths each year and at least 400,000 cases of waterborne illness may be attributed to contaminated water"

The New York Times

TWT chemical-free products and systems improve the quality of and taste of water, and the operating efficiency and life cycle of all fluid-fed equipment

- Give the benefits of soft water without adding salt or removing useful minerals.
- Prevent further hard scale buildup in and on water equipment and fixtures.
- Remove existing scale inside the water system.
- Soften the existing hard scale around taps, basins & toilets.
- Provides a much more environmentally friendly solution for hard water problems; no salts or chemicals.

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.

WHATS IN YOUR WATER? ARE YOU PREPARED?

D6

Suburban Water Testing Labs

Nationally recognized independent laboratory will give you the answer

YOUR GUIDE TO WATER TESTING (Free brochure available upon request)

WHY TEST YOUR WATER?

Although the testing approach may seem bothersome, it is like a good routine physical by a health-care specialist. Avoiding this step is to assume that "what you don't know won't hurt you." Sorry, but it will! Avoiding the truth may result in health problems and costly repairs to your plumbing system and other fluid fed equipment ***(protect your investment)***.

Water contamination can have a negative affect on water-fed equipment and on the health of your family. The affects may be immediate or long term and include everything from ruined equipment, stomach aches to serious long-term health problems.

A US Geological survey found that 70% of private wells were contaminated. The United States Environment Protection agency (USEPA) recommends that you test for a minimum of coliform bacteria, nitrate and lead, even if you have public water.

Periodically (yearly or as otherwise needed) Re-test and Evaluate Performance

Simply owning a water treatment system does not guarantee that your water will be safe forever. In addition to monitoring your system and providing for replacement of products and/or parts, you also need to periodically test and re-evaluate the quality of the water coming into and going out of your system to determine if changes and/or upgrades are needed. The ultimate responsibility is yours ***(know whats happening in your neighborhood)***.

Selecting a Treatment System for Your Needs (Residential, Commercial, Industrial).

A comprehensive approach to selecting a fluid treatment system includes:

- Testing your water or fluid to determine the specific problems in it and in your area
- Selecting the system and/or components of a system that will solve these problems
- Installing and monitoring your system **(retrofit or new)**
- Periodically re-testing to insure that you are maintaining the treatment system correctly and that your old problems are being treated and controlled, and that new problems have not developed.

TRIANGULAR WAVE TECHNOLOGIES, INC. RECOMMENDED TESTING PROCEDURE

Water testing can be a complicated process. However, working with Suburban Water Testing labs, or any lab in your area, they make it simple. they start by testing your water for most common indicators ofcontamination. If they find any indicators, they can recommend further testing to help identify a specific problem. Once the problem is identified, they recommend a way to fix the problem. (They do not sell water treatment or endorse one brand over another, they simply give you information so you can make an educated purchase)

Contact Suburban Water Testing Labs (1-800-433-6595 or www.h2otest.com)

1. **Mention "TWT010" to receive discount pricing**
2. **Discuss your water testing needs 0**
3. **Order Health Guard kit(s)**
4. **Kit(s) come complete with easy to follow instructions, including sample bottles**
5. **Take water samples following the easy to use instructions**
6. **Put the samples in the enclosed return shipping pack**
7. **When samples are received, at Suburban Water Testing Labs (SWTL) they analyze the samples and send you the report**
8. **A copy of the report will be sent to TWT, Inc. TWT engineering staff will review the report, TWT or your distributor will contact you to discuss the appropriate treatment products, systems and installation for your specific needs**

Why use Suburban Water Testing labs

Suburban Water Testing Labs is a nationally recognized, independent lab specializing in water testing since 1963. While other labs are mainly interested in large accounts, they take the time to help individual customers as well. The sampling packages are designed to be as easy to use as possible. The reports are designed to be understandable and they offer technical assistance to ALL of their customers.

Accurate Results– Their rigorous Quality Control Program ensures accurate results.

Reliability– Well trained laboratory technicians perform the analysis and verify the results. In home or facility testing cannot begin to provide results with a level of accuracy and reliability comparable to laboratory testing.

Safety– While certain in home or facility testing procedures exist, Water testing is best done in a laboratory. Suburban water testing labs have the proper facility, expertise, and equipment to perform these analysis in a safe manner.

What Should You Test For?

Water analysis must be done in steps; you have to determine what you want to test for, then test for it. As a starting point USEPA recommends that everyone, even people using public water test for a minimum of: ***Coliform Bacteria, Nitrate & Lead***

The Health Guard 2 package includes these contaminates as well as several other commonly found contaminats. If you are concerned about the safety of your water, you may want to test for more contaminats. If you have a specific problem or concern call the technical assistance line at 610-929-2920 and a laboratory technician will be pleased to work closely with you to determine the optimal Health Guard Kit for your specific needs.

Catalog

Packages:

Health Guard 1
Test for coliform bacteria, nitrate, nitrite, fluoride, chloride and sulfate.

Health Guard 2
Adds lead to the Health Guard1(satisfies the USEPA's minimum recommendations)

Health Guard 3
Adds 25 VOC's to the Health Guard 2

Health Guard Advanced
Tests for coliform bacteria, nitrate, nitrite, fluoride, chloride, sulfate, lead, 25VOC's, 10 Trace Metals, 24 chlorinated pesticides and 7 PCB's

Health Guard Lead
Simply tests for lead. Includes first draw and flushed line samples.

Add on Testing

Corrosion and Pretreatment
Tests for pH, hardness, iron, manganese, double copper.

Trace Metals
Tests for 10 toxic metals that the USEPA considers harmful.

Chlorinated Pesticides
Test for 24 chlorinated pesticides and 7 PCB's

Testing for pesticides is extremely complex and costly so they have included some of the more common contaminats. Please contact technical assistance if you have concerns about a specific pesticide or herbicide

Fecal Coliform and Fecal Streptococcus
Bacterial testing that helps identify sources of contamination

Other Health Guard kits, including MTBE testing are available upon request

Why use water treatment, filtration, disinfection, purification, products and systems provided by Triangular Wave Technologies, Inc. (TWT)

TWT is America's leading fluid/water treatment company based on its patented triangular waveform technology. TWT's chemical-free fluid treatment and management methods have been accepted for use around the world by governments, industry, and individuals, who all enjoy the increased safety, extended equipment life cycle, and decreased operating costs that the TWT systems deliver.

TWT 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. Each product line offers a variety of both standalone and comprehensive treatment solutions for end-to-end fluid management, for all types of applications.

Triangular Wave Deposit Control Systems offer all the positive effects of soft water, and clean up existing deposits, without the use of traditional salts and chemicals.

To learn more about Triangular Wave Technologies, Inc. visit our website at www.triangularwave.com

Contaminant Glossary (Partial List)

SWTL Certifications and Affiliations: • PADEP certificate#06208 • Member PaAAEL • Member AWWA

Chloride– Chloride may make your water taste salty and indicates contamination from an outside source such as salt storage, seawater, or septic waste.

Chlorinated Pesticides– Commonly used agricultural pesticides. Some people who drink water contaminated with these compounds could experience problems or damage to the eyes, liver, kidneys, or spleen and may have an increased risk of getting cancer.

Endosulfan Sulfate
Endrin
Endrin Aldehyde
Endrin Ketone
Heptachlor
Heptachlor Epoxide
Hexachlorobenzene
Hexachlorocyclopentadiene
Lindane (gamma-BHC)
Methoxychlor
Toxaphene
Arachlor
Aldrin
Atrazine
Alpha-BHC
Beta-BHC
Delta-BHC
Chlordane
p,p-DDD
p,p-DDE
p,p-DDT
Dieldrin
Endosulfan 1
Endosulfan 2

Coliform Bacteria–Indicates contamination from an unsanitary condition such as septic waste or surface water entering the water supply. Health effects include gastrointestinal illness, cryptosporidum and giardia lamblia.

Copper– Usually associated with the corrosion of copper pipes. can cause stomach or gastrointestinal illness, liver and kidney damage and anemia.

Fluoride– added to many municipal water supplies, also found naturally. Excessive levels may damage teeth.

Hardness– calcium and magnesium are the main hardness materials. Although hardness is not a health threat, excessive levels may be harmful to plumbing fixtures and pipes. While deposits around faucet's and on dishware are often caused by excessive hardness.

Iron– Usually comes from a natural source. High levels of iron may cause a bad taste in the water and cause severe staining of laundry and plumbing fixtures. Excessive iron can be a health risk to people with medical condition known as hemochromatosis.

Lead–Usually comes from corrosion of pipes and plumbing fixtures. causes numerous health disorders and reduced IQ scores. Our packages contain a double lead sample that includes a "first draw" and a "flushed line" sample. This helps to determine where the lead is coming from.

Nitrate – Comes from natural decay of organic matter and agricultural runoff. Nitrate causes decreased oxygen carrying capacity in infants and some adults. This can lead to methemoglobinemia (blue baby syndrome). Elevated levels of nitrate indicate possible contamination from agriculture and suggest the need for pesticide testing.

Nitrite– Similar to nitrate, however nitrite can cause decreased oxygen carrying capacity in anyone.

PCB's– Environmentally persistent compound that were used in electronic compounds and some pumps. They can cause an increased cancer risk.

Aroclor 1016
Aroclor 1221
Aroclor1232
Aroclor 1242
Aroclor 1248
Aroclor 1254
Aroclor1260

pH– Indicates weather water is acidic or basic. Acidic water can cause corrosion of plumbing and fixtures, which leads to elevated levels of metals such as lead and copper. High pH can cause scaling of the plumbing system.

Sulfate– Naturally occurring but can indicate contamination of the water supply. causes gastrointestinal discomfort in individuals who are not accustomed to drinking the water.

Trace Metals– Trace metals may come from industrial contamination or natural deposits.They can cause increased cancer risk, damage to organs and changes in blood chemistry.

Antimony
Arsenic
Barium
Berylium
Cadmium
Chromium
Mercury
Nickel
selenium
Thallium

VOC's– Compounds which are found in many household products, paints, petroleum products and industrial solvents. People who drink water containing theses compounds in excess of the MCL could experience damage to liver, kidneys, spleen, or circulatory system, or changes in the blood. There is also an increased risk of cancer associated with most of these compounds.

Benzene
Carbon tetrachloride
Chlorobenzene
O-Dichlorobenzene
P-Dichlorobenzene
1,2-Dichloroethane
1,1-Dichloroethylene
Cis-1,1-Dichloroethylene
Trans-1,2-Dichloroethylene
Dichloromethane
1,2-Dichloropropane
Ethylbenzene
Styrene
Tetrachloroethylene
1,2,4,-trichlorobenzene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
Toluene
Vinyl Chloride
Xylenes
Total Trihalomethanes

Suburban Water Testing Labs HealthGuard℠

TWT TRIANGULAR WAVE TECHNOLOGIES, INC. FLUID MANAGEMENT SOLUTIONS www.Triangularwave.Com

Email:info@triangularwave.com • triwaveinc@aol.com • Visit our web site:www.Triangularwave.com

Fluid Related Terms:

Colloid
Suspended particle in water that has an electrical surface charge.

TDS
Total Dissolved Solids. Example: Salt dissolved in water.

TSS
Total Suspended Solids. Example: Dirt and other material that are mixed in the water and make it appear cloudy.

Hardness
Measure of the calcium and magnesium that cause the water to be hard and deposit scale on the water system.

Concentration Ratio
Ratio of minerals in the water system compared to fresh water being added to the system.

Make Up Water
Source of the water to replace water lost to evaporation.

Blow Down
Water dumped because it has too many minerals in it [concentration ratio is too high].

Bleed
Another term for Blow Down.

Turbidity
Small particles suspended in water.

Condition Related Terms:

Corrosion
Deterioration of metal surfaces caused by water and chemicals in the water.

Bio-Corrosion
Deterioration of metal surfaces caused by acid by-products of bacteria.

Scale
Deposit of calcium carbonate.

Bio-Film
Slime formed by bacteria.

Vander Waals Attraction/Forces
Attractive forces that let colloids group together.

Reaction Zone
Place in the water system where the water goes through a physical or chemical change, and the deposition of scale or biofilm occurs.
Energy Related Terms:

Energy Related Terms:

Surface Charge
Ions attached to the surface of a colloid.

OHMS
Measures of electrical resistance.

Frequency
Measure of the number of times per second the electrical wave changes from positive to negative.

Amplitude
The strength or the height of the electrical wave.

Electromagnetic/ Inductive Field
Area of influence of solenoid.

Current/Amps
Measure of the movement of electricity through a conductor.

Voltage/Volts
Measure of the electromotive force needed to move electrical current through a resistance.

Polarity
The conditions of having opposite poles or charges. A water molecule has polarity because the oxygen side of the molecule is more negatively charged and the hydrogen side is more positively charged.

Ionization
Electronic water treatment in which an electrical current passes between two copper/silver metal electrodes and through the water between the electrodes. In the process copper and silver ions enter the water where they attach to algae (copper) and bacteria (silver)

Ultra Violet Light
Light from the ultraviolet range of the electromagnetic spectrum. Light of UV wave length is not visible to humans, but it disrupts the DNA of microorganisms.

Electrode
Metal piece connected to electrical current.

Testing/Measurement Related Terms:

Conductivity
Conductivity measures the ability of a solution to conduct an electric current between two electrodes. As it relates to cooling towers, pools & spa treatment.

Coupon Rack Testing
Used to measure corrosivity of the water in a system.

PH Level/Percentage Hydrogen
Measure of acidity or alkalinity of water.

Langlier Scale
Measure of the corrosivity of water.
Note: Lower pH=Acid=Corrosion
Higher pH=Base=Scale= Less Corrosion

Treatment Zone
Area in the water system where water is affected by the deposit control equipment.

Paddle Testing
Used to measure bacteria floating in the water.

ppm
An abbreviation for parts per million; units which express the concentration of contaminants in water. Commonly used interchangeably with mg/L.

Micron
1 Millionth of a meter

psi
An abbreviation for founds per square inch; the units in which we express pressure measurements.

psig
An abbreviation for pounds per square inch gage - Unit for expressing pressure. Commonly called gage pressure.

Micron rating
The term applied to a filter or filter medium to indicate the particle size above which all suspended solids will be removed throughout the rated capacity. As used in industry standards, this is an “absolute,” not “nominal” rating.

Nephelometric turbidity unit
(NTU) An arbitrary unit of measuring the turbidity in water by the light scattering effect of fine suspended particles in a light beam.

Nanometer
1 billionth of a meter

Product /Equipment Related Terms:

Cooling Tower
Unit used to cool water by blowing air through the water and causing evaporation.

Chiller
Unit that uses cooled refrigerant to cool air or water.

Evaporative Condenser
Cooling Tower and Condenser in one unit.

Condenser
Unit that uses cooled water to cool a refrigerant or process cooling fluid.

Heat Exchanger
Condenser or Chiller.

Boiler
Unit that heats water to get very hot water or steam.

Sump/Catch Basin
Tank that collects cooled water from a cooling tower.

KDF
High purity copper and zinc filings for filtration purposes.

Reaction Chamber
Factory built TWT solenoid coil on pipe for plumbing into water pipe.

Copper Signal Pipe Enhancer
This unit is placed between the controller and the copper pipe solenoid to provide a proper impedance match and to ensure maximum energy transfer between the controller and the solenoid, which ensures enhanced treatment of the fluid.

Chemistry Related Terms:

Hydrogen Bond
An essentially ionic chemical bond between a strongly electro negative atom and a hydrogen atom already bonded to another strongly electronegative atom. In the case of water the electronegative atoms are the oxygen atoms.

Molecules
A stable configuration of atomic nuclei and electrons bound together by electrostatic and electromagnetic forces to form a compound with unique physical and chemical properties.

Crystals
A three dimensional atomic, ionic or molecular structure, consisting of periodically repeated identically constituted congruent unit cells.

Calcium Carbonate [CaCO3]
A molecule of calcium carbon and oxygen. The carbon atom bonds with three oxygen atoms to form the carbonate ion.

Precipitate
To cause a solid substance to be separated from a solution.

Hydrate
To chemically combine with water.

Alumina
One of several forms of aluminum oxide. A compound found naturally in soil and rock.

Silica
A crystalline compound of silicon and oxygen. Sand is usually silica.

Nucleation Sites
Small particles that serve as starting points for crystals to form on.

Covalent Bonds
A chemical bond formed by sharing of one or more electrons.

pH
The reciprocal of the logarithm of the hydrogen ion concentration. The pH scale is from zero to 14 and 7.0 is the neutral point, indicating the presence of equal concentrations of free hydrogen and hydroxide ions. pH value below 7.0 indicate increasing acidity, and pH values above 7.0 indicate increasing base concentrations.

Osmotic Pressure
A property of the solution proportional to the amount of dissolved minerals present.

Permeate
The water that has passed through the membrane stage of treatment.

Product Water
The water produced by the treatment system.

Pyrogens
A group of substances of microbial origin that produce an increase in body temperature when injected into humans.

% Recovery
The percentage of feed water that is reclaimed as permeate.

% Rejection
The percentage of the feed water TDS that is prevented from passing through the membrane with the permeate.

Rentenate
The concentrate stream discharge from an ultrafiltration system.

Semi-Permeable Membrane
A very thin sheet or fine fiber of specialty fabricated material with exceedingly small pore size, which is selective in allowing passage of substances through the pores. It will allow passage of some substances, but not others.

TDS
An abbreviation for Total Dissolved Solids, also referred to as dissolved minerals, salts or ionic species, measured in the units of ppm or mg/L.

TFC
An abbreviation for Thin Film Composite, a class of membranes fabricated with different materials in the separation and support layers. (Flowmatic uses TLC as TFC is a registered trademark.)

Turbidity
A measure of fine suspended matter in water, usually measured in terms of nephelometric turbidity units (NTU).

Turbulent Flow
Fluid flow under such conditions that the fluid is being mixed while flowing.

Ultrafiltration (UF)
The process of removing colloidal and dispersed particles from a liquid by passing the liquid through a membrane under pressure. Separation or removal of particulates of more than 10A and less than 200 angstroms.

Valence
A number indicating the electrical charge of ions. Monovalent ions like sodium (NA+) or chloride (Cl+) have one positive or negative charge. Divalent ions like calcium (Ca++) or sulfate (SO4-) have two positive or negative charges.

Virus
The smallest form of life know to be capable of producing disease or infection, usually considered to be of large molecular size. They multiply by assembly of component fragments in living cells, rather than by cell division, as do most bacteria.

70 Kinderkamack Road, Suite 102 ■ Emerson, New Jersey 07630 ■ USA
201-576•0400 ■ Fax 201-576•0410 ■ 1-800-728-3420 ■ E-Mail: info@triangularwave.com

HOW TO ORDER

By Order Form:

This is the best way.To place an order, just make a copy of the Purchase Order form you'll find on the next page of this document, fill in all appropriate information and submit it to Triangular Wave Technologies, Inc. In-house/company purchase order forms may be submitted. Review TWT sales order form for appropriate contents.

By e-mail:

Download our Purchase Order form you'll find on the next page of this document, or you will find it in the Contact Us Section of the website. In-house/company purchase order forms may be submitted. Review TWT sales order form for appropriate contents.

By Mail:

Mail Purchase Order form TWT / In-House to Triangular Wave Technologies, Inc at:
70 Kinderkamack Rd • Emerson, New Jersey, 07630 • USA
You can use our order form and mail it, or you can just mail the product item number, prices, credit card info. etc.

By Fax:

You can use TWT or In-House Purchase Order form and fax it, or you can just fax the product item number, prices, credit card info. etc. Initialed and/or signed by an authorized representative.

Fax to Triangular Wave Technologies, Inc. to: 201-576-0410.

By Phone:

We do not accept phone-in orders.You may call in your credit card number if you are concerned about **internet security**. Please call Triangular Wave Technologies, Inc. at ***1-800-728-3420 USA • 201-576-0400 Overseas***

How to Pay:

We accept Visa, MasterCard, Discover Card and American Express.We also accept payment by company check or direct wire transfer (contact TWT, Inc.prior to payment for additional details) .

Delivery:

Allow one to two weeks for in stock products and/or systems. Custom engineered, integrated systems, special order(s) three to five weeks. Delivery for high volume purchase orders will be established on a case by case bases.

Upon receipt of purchase order from customer(s),TWT, Inc. will review, process, contact if necessary and confirmation will be sent to customer(s) for final approval.

Request a Quote:

Go to home page of TWT website and click on "Request Quote" banner top of page.
Follow instructions and fill in all pertinent information

All Orders FOB Company Warehouses

DISCOUNTS: Available upon request for volume purchasers on a case by case basis

PURCHASE ORDER FORM

D7

Triangular Wave Technologies, Inc.
70 Kinderkamack Road
Emerson, New Jersey, 07630, USA

Tel: 1-800-728-3420 USA • 201-576-0400 overseas

Fax: 201-576-0410 • E-mail: info@triangularwave.com

Bill To: _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Country: _____

Phone: _____ **Fax:** _____

Auth. Sig. _____

E-mail _____

Resale Certificate# _____

(Please mail signed copy to Triangular WaveTechnologies, Inc.)

Ship To: _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Country: _____

Phone: _____ **Fax:** _____

Attn: Dept./Loc: _____

ALL ORDERS SUBJECT TO CREDIT APPROVAL AND PRODUCT AVAILABILITY.PRICES SUBJECT TO CHANGE AT ANY TIME WITHOUT NOTICE. PRODUCTS ARE SOLD AT PRICES IN EFFECT AT THE TIME OF ORDER, ACCORDING TO THE TWT TERMS, CONDITIONS AND PRICE SCHEDULE.

ALL TAXES, DUTIES, INSURANCE AND FREIGHT CHARGES ARE THE RESPONSIBILITY OF THE CUSTOMER

Account# _____ **Country:** _____ **Installation Location:** _____

Phone: _____ **Fax:** _____ **E-mail:** _____

***Payment Method:** ❑ **Check** ❑ **Money Order enclosed** **Corporate PO# (attach copy if avail.)** _____

Credit Card: ❑ **Visa** ❑ **MC** ❑ **Amex** ❑ **DC** ❑ **Discover** ❑ **JCB Cards** ❑ **Other**_____ **Card#** _____ **Exp:**__/___/_

Order Date:____/____/___ **Requested Ship Date:**___/___/___ **Ship Via:** _____

TWT Model#	Description	Quantity	Price U.S. Dollars	Total

Special Instructions

Sub-Total	
Processing, Shipping and Handling	**TBD****
Sales Tax	**TBD**
Total	

* For payment procedures from outside the USA, please contact Triangular Wave Technologies,Inc. for details.

Prices are F.O.B. company warehouse(s) and will be shipped least expensive way unless otherwise requested. Freight & Insurance charges will appear on invoice.

**TBD: Carriers shipping and handling costs for products are constantly changing. For that reason, it is difficult for TWT to determine the exact shipping method, weight and charges for products before TWT has a confirmed and excepted purchase order in-house.

Triangular Wave Technologies, Inc
Purchase Order Review

D7

Triangular Wave 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.

Each product line offers a variety of both standalone and comprehensive treatment solutions for end-to-end fluid management, for all types of applications.

To ensure the greatest level of satisfaction in your work with the TWT®, Fluid Management Products & Systems

- **Know the performance capabilities and technical limitations of all products and systems to guarantee the proper installation application and treatment solutions.**
- **Manage Customer/End-User Expectations: Verify the purchase order product/system application, installation and performance needs, customer/end-user perceptions and manage all expectations.**

Take these steps before placing your purchase order

Triangular Wave Technologies Deposit Control Systems:

1. **Verify the pipes/tubes to be treated in your systems, *i.e., diameter of pipe or Tube (1", 2", 3",etc.) pipe material – copper, PVC, steel, ductile iron, glass, rubber, etc.***
2. **Verify that you have chosen the correct location and application method, *i.e., determine reaction zones, onsite solenoid wrap, Copper Pipe Signal Enhancer, Reaction Chamber, etc.***
3. **Verify that you have determined the appropriate Deposit Controller based on water quality review, system to be treated (process review); check your installation & technical guidelines packet, catalog and/or TWT website for additional information.**
4. **If any upgrades/changes are requested, it must be noted on your purchase order, *e.g.,voltage source changes (110/240 etc.), Deposit Controller upgrades and reason for upgrade additional wire & type of wire (Teflon, etc.), Reaction Chamber construction material e.g., Schedule 40/80 PVC, etc.***
5. **When using TWT Deposit Control Systems in conjunction with or integrated within other TWT or non TWT treatment technologies and systems, be certain to verify the performance capabilities and technical limitations of all system components.**

Triangular Wave Technologies Filtration, Ultraviolet and Integrated Systems:

1. **Before purchasing TWT filtration, ultraviolet and/or TWT integrated systems, be certain to *verify* the industry-specific application, installation and performance capabilities of these products and systems.**
2. **TWT Inc. recommends that all filtration, ultraviolet and TWT integrated systems, be sold and/or purchased with an initial supply of replacement products *e.g., replacement filters, UV lamps etc.* This will insure uninterrupted service and treatment.**

If not completely sure of the products performance capabilities, intend use and application will meet your expectations, email TWT Inc. at info@triangularwave.com for further assistance.

Review the TWT catalog, CD and/or visit TWT website for additional technical support, if needed.
Allow enough time for purchase order review, product development, shipping & handling.
We thank you and look forward to a mutually beneficial and advantageous relationship

TWT
TRIANGULAR WAVE TECHNOLOGIES, INC.
FLUID MANAGEMENT SOLUTIONS
www.Triangularwave.Com

Email: info@triangularwave.com • www.Triangularwave.com

TRIANGULAR WAVE TECHNOLOGIES, INC
FLUID MANAGEMENT SOLUTIONS
www.Triangularwave.Com

TWT PRODUCTS TERMS AND CONDITIONS/USA

ORDER PROCESSING:
2 weeks minimum

BLANKET ORDERS:
Accepted with the time period not to exceed six (6) months from date of original purchase order.

SHIPPING AND HANDLING:
All shipments F.O.B. TWT company warehouse(s). Shipments will be sent out the least expensive way (generally UPS) unless otherwise requested by customer. Large orders which exceed the size limitations of UPS will generally be sent via common carrier.

All products will be properly packaged, skidded or crated, and ready for shipping. If necessary, TWT will assist Purchaser to arrange shipping from F.O.B. point of origin to Purchaser's point of destination.

DELIVERY:
Contact TWT for specific information regarding ship time for orders. Most products require two to six weeks from date of order to delivery. Please allow sufficient time for delivery unless other arrangements have been made.

TWT shall not be liable for any failure or delay in furnishing the equipment, material or labor resulting from fire, explosion, flood, storm, Act of God, Government acts / orders /regulations, hostilities, civil disturbances, strikes, labor difficulties, delay of carrier, non-delivery of parts by the manufacturer or other causes beyond its control.

PAYMENT TERMS
Other than advanced payment, all orders are C.O.D. unless you have an established account with us. If you wish to open an account, please contact us for a credit application. Terms are Net 30 days from invoice date. A service charge of 1 1/2 % will be assessed monthly to all accounts which have an outstanding balance after 30 days. All past due accounts are automatically put on C.O.D. until the account is brought current.

NOTICES:
TWT makes no warranty of merchantability or fitness for a particular purpose other than as described in TWT Owner's Manual. All equipment or products referenced herein are subject to availability and to be discontinuance by TWT without notice. Should specific models become unavailable, TWT reserves the right to substitute functionally equivalent TWT models and/or configurations for those models discontinued.

RETURNS:
No returns will be accepted without written return authorization from TWT and according to TWT return policy.

TAXES:
All orders subject to applicable sales tax unless a valid resale certificate is furnished.Prices do not include taxes. Consequently, the amount of any present or future sales, use, excise or other applicable tax to the sale of the products shall be paid by the Purchaser unless a properly executed tax exemption certificate acceptable to the tax authorities is provided. Purchaser is responsible for remittance of all applicable taxes.

ALL PURCHASE ORDERS:
TWT reserves the right to accept or reject any order. Orders received, acknowledged, and accepted by TWT are considered firm and non-cancelable. Changes made to orders by Purchaser may be subject to price adjustments. Custom orders and orders designed specifically for Purchaser cannot be cancelled once the construction material has been ordered and/or production has begun. Any requested cancellations will incur the price of materials ordered and design and manufacturing time spent up to that time.

PRICES:
Subject to change at any time without notice. Products are sold at prices in effect at the time of order, according to the TWT price schedule.

IN-TRANSIT DAMAGE:
TWT cannot be held liable for equipment damaged, container shortages, or shipments lost by freight carrier. Shipments should be inspected for visible damage at time of delivery, and carrier's receipt or Bill of Lading should be noted "Internal Condition Unknown" before Consignee signs acceptance of delivery. All in-transit damage claims should be placed immediately with the carrier's claims representative.

DISCOUNTS:
Available upon request for volume purchasers on a case by case basis. –Minimum Order - Case Pack

Note: Review TWT catalog, website and/or product sheets for detailed technical information.

We accept Visa, MasterCard, Discover Card and American Express. We also accept payment by company check or direct wire transfer.

TRIANGULAR WAVE TECHNOLOGIES, INC.
FLUID MANAGEMENT SOLUTIONS
www.Triangularwave.Com

TWT PRODUCTS TERMS AND CONDITIONS/EXPORT

ORDER PROCESSING:
2 weeks minimum

BLANKET ORDERS:
Accepted with the time period not to exceed six (6) months from date of original purchase order.

SHIPPING & HANDLING:
All shipments (F.O.B.) from company warehouses. All products will be properly packaged, skidded, or crated, and ready for shipping. If necessary, TWT will assist Purchaser to arrange shipping from F.O.B. point of origin to Purchaser's point of destination. International orders must be freight prepaid before order is released.

DELIVERY:
2-6 weeks after receiving payment. Contact TWT for specific information regarding ship time for orders. Most products require four to six weeks from date of order to delivery. Please allow sufficient time for delivery unless other arrangements have been made.

TWT shall not be liable for any failure or delay in furnishing the equipment, material or labor resulting from fire, explosion, flood, storm, Act of God, Government acts / orders /regulations, hostilities, civil disturbances, strikes, labor difficulties, delay of carrier, non-delivery of parts by the manufacturer or other causes beyond its control.

PAYMENT TERMS:
All payments must be by wire transfer in advance, or by irrevocable, transferable, confirmed letter of credit (In a US bank and in US dollars only).

NOTICES:
TWT makes no warranty of merchantability or fitness for a particular purpose other than as described in TWT Owner's Manual. All equipment or products referenced herein are subject to availability and to be discontinuance by TWT without notice. Should specific models become unavailable, TWT reserves the right to substitute functionally equivalent TWT models and/or configurations for those models discontinued.

PAYABLE TO:
Triangular Wave Technologies, Inc. / Bank / Acct# / Routing# (Info. available at time of purchase)

TAXES:
Prices do not include taxes. Consequently, the amount of any present or future sales, use, excise or other applicable tax to the sale of the products shall be paid by the Purchaser unless a properly executed tax exemption certificate acceptable to the tax authorities is provided.

ALL PURCHASE ORDERS:
TWT reserves the right to accept or reject any order. Orders received, acknowledged, and accepted by TWT are considered firm and non-cancelable. Changes made to orders by Purchaser may be subject to price adjustments. Custom orders and orders designed specifically for Purchaser cannot be cancelled once the construction material has been ordered and/or production has begun. Any requested cancellations will incur the price of materials ordered and design and manufacturing time spent up to that time.

PRICES:
Subject to change at any time without notice. Products are sold at prices in effect at the time of order, according to the TWT price schedule.

IN-TRANSIT DAMAGE:
TWT cannot be held liable for equipment damaged, container shortages, or shipments lost by freight carrier. Shipments should be inspected for visible damage at time of delivery, and carrier's receipt or Bill of Lading should be noted "Internal Condition Unknown" before Consignee signs acceptance of delivery. All in-transit damage claims should be placed immediately with the carrier's claims representative.

RETURNS:
No returns will be accepted without written return authorization from TWT and according to TWT return policy.

DISCOUNTS:
Available upon request for volume purchasers on a case by case basis. –Minimum Order - Case Pack

Note: Review TWT catalog, website and/or product sheets for detailed technical information.

We accept Visa, MasterCard, Discover Card and American Express. We also accept payment by company check or direct wire transfer.

TRIANGULAR WAVE TECHNOLOGIES, INC.
FLUID MANAGEMENT SOLUTIONS
www.Triangularwave.Com

Product Warranty

All components of the Triangular Wave Microprocessor Deposit Control Systems are covered by a Five (5) Year Warranty provided that:

1. No modifications are performed on the unit;
2. The system is installed as recommended by Triangular Wave Technologies, Inc. and
3. There is no modification or change of installation without prior consultation with Triangular Wave Technologies, Inc. or its agents.

In the unlikely event that the unit becomes non-functioning, e.g., the “power” light and/ or the “coil energized” light are not receiving the signal & are not lit, please return the unit for replacement to the place of purchase, with proof of purchase information.*

The Triangular Wave System does not affect the potability or the natural mineral content of the water, as there is no direct contact with the water. Triangular Wave Technologies, Inc., therefore, accepts no responsibility for water quality.

Performance Warranty (90 days)

Triangular Wave Technologies, Inc. warrants that the Triangular Wave Microprocessor Deposit Control System will perform as indicated in this Owner’s/ Installation Manual. If the product does not perform as indicated, the unit may be returned within 90 days from the invoice date for a full refund of the purchase price, less the direct cost of shipping and installation.* Customer agrees that Triangular Wave Technologies, Inc. or its agents will be given access to the equipment for 90 days in order to monitor its performance, if desired, and/or to inspect the product and installation prior to any requested return authorization.

Under no circumstances shall Triangular Wave Technologies, Inc. or its agents be liable for consequential, special, contingent damages, claims or other demands in excess of the purchase price of the unit.

The Deposit Control System is non-invasive and non-chemical by design, and is suitable for nearly all applications requiring hard water treatment. The treatment process does not add anything to the fluid and should not cause damage to piping or equipment. The Deposit Control System is designed to remove scale; if piping or equipment has suffered corrosion prior to the installation of a TWT Deposit Control System, the removal of this scale may potentially reveal cracks/pin holes in this piping or equipment that had been held together by this scale. If structural damage or corrosion is suspected to exist, appropriate measures should be taken to alleviate this condition prior to or in conjunction with the installation of the TWT Deposit Controller. Equipment owners must continue to be responsible in standard infrastructure and equipment maintenance procedures as recommended by the manufacturers of all piping and fluid fed equipment.

Triangular Wave Microprocessor Deposit Control System components should be inspected, upon receipt, for damage that might occur during shipment. The carrier and Triangular Wave Technologies, Inc. or its agents must be notified immediately if damage is found.** With proper care during installation and maintenance, the system will provide faithful service for many years.

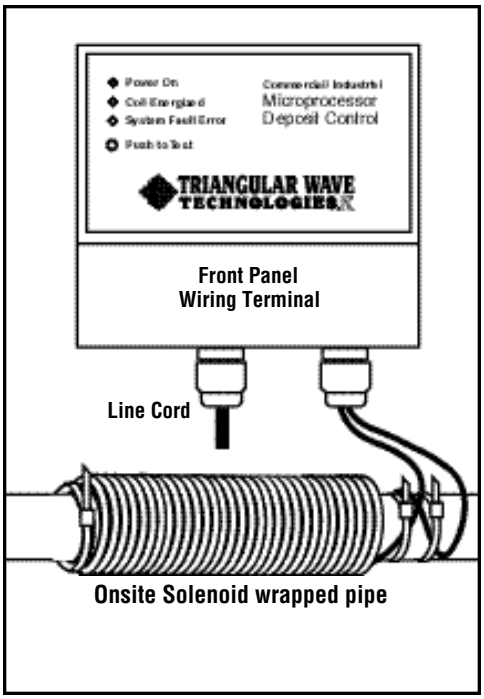
**Triangular Wave Technologies, Inc. or its Authorized Representatives must be notified prior to any return for the proper Return Authorization, conditions and procedures.*

***With the exception of Triangular Wave Technologies, Inc. represented products / components, which are covered by a separate standard warranty indicated in the products’ Owners Installation Manual provided.*

Triangular Wave Technologies, Inc. provides total support before, during, and after the installation.

MADE IN U.S.A.

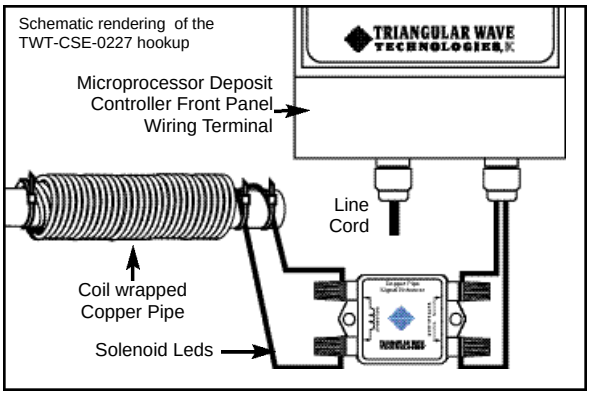
TWT® DEPOSIT CONTROLLER TERMINAL HOOKUP & APPLICATION GUIDELINES



The TWT® Deposit Control System will give many years of service if installed properly. Please read all instructions carefully (owners installation manual) before assembling the system.

The unit is provided with a line cord. The cord should remain unplugged until the installation is complete. Mount the unit to a supporting structure using the base mounting flange, and case mounting kit supplied. Install two mounting feet to the top rear of controller case with screws supplied. Place one of the mounting brackets on the top corner over the locating tab on each side of the unit, attach the brackets with screws provided. The two bottom mounting holes are located inside the controller in the terminal hookup area. You need to remove the front panel to locate the mounting holes at the bottom corners of the case. With the brackets in place you have a method to fasten all four corners of the controller to an appropriate surface.

TWT-CSE Copper Pipe Signal Enhancer Application

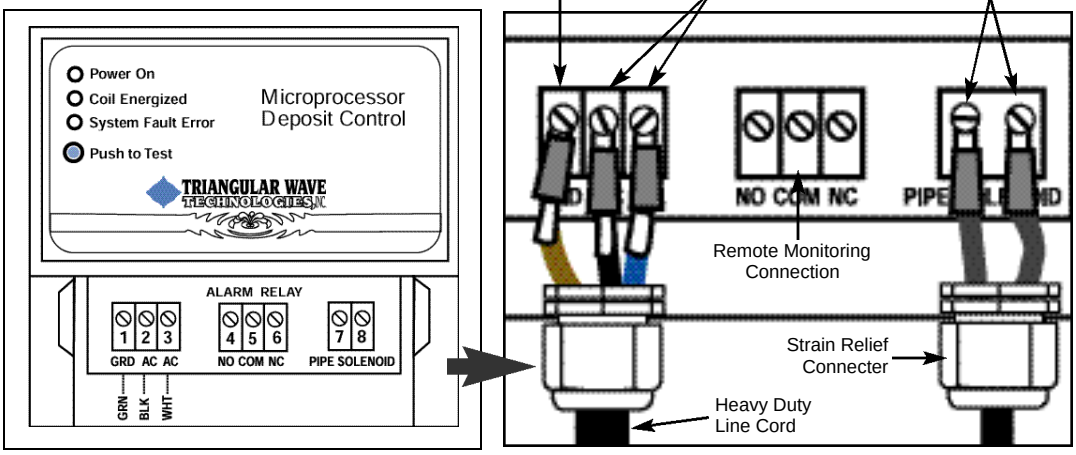


Copper pipes, although acceptable, are one of the more difficult of materials to work with. To overcome this…

TWT has developed its Copper Pipe Signal Enhancer. This unit is placed between the Deposit Controller and the solenoid coil on the copper pipe as illustrated. The function of the signal enhancer is to provide a proper impedance match and to ensure maximum energy transfer between the controller and the solenoid, which, in turn, ensures enhanced treatment of the fluid.

Special Note:
Copper pipe signal enhancers are to be used on copper pipes only.

TWT Deposit Controller terminal Hookup



TWT Deposit Control Unit

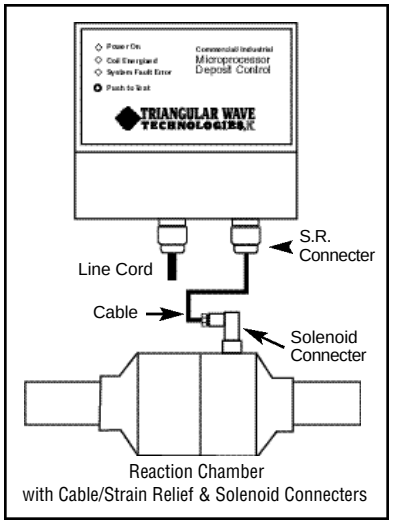
The controller is supplied with a wiring kit and a strain relief connector for the solenoid coil wires. This strain relief will provide a water resistant seal for the two coil wires. You should rotate the compression ring counter clockwise to release pressure on the seal. Feed the two wires through the provided holes and tighten the compression ring. Connect the two wires to the coil terminals in the controller housing as illustrated (refer to winding instructions in owners installation manual). A standard installation will not require access to the main control circuit board, because all connections are available in the wiring terminal. The control circuit is accessed by removing the front panel of the TWT unit.

Factory Wrapped Wire Coil Reaction Chambers Application

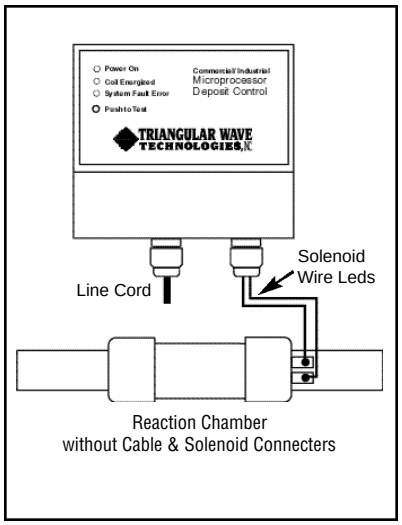
- **To address magnetic pipe applications**
- **When a protected environment (code) is needed**
- **When on-site solenoid wrap is not applicable**

The TWT Reaction Chamber is part of the patented TWT Deposit Control Technology. The Reaction Chamber provides a chamber through which the water flows and is exposed to the triangular wave signal that lies at the heart of the deposit control technology. As the fluid passes through, it is treated and then carries that treatment downstream, to condition the rest of the plumbing system, non-chemically and reliably.

When you have purchased a reaction chamber with cable and connecters with your controller unit, the correct strain relief connecter for the controller is furnished with the cable for the reaction chamber. The strain relief connecter on the controller (pipe solenoid) should be removed and replaced with the strain relief connecter provided with the reaction chamber cable. The two wires should be connected to the coil terminals in the controller housing as illustrated above.



Schematic rendering of industrial reaction chamber hookup



Schematic rendering of reaction chamber hookup using wiring kit provided

Email:info@triangularwave.com • triwaveinc@aol.com • Website:www.Triangularwave.com

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Product Warranty

The Triangular Wave Integrated MD/DP Treatment Systems are warranted, provided that:

1. No modifications are performed on the unit;
2. The system is installed as recommended by Triangular Wave Technologies, Inc.
3. There are no modifications or changes to installation without prior consultation with Triangular Wave Technologies, Inc. or its agents.

Warranty:

- 5 Year Warranty on Structural Components such as valves, pipes, UV chambers, filter housings, mounting boards and deposit control systems.
- 1 Year Warranty on Electronic Components.
- Consumables [UV lamps, quartz sleeves and filters] carry no warranty.

Triangular Wave Technologies, Inc. warrants that the Integrated Treatment systems will perform as indicated in their Owner's/Installation Manual. If the unit does not perform as indicated, refer to the "Trouble-Shooting Guide" and Care and Maintenance material included with your unit. If trouble persists contact your Dealer/Distributor for immediate Technical Support.

Under no circumstances shall Triangular Wave Technologies, Inc. or its agents be liable for consequential, special, or contingent damages, other claims or demands in excess of the purchase price of the unit.

The MD/DP System is non-chemical by design.The treatment process does not add anything to the fluid and should not cause damage to piping or equipment.The MD/DP System is designed to treat and condition the fluid which includes the removal of scale. If piping or equipment has suffered corrosion prior to the installation of a TWT System, the removal of this scale may potentially reveal cracks/pin holes in this piping or equipment that had been held together by this scale. If structural damage or corrosion is suspected to exist, appropriate measures should be taken to alleviate this condition prior to, or in conjunction with the installation of the TWT unit. Facility/Equipment Owners must continue to be responsible in standard infrastructure and equipment maintenance procedures as recommended by the manufacturers of all piping and fluid fed equipment.

Triangular Wave MD/DP System components should be inspected upon receipt for damage that might occur during shipment. The carrier and Triangular Wave Technologies, Inc. or its agents must be notified immediately if damage is found. With proper care during installation and maintenance, the system will provide faithful service for many years.

Triangular Wave Technologies, Inc. provides total support before, during and after the installation.

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RETURN POLICY & AUTHORIZATION FORM

TWT INC. RETURN POLICY
Accepting Delivery of Your (purchase order) Shipment(s)

All products shipped from our factory are carefully checked, tested, inspected and packaged before leaving our warehouse. ***Shipping errors and/or damages must be reported to TWT, Inc./Distributor and to Carrier upon receipt of shipment.*** This is imperative in order to perfect any claims to the carrier, and no deviation will be accepted. No returns will be accepted without a TWT, Inc. Return Authorization Number. In order to obtain an authorization number, please use the attached RAN form.

DROP SHIPMENT(S)

For Distributors requesting drop-shipments directly to their customers, please be advised that those customers must adhere to the Policy stated herein, if Distributor is to have any recourse with TWT for shipping errors and/or damaged shipments. TWT recommends that Distributors restate the TWT Return Policy as their own policy on their company letterhead in order to ensure that all parties involved are informed and have appropriate recourse.

ACCEPTING DELIVERY OF YOUR SHIPMENT(S)

There is always the possibility of either internal or external damages caused by careless handling, accident, etc., during transit by common carrier. Further, this equipment may be damaged without any apparent visible damage to the container. As a matter of prudence, TWT insures all shipped equipment for at least the replacement value, or as otherwise requested by distributor/customer. However, TWT must ask for your assistance in determining the cause and extent of any possible damages. As a TWT policy henceforth, all will be required to follow these procedures:

A. Upon receipt of the shipment(s) and before accepting delivery, inspect the outside packaging, cartons and skids (if it is skidded.)

B. Note any damages to the cartons, crates, skids or equipment even if it involves an innocuous hole in the box, torn bubble wrap, minor-looking dent or banged-in corners.

C. Clearly note on the Bill of Lading any and all damages before signing the receipt and returning the bill of lading to the delivery person AND...

D. Whether or not there is any apparent visible damages, write internal conditions unknown on the bill of landing.

E. If products received do not match products ordered, contact TWT/Distributor immediately with purchase order number and details of discrepancy.

THIS IS IMPERATIVE IF A CLAIM IS TO BE PERFECTED.

IF ERRORS AND/OR DAMAGE OF ANY KIND ARE DISCOVERED, SAVE ALL THE PACKING MATERIAL AND ANY CHIPS OR PIECES FOUND IN THE PACKAGING FROM BROKEN EQUIPMENT. NOTIFY TWT/DISTRIBUTOR, IMMEDIATELY SO THAT TWT/DISTRIBUTOR CAN INFORM THE FREIGHT COMPANY THAT A CLAIM WILL BE MADE. (TAKE PICTURES IF POSSIBLE)

- TRIANGULAR WAVE TECHNOLOGIES, INC. AND/ OR DISTRIBUTOR WILL NOT BE ABLE TO PROCESS NOR BE RESPONSIBLE FOR ANY CLAIMS FOR ANY TRANSPORTATION DAMAGES, INTERNAL OR EXTERNAL, IF NOT NOTIFIED WITHIN 24 HOURS AFTER DELIVERY.
- TRIANGULAR WAVE TECHNOLOGIES, INC. WILL NOT BE RESPONSIBLE FOR ANY MISSING ITEMS IF NOT NOTIFIED WITHIN TWO (2) BUSINESS DAYS OF DELIVERY.
- TRIANGULAR WAVE TECHNOLOGIES, INC. WILL NOT BE RESPONSIBLE FOR ANY CLAIMS UNLESS THE ABOVE IS STRICTLY ADHERED TO.

Thank you for your kind cooperation. If you have any questions, please do not hesitate to contact us.

TWT, INC. RETURN AUTHORIZATION FORM

[for Distributor/Customer use only]

DATE:_____/_____/_____

For Return Authorization, Please fill out mail and/or fax to TWT, Inc.

Triangular Wave Technologies, Inc. • 70 Kinderkamack Road • Emerson, New Jersey, 07630, USA
Tel: 1-800-728-3420 USA • 201-576-0400 overseas • Fax: 201-576-0410 • E-mail: info@triangularwave.com

Company/Customer Name: _____

Attn: (Dept./Loc.): _____

Address: _____

City: _____ **State:** _____ **Zip:** _____

Country: _____ **E-mail:** _____

Tel: _____ **Fax:** _____

Auth. Signature: _____

(Contact Name): _____

Account#: _____

Orig. Invoice# _____

Date Shipment Received: _____

Factory is not able to except any returns that are not freight prepaid

No products may be returned that are not properly packaged with all components included

A restocking charge of 20% may be charged to customer/ distributor for all products improperly returned

Mark on all cartons returned:
Item#(s) #of units, RMA#

Equipment Description	Item#	Quantity	Cost/Each	Special Instructions

Reason For Return: ❑ Defective ❑ Damaged ❑ Missing Pieces ❑ Authorized Trial Evaluation Completed

❑ Other, Explain: _____

Requested Return Total Valve: _____

[for TWT Inc.office use only]

❑ **Credit will be given upon product inspection at our factory**

❑ **Products will be replaced upon receipt at our warehouse**

❑ **Dispose of products and we will credit your account**

❑ **Return authorization denied**

Authorized by: _____

Date: _____

Return Authorization # _____

Return Products To: _____

Address: _____

City: _____ **State:** _____ **Zip:** _____ **USA**

RMA#: _____

Date Entered/Returned to Company/Customer

DATE:_____/_____/_____

TWT Representative: _____

Corporate Mission Statement

The need for clean water grows throughout the world daily, as populations increase, business and industry expands, and natural disasters and geo-political conflicts leading to disease and famine remain desperate problems. The call for education, awareness, and conservation / preservation of our water supply, both here and abroad, is heard more loudly each day. Triangular Wave Technologies, Inc. is committed to providing quality products, systems, education and information necessary to protecting water, one of our most precious resources, used by each and every living being on the planet. Our commitment is to provide quality performance to every customer, every time, satisfaction guaranteed.

We pledge to provide you with:

- ***Unique products and services that directly and reliably address your needs***
- ***The highest level of customer satisfaction before, during and after the sale***
- ***Timely delivery of your order***
- ***More ways to keep your fluid system running right***
- ***More specialized services from one specialized source***
- ***Guaranteed satisfaction***

TWT is continually identifying new ways to maintain a safe water supply for us all, building the best, highest-quality, environmentally-friendly fluid management products for industrial, commercial, and residential use. Our goal is to maintain a leadership position in these markets by getting the right products to the right customers at the right time, and at a cost-effective price.

About Triangular Wave Technologies, Inc.

The Triangular Wave Technologies staff consists of a diverse group of bright, passionate and driven individuals with years of experience who combine their talents as a team's, revolutionizing the way fluid management products are designed, distributed and installed. Our unique capabilities and design expertise have successfully solved a wide variety of problems for a wide variety of customers.

Our teams broad expertise includes...

- ***Knowledge of industry-specific needs***
- ***Personnel with research and development capabilities and know-how***
- ***Manufacturing and quality control specialists***
- ***Marketing, sales***
- ***Domestic and international sales specialists***

All these plus more, form a broad and diverse talent pool which makes Triangular Wave Technologies, Inc. a stimulating and profitable organization with which to work.

TWT's technical team is continually working together with outside vendors to develop state-of-the-art industry-specific products and services which set the industry standard. Our tech team is driven by a simple but challenging goal - to build superior products and continually innovate to be the leader in fluid management solutions.

Please feel free to contact us with suggestions or comments.

- ***Prices, terms and conditions: Contact us for the dealer or distributor nearest to you.***
- ***Have a specific need and/or question? Go to our website at www.triangularwave.com***

SALES:
FROM INQUIRY TO INSTALLATION

QUALIFY LEADS & CONTACTS

CLIENT PROFILE INDUSTRY/APPLICATION SPECIFIC

GATHER ALL INFORMATION TO DETERMINE PROPER INSTALLATION & CONFIGURATION

SUBMIT PROPOSAL TO CLIENT

RECEIVE PURCHASE ORDER OR SIGNED PROPOSAL

PLACE YOUR ORDER WITH TWT

TWT APPROVES YOUR ORDER & SHIPS

YOU FOLLOW-UP FOR CUSTOMER SATISFACTION AND NEXT ORDER

Triangular Wave Technologies Inc. and its distributors provide to their customers total support before, during and after installation

We pledge to provide you with:

- ***Unique products and services that directly and reliably address your needs***
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www.Triangularwave.Com

Email:info@triangularwave.com • triwaveinc@aol.com • Visit our web site:www.Triangularwave.com

YES, OUR GRAPHIC DESIGN DEPARTMENT CAN HELP YOU WITH YOUR PROMOTIONAL NEEDS

All TWT trade ads in our catalog can be individually customized to help you with your marketing and promotional campaigns. Ask us how we can assist you in your promotional endeavors with these ads, or with ads of your own design.

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CHEMICAL-FREE FLUID MANAGEMENT SOLUTIONS FOR THE IRRIGATION & AGRICULTURAL INDUSTRIES

- Cows are "Fussy" The More Water They Drink, The More Milk They Produce
- Crops Absorb Water & Nutrients Faster
- Improves Operating Efficiency of Medicators, Bell Nipple Waterers & Feed Lines
- Prevents Clogging in Irrigation Emitters

TWT Products & Systems For The Control of Scale Deposits • Bio-film • Algae • Colloids In All Water Feed Lines & Irrigation Equipment

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NO MATTER HOW TOUGH THE JOB... TWT IS THE SOLUTION

In effect, 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

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HARD WATER PROBLEMS SOLVED EASILY!

YOUR SIMPLE AND SAFE SOLUTION... CHEMICAL-FREE!

ENHANCE WATER QUALITY, AND IMPROVE HVAC OPERATING EFFICIENCY AND EQUIPMENT LIFE CYCLE

P.O.E./P.O.U. Products & Systems

Visit the TWT Website, the Valuable Technical Resource For All Involved In Water & Fluid Management

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CHEMICAL-FREE DEPOSIT CONTROL TECHNOLOGY
The Right Stuff For The Right Job!
Hard Water Problems Solved Easily
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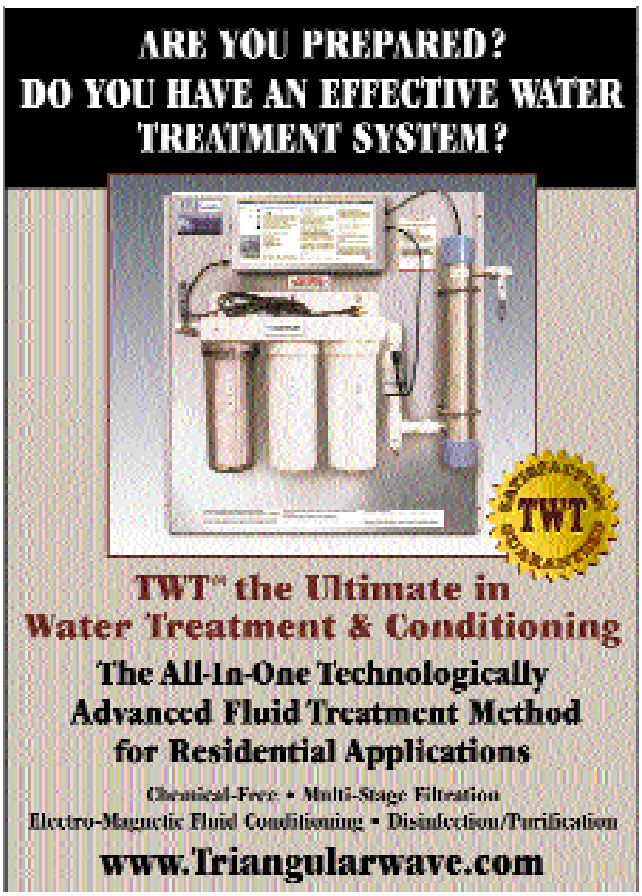
ARE YOU PREPARED?
DO YOU HAVE AN EFFECTIVE WATER TREATMENT SYSTEM?
TWT
TWT® the Ultimate in Water Treatment & Conditioning
The All-In-One Technologically Advanced Fluid Treatment Method for Residential Applications
Chemical-Free • Multi-Stage Filtration
Electro-Magnetic Fluid Conditioning • Disinfection/Purification
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TWT®
TRIANGULAR WAVE TECHNOLOGIES, INC.
CHEMICAL-FREE FLUID MANAGEMENT SOLUTIONS
All-In-One fluid management systems, the ultimate in water treatment & conditioning
TWT Filtration, Microprocessor Deposit Controller, Reaction Chamber, and UV Disinfection units are combined to provide a start-to-finish answer to simplified prevention, treatment and management of water line contamination dangers.
ENGINEERED FOR PERFORMANCE
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Versatile Fluid Management Products & Systems To Effectively Meet The Needs Of Any Industry and Application
Industrial · Commercial · Residential

All the needed elements for maximum fluid protection, management, peace of mind from one source, are combined to provide a start-to-finish answer to simplified prevention, treatment and management of water line contamination dangers.

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Bringing You the Best in Fluid Management Solutions

MADE IN U.S.A.

To find out even more about TWT, contact us at: Email: info@triangularwave.com or visit Triangular Wave Technologies, Inc.'s comprehensive website, the valuable technical resource for all involved in water and fluid management..WWW.TRIANGULARWAVE.COM

Click on Frequently Asked Questions, Search, Alphabetical Listing of Topics, Contact Us, Review Documents, Fact Sheets, Case Studies and other Related Information and Download as Needed.

SATISFACTION TWT GUARANTEED

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