

THE DIFFERENCE IN TECHNOLOGY MATTERS!

Triangular Wave Technologies, Inc. (TWT)

TWT® CHEMICAL-FREE H.V.A.C. FLUID CONDITIONING & TREATMENT SOLUTIONS

Technologically Advanced Products & Systems
for the Control of Scale Deposits/Biofilm/Corrosion
Bacteria, Algae and Colloids



Triangular Wave Technologies, Inc. is the
Leader in Chemical-Free HVAC Fluid
Conditioning and Treatment Systems.

Using Patented Triangular Wave Technology,
It Effectively Meets The Needs
Of Any Application.

TWT® Total Water Control
systems (TWCS)



All-In-One Package-Unit

Multi-Process Conditioning,
Disinfection & Purification
Technology effectively...

- Increases Cooling Efficiency
- Reduces Operating Cost
- Enhances Water Quality,
- Improves HVAC Operating Efficiency and Equipment Life Cycle
- Saves: Chemicals, Water, Energy, Labor, Time & Materials



IN PARTNERS WITH

TWT® TOTAL WATER CONTROL SYSTEMS (TWCS)

For Industrial Cooling Towers, and Process Water Applications
 Filtration • Deposit Control Technology • Disinfection • Purification

TWT Total Water Control System, TWCS series systems combine technologically advanced water/fluid treatment methods consisting of: Triangularwave Deposit Control Technology, Automatic Backwashable Filtration, Ultra-Violet Disinfection, IonGuard Ionization and Purification, to improve the efficiency HVAC, refrigeration, and industrial water cooling equipment (End-To-End Treatment).

The Total Water Control System removes suspended solids down to 5 microns, controls the dissolved solids (minerals), kills and prevents the regrowth of algae/bacteria, reduces the risk of air borne pathogens such as Legionella and water loss due to bleed-off by as much as 75%, and provides a 100% savings on chemicals.

Suspended solids enter the evaporative cooling process

as dirt, dust, organic matter and pollution. They are circulated through the system, fouling condensers, chillers, heat exchangers and other process cooling equipment. The TWCS series treatment systems, installed on the sump (side stream) of cooling equipment, will substantially reduce the volume of suspended solids. This will allow heat transfer systems to operate at maximum design capacity and minimum energy cost. The benefits of operating water cooled equipment with clean water can add up to a return on investment of two years or less, depending on your application.

**U.S. Department of Energy
 thickness of scale accumulation
 increases energy consumption by:**

1/32"	8.5% increase
1/16"	12.4% increase
1/8"	25.0% increase
1/4"	40.0% increase

TWT® Deposit Control Technology- Treatment Systems for the Control Of Scale Deposits, Biofilm, Corrosion, Algae And Colloids For All Fluid Based Applications

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 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

Incoming water supersaturated with calcium, minerals and colloids. Pipes with scale, biofilm and colloids buildup prior to TWT treatment.

Conditioned water with minerals, colloids treated and the calcium converted to aragonite crystals. Hydrated (wetter) water molecules acting upon the scale, biofilm buildup, and the colloids in the water. Effects are immediate and last downstream.

Complex modulated signal producing magnetic field inside the pipe. The resulting induced, oscillating electric field provides the necessary molecular agitation for scale and biofilm prevention and removal.

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 in the same way. The result is clean corrosion-free pipes, tubing and delivery system with no biofilm and reduced bacterial contamination.

flushed out of the system. If left untreated, scale build-up inside the reaction chamber and on the quartz sleeve containing the UV lamps may rapidly diminish the UV disinfection effectiveness by reducing the amount of UV light which is absorbed into the water stream. The TWT Deposit Control System will further condition the filtered water stream so as to prevent this scale-build-up inside the UV reaction chamber, helping to maintain maximum UV life cycle and penetration into the water stream.

TWT Deposit Control Units are sized and system integrated according to application, GPM and treatment requirements.

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

Filtration Systems- Traps & Removes Harmful Pollutants, prevents restriction and keeps water in the plumbing system flowing

Filters are designed to trap various kinds of debris, dirt and organic particles that will otherwise enter your equipment and/or plumbing system, restrict your water flow and create a breeding ground for bacteria. Filtration is the first line of defense for commercial and industrial facilities, where the source of water may be ponds, wells, streams or other water sources that have high exposure to contamination from airborne pollutants, surface run-off, agricultural or industrial waste or similar dangers. The first step in achieving clean water is to install a filtration device that effectively removes particulate matter and similar debris.

Filtration is an important step in water treatment. Filtration systems provide a bacteriostatic environment and are designed to remove, volatile organic chemicals, hydrogen sulfide, sulfur, herbicides, pesticides, chemical fertilizer residues, trihalomethanes and many other pollutants. The filtration units utilized in TWT systems are comprised of screen and several filter types and media that remove harmful chemicals, metals, and toxins from the water as it passes through these layers. The TWT Filters utilize dual media filter, granular activated carbon filter, extruded carbon activated block filter, Silica, DE, bag or other filter media upon request. TWT filter system / media can be configured to trap particles of various micronic sizes.



Separation, a viable alternative

TWT Filtration Units are sized and system integrated according to application, GPM and treatment requirements.

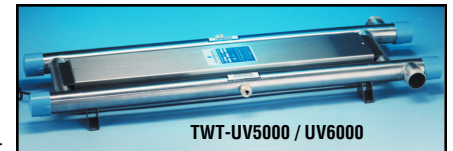
Ultra Violet Purification- Safe Water Free of Disease Causing Pathogens Disinfection/Purification

UV disinfection technology is used in the system to provide safe water, free of disease-causing pathogens. As water passes through the UV chamber, UV light will attack and render harmless any bacterial, viral or spore contamination present in the treated water. "High intensity UV light destroys these contaminants with a 99.9% or greater kill rate" The output water is thus disinfected and offers exceptionally high quality. Ultraviolet is a means of killing or rendering harmless microorganisms in a dedicated environment. These micro-organism

range from bacteria and viruses to algae and protozoa. UV disinfection is used in air and water purification, sewage treatment, protection of food and beverages, and many other disinfection and sterilization applications. A major advantage of UV treatment is that it is capable of disinfecting water faster than chlorine without cumbersome retention tanks and harmful chemicals. UV treatment systems are also extremely cost efficient!

Installing the TWT Deposit Control System prior to the UV system will further condition the treated water stream so as to prevent scale-build-up inside the UV reaction chamber, helping to maintain maximum UV life cycle and penetration into the water stream. TWT deposit control technology (treated fluid) maintains the ability to control deposits throughout the system with down-stream residual value.

University test proves Triangular Wave Technologies, Inc. (TWT®) Deposit Control System reduces the fouling effects caused by "hard water" on the quartz sleeve and UV lamp inside the disinfection/ purification unit while maintaining the residual effects downstream chemically free.



TWT-UV100-6

TWT Ultra Violet Units are sized and system integrated according to application, GPM and treatment requirements.

Ultra Violet Disinfection:

- Natural Process
- No Risk of Overdose
- Free-Flow Design—Immediate Treatment
- Chemical—Free
- Easy to Maintain
- Low Energy Use
- Green Technology
- Highly Effective
- Real Time Monitoring
- Safe to Handle
- No change in Taste, pH, Conductivity or General Water Chemistry
- Compatible with all Water Treatment Processes

Ultra Violet (UV) does not have any chemical additives, nor does it produce any potentially harmful byproducts as it kills bacteria and viruses which may be present in your water.

PROTECTION FOR NEW EQUIPMENT

Provides new equipment with the ability to enhance it's features and benefits

Ionization- For Bacteria, Algae, Fungus Control, in HVAC Industry

The Ionization component is a specially designed silver and copper electrode system that dispenses minute amounts of silver into the water to kill bacteria, and minute amounts of copper to kill plant life. The flow from the water cooling system is thus cleaned continuously by the TWCS. The system size is selected to clean the entire sump volume approximately once per hour. Suspended solids concentrate in the filter, and are periodically back washed to drain. With the TWCS installed on the cooling tower sump, suspended solids, dissolved solids, algae and bacteria can be controlled and discharged without affecting or interrupting cooling equipment operations.



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/or bacterial contamination

TWT Ionization Units are sized and system integrated according to application, GPM and treatment requirements.

Product Summary

Water in a cooling tower is subject to contamination from many sources. The accumulation of suspended solids, dissolved solids (minerals) and microbiological growth can foul the entire cooling system unless properly controlled. The Total Water Control System (TWCS), incorporating patented TWT deposit control technology and other process technology that works to control such conditions:

- Removes suspended solids down to five (5) microns
- Removes and prevents the reformation of scale and corrosion caused by dissolved solids (minerals)
- Kills and prevents the growth of algae and bacteria.

These mandatory requirements for treating tower water are accomplished automatically with the TWCS, using no chemicals or acids, and requiring little maintenance. The only items needing replacement in the system is the



Encrusted Heat Exchangers

set of electrodes in the algae/bacteria control unit and the UV lamps in the ultra violet system. They have an expected life of 12-18 months, depending upon the geographical location of the TWCS. Maintenance is generally limited to one (1) man/hour per week for operational supervision and another man/hour per week for preventive maintenance. Replacing chemical treatment with a TWCS system will reduce water loss from blowdown (or bleed-off) by up to 75% with the automatic back-wash of the filter media and save 100% on chemicals.

The Multi Functions of industrial water treatment equipment (or, why do we use TWT?)

Filtration Problem:

In the actual operation of an open, recirculating cooling tower systems, airborne particles will become a potential source of contamination. The presence of these suspended solids contributes to accelerated corrosion via a number of different mechanisms. In one way, corrosive attack occurs when the tower surface is continually bombarded by particles, causing localized corrosion. Similarly, settled particles in the low flow areas of the cooling equipment enhance the troublesome process of under-deposit corrosion. In this situation the particles act as barrier between the metal surface and any corrosion-control agents applied to the surface. Thus, effective elimination of suspended particles is a primary requirement for cooling water treatment systems.

Solution:

The TWCS filter system passes tower and process water through a prestrainer before entering the filter media. Normal water flow through the filter is from top to bottom of the tank. When the filter reaches its maximum contamination level, a differential pressure switch activates the valve system to change to the backwash position. For backwash, the water direction is reversed with tower water flowing up from the bottom to the top of the tank and out the drain. The valve system returns to its normal filtering position after a pre-set backwash time (approximately 3 minutes). TWCS systems use a standard media pack with 90% removal capability of particles 5 microns or larger. The normal media pack consists of 99.9 pure silica and 1/8 to 1/4 inch hard gravel. Alternate packs are available for special water problems such as high chemical concentration.

Control of scale and corrosion: the effects of electronic water and fluid treatment

Problem:

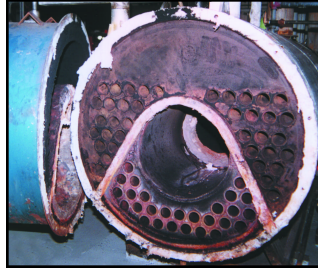
In untreated water, minerals like calcium and magnesium (the presence of which is commonly known as hardness) will precipitate in heat transfer areas. This precipitate forms layers of scale which attach to metal surfaces reducing the efficiency of cooling equipment and increasing energy and maintenance costs.

TREATMENT FOR EXISTING EQUIPMENT

Retrofit existing equipment to improve its operating efficiency and life cycle

Solution:

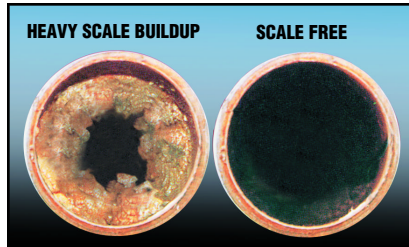
In water electronically treated with TWT Deposit Control Systems, these same calcium and magnesium minerals precipitate in separate individuals loose crystals. The treated precipitate appears to the eye as a fine powder. This loose precipitate, with sufficient circulation, will be continuously washed from the heat exchange surfaces down the drain during filter backwash. In operation, a thin film of the aragonite talc, much like a protective coating of oil, will be deposited on the water-touching interior surfaces of the system. This powdery coating prevents free gasses in the water from attacking the metals in coats, thereby preventing corrosion.



Scaled Tube Bundles

Dissolving existing scale

Due to the physicochemical process described above, intermolecular cohesion is broken. This occurrence causes a dissolution of any existing scale forming crystals. The existing scale formations will slowly be dissolved and washed out of the system as water turbulence in the system flushes them away. In the TWCS installation the electronic deposit controllers and industrial reaction chamber units are configured as illustrated in the schematic rendering on the following pages.



Eliminates deposits in pipes, fixtures and equipment.

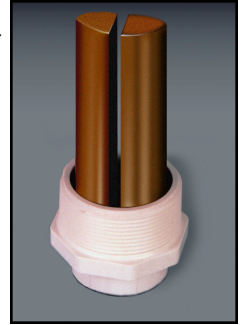
Control of algae and bacteria

Problem:

Proper operation of cooling water systems depend on the control of microorganisms which enter the cooling water makeup from the air into the recirculating tower system. Left uncontrolled, these microorganisms can foul a cooling system within days. The microorganisms form a layer on cooling surfaces which trap acidic byproducts of anaerobic bacteria next to the surface of the metal. The effects of Pseudomonas slime over time included reduction of heat transfer, restricted water flow and under-deposit corrosion in heat exchanger and transfer piping. The key is to prevent the Pseudomonas biofilm and other slime-forming bacteria from forming. Traditional chemical techniques for control of algae and bacteria consist of oxidizing biocides, non-oxidizing biocides and biodispersants. Newer techniques employ bromine chemistry.

Solution:

The TWCS systems avoids the use of chemicals by installing the Triangular Wave Ultra Violet Disinfection System as described in the previous pages and Copper /Silver electrode Ionization Disinfection Unit in-line on the line to the tower. Copper is used as an algicide and silver as a disinfection. By releasing copper and silver ions into the tower water at very low rates, adequate control of bacteria and microorganism growth is achieved. A power supply converts 110/120 V 12 DC volts and this current is alternated between two (2) copper/silver electrodes (each made with 90% copper and 10% silver). The current causes a departure of copper and silver ions in a controlled volume using a rheostat control system. The copper ions control the algae and the silver ions kill Pseudomonas Aeruinoso and Legionella, the two most dangerous bacteria in cooling towers.



Copper/Silver Electrodes

Filtration Systems Automatic Backwash routine maintenance

Regular Backwash: The TWCS system backwashes on pre-set time cycle to control conductivity in the tower water. This cycle is determined by the hardness of the source water as calcium (CACO3). This system contains our Electrostatic System capable of 30 to 60 grain hardness. The tower is used for this back wash cycle.

The TWCS system controls the pH level of the water by continually monitoring the water conductivity. Since pH rises as total dissolved solids (TDS) increase, monitoring the TDS will control the pH level. A TDS controller is located on the control panel with a sensor attached to the inlet water filter line. The procedures for determining initial TDS setting and maintaining the proper pH over time are straightforward and explained with the training provided at time of installation and in owners manual.

Clean Water Back Wash: The TWCS system has a time-controlled Clean Water Back Wash normally set for once every 24 hours. This back wash uses a clean water source to purge the media of accumulated particles, minerals and any other elements that may be trapped by the media during the regular Back Washes with the tower water.

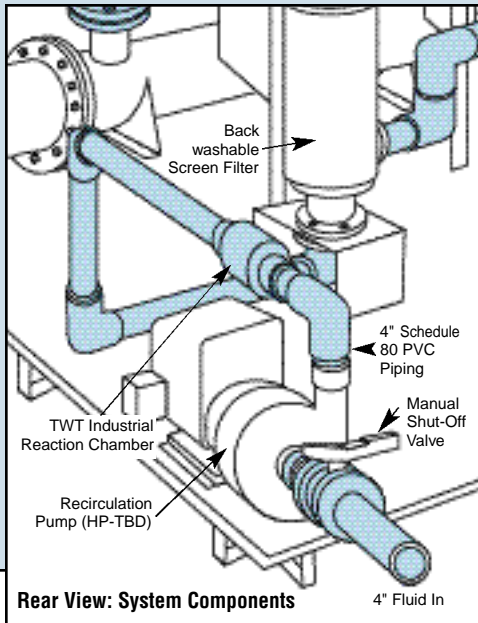
CONCLUSION

The Total Water Control System protects cooling tower and process water systems by:

- Controlling deposits of scale and biofilm
- Filtering the water
- Killing and preventing regrowth of bacteria and algae

The result is savings in chemical, energy, maintenance costs, and water conservation.

Versatile Fluid Management Systems To Effectively Meet The Needs Of Any Application Custom Engineered Systems Built to Order Only.



(HVAC) Cooling Towers, Chillers, Condensers, (Chemical-Free) All-In-One: Water Conditioning and Treatment Systems. End-To-End Treatment Process Package Units.

TWT-TWCS-500—Designed to treat 30 GPM / 2 inch In/Out of System (TWT-UV5000) Approximate Dimensions: Size, Height, Width & Depth (TBD)

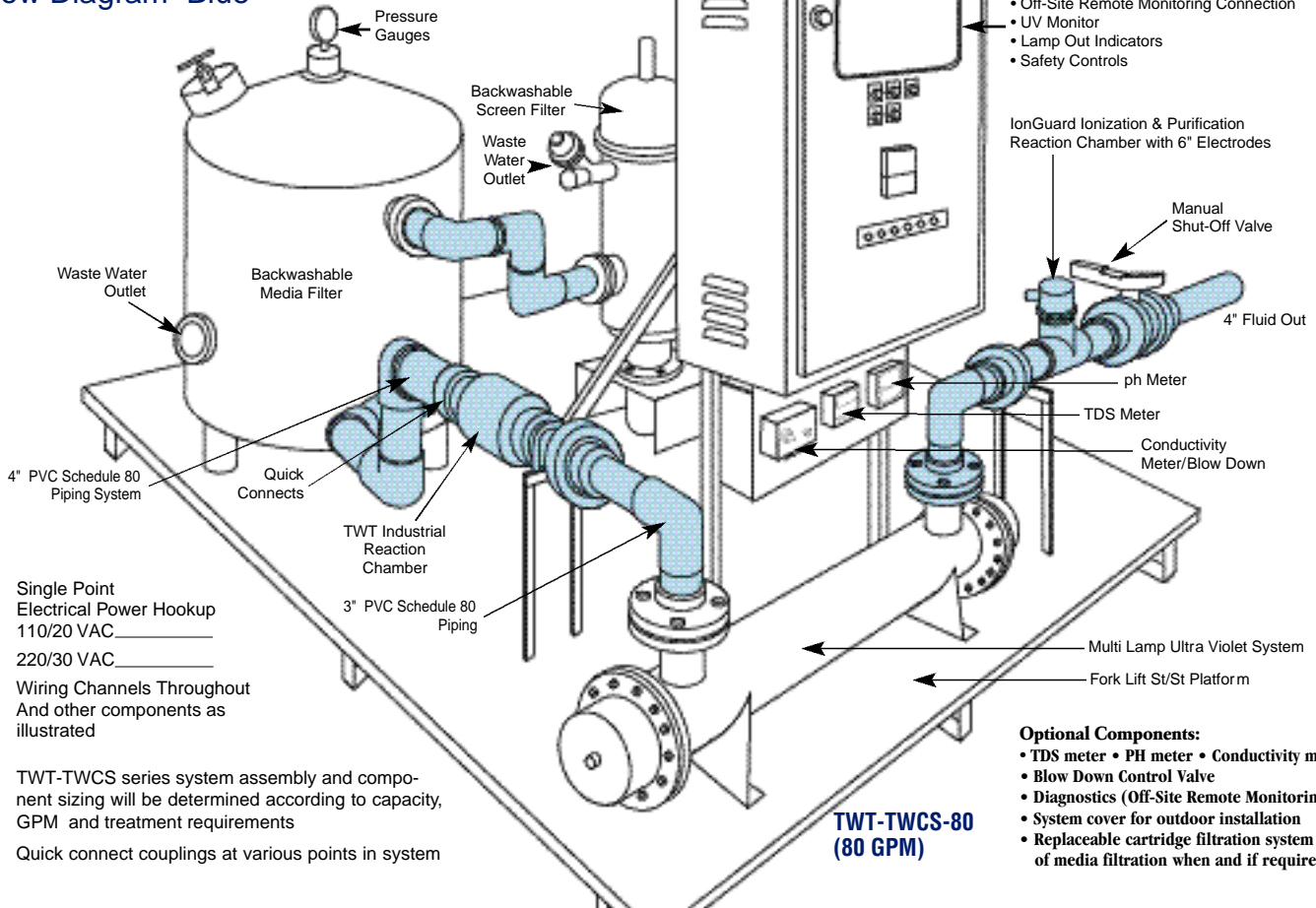
TWT-TWCS-1000—Designed to treat 50 GPM / 3 inch In/Out of System (TWT-UV6000) Approximate Dimensions: Size, Height, Width & Depth (TBD)

TWT-TWCS-2500—Designed to treat 80 GPM / 4 inch In/Out of System (TWT-UV100-6) Approximate Dimensions: Size, Height, Width & Depth (TBD)

TWT-TWCS-5000—Designed to treat 120 GPM / 6 inch In/Out of System (2-TWT-UV100-6) Approximate Dimensions: Size, Height, Width & Depth (TBD)

TWCS are custom built according to customer system application, treatment and GPM requirements. Component assembly, size and system weight to be determined at time of purchase based on completed proposal.

Flow Diagram=Blue



System engineering, design, weight, size and system component assembly may vary based on TWT engineering review, application, installation and water quality analysis.

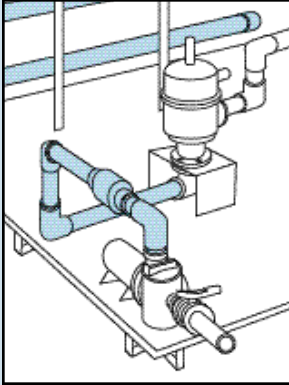
Additional pumps, piping, fittings and other related equipment to and from system owners/customers responsibility.

All TWT-TWCS are properly packed, skidded and/or crated to ensure safe delivery.

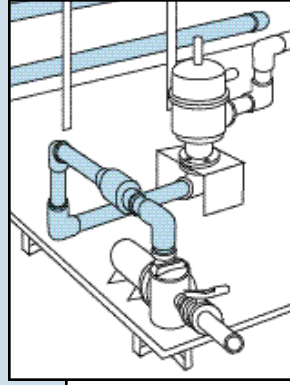
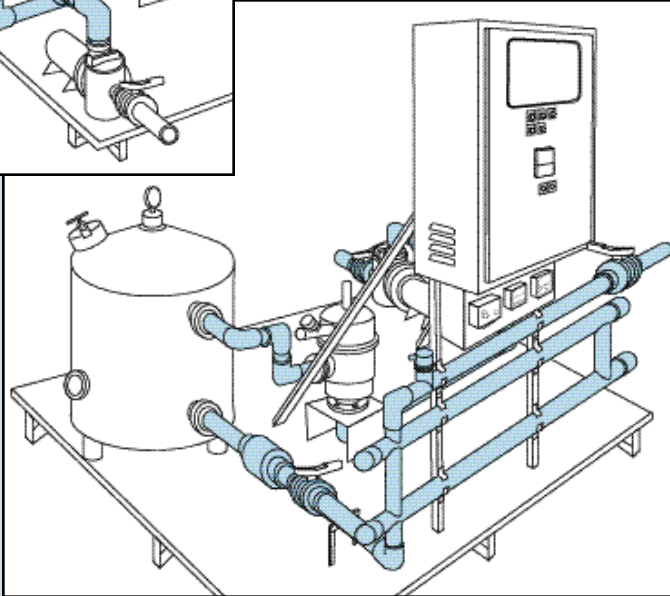
TWT Inc. recommends that an initial supply of replacement products e.g., replacement UV lamps, copper/silver electrodes, etc. be stored at owners facility at all times, to insure uninterrupted service and treatment.

Concept drawing not to scale for reference only.

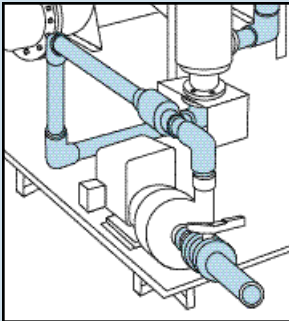
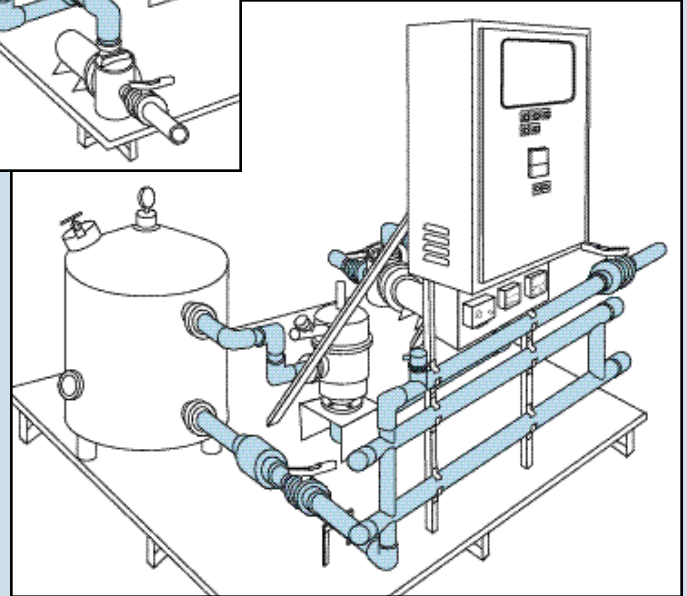
(HVAC) Cooling Towers, Chillers, Condensers, (Chemical-Free) All-In-One: Water Conditioning and Treatment Systems. End-To-End Treatment Process Package Units.



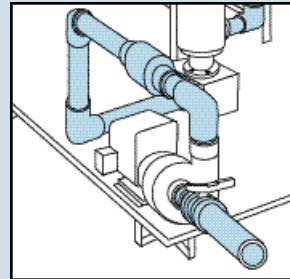
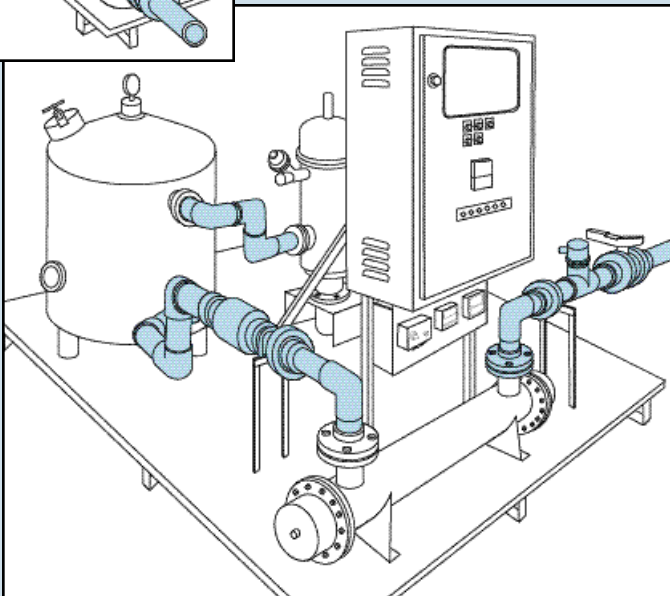
TWT-TWCS-500—Designed to treat 30 GPM/ 2 inch In/Out of System (TWT-UV5000) TWCS Approximate Dimensions: Size, Height, Width & Depth (TBD) Approx sump volume in gallons 0-4000 Approx tonnage capacity (To Be Determined)



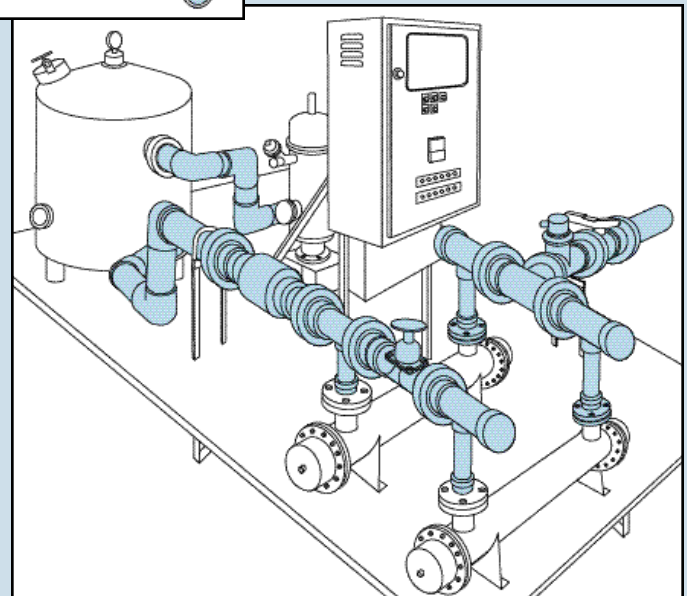
TWT-TWCS-1000—Designed to treat 50 GPM/3 inch In/Out of System (TWT-UV6000) TWCS Approximate Dimensions: Size, Height, Width & Depth (TBD) Approx sump volume in gallons 4000-6000 Approx tonnage capacity (To Be Determined)



TWT-TWCS-2500—Designed to treat 80 GPM/4 inch In/Out of System (TWT-UV100-6) TWCS Approximate Dimensions: Size, Height, Width & Depth (TBD) Approx sump volume in gallons 6000-10,000 Approx tonnage capacity (To Be Determined)



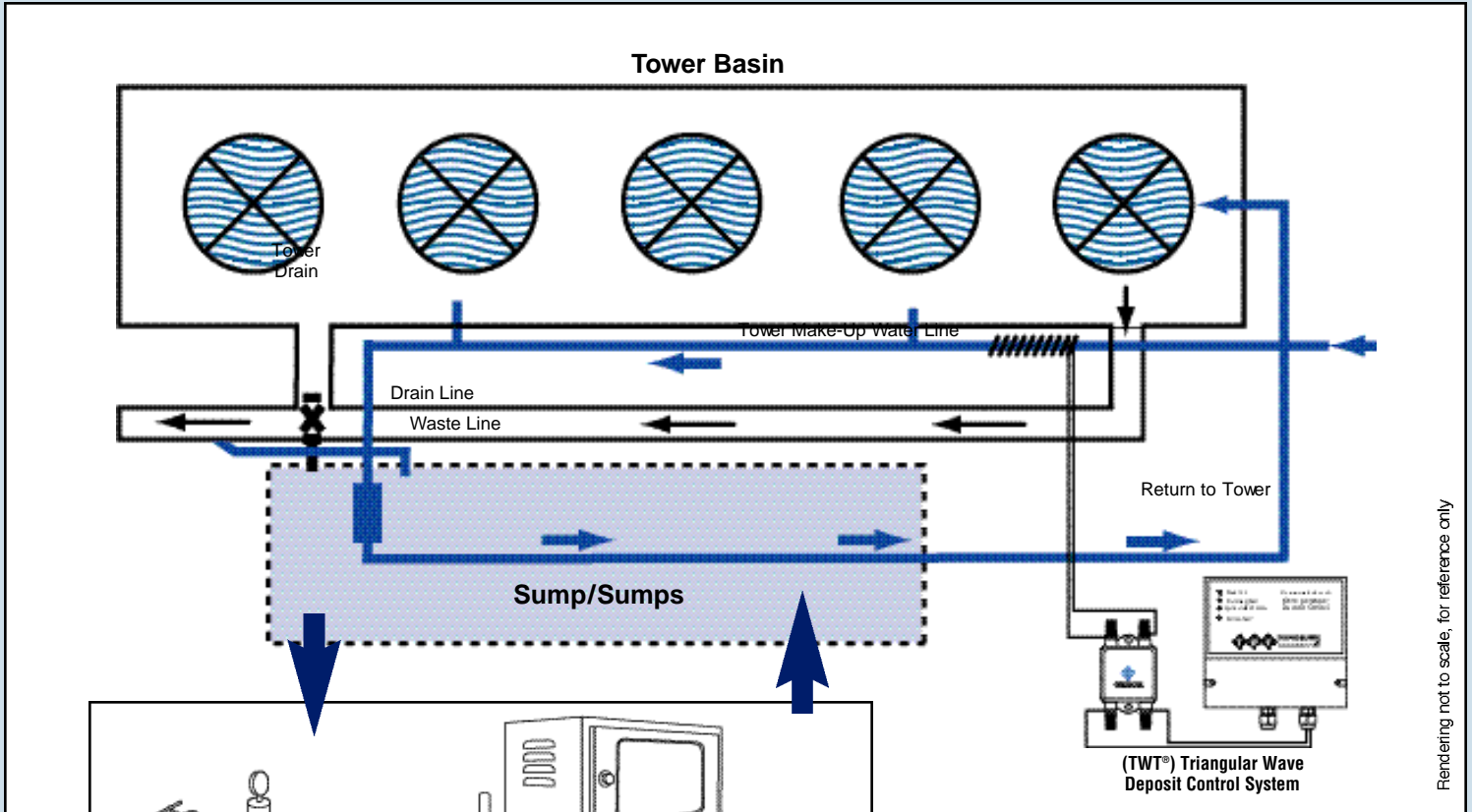
TWT-TWCS-5000—Designed to treat 120 GPM/6 inch In/Out of System (2-TWT-UV100-6) TWCS Approximate Dimensions: Size, Height, Width & Depth (TBD) Approx sump volume in gallons 10,000-15,000 Approx tonnage capacity (To Be Determined)



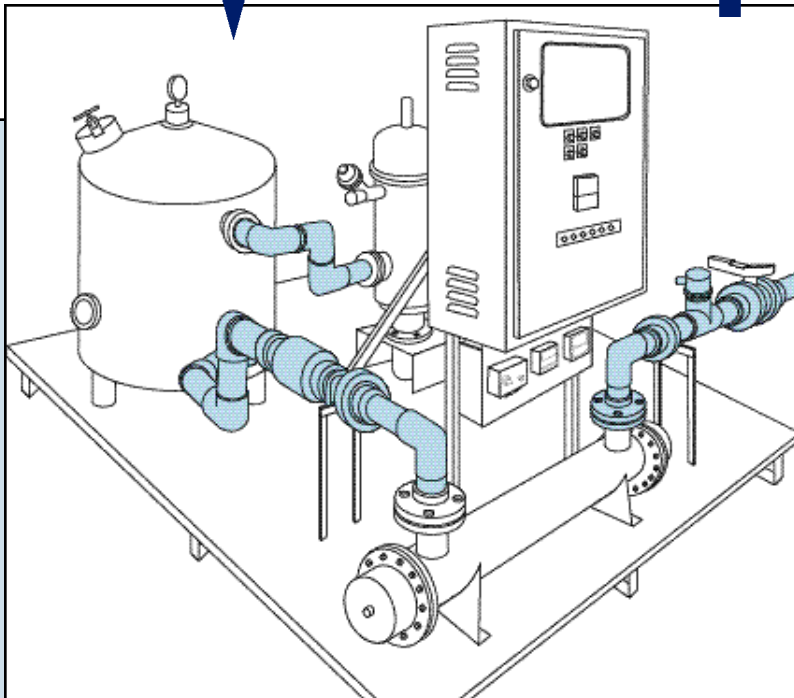
TWCS are custom built according to customer system application, treatment and GPM requirements. Component assembly, size and system weight to be determined at at time of purchase based on completed proposal. Component and flow diagram not to scale, for reference only.

Improve Operating Efficiency And Life Cycle Of Equipment

The TWT-TWCS series system are designed for use on non pressurized or open loop applications and installation (**side-stream**) systems. TWCS are designed to be piped/plumbed into and located near the sump of the cooling tower and/or towers equipment. When installed on cooling tower sump/sumps, discharge can be accomplished without effecting and/or interrupting the cooling tower operation. TWCS systems can be installed outdoors near cooling tower or indoors away from cooling tower. One TWCS system may control multiple cooling tower sumps on same level/roof area.



Rendering not to scale, for reference only



A TWT Deposit Control system on the make up feed line of cooling tower(s) and or related equipment, should be installed to treat all of the water all the time.

Make up water feed line application:
Typically 1" - 1½" or 2" Copper Pipe.

Recommended TWT Products:

TWT-5C8-401 or TWT-5C8-402 Deposit Controller (depending on pipe size at POU). And TWT-CSE-0227 copper pipe signal enhancer (must if copper pipe application).

The TWT Reaction Chamber is part of the TWT Deposit Control Technology. 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.

See TWT website for additional information.

For facilities with multiple treatment and applications needs. In order to ensure the greatest level of performance and satisfaction in your work with the TWT products and/or 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 facility and/or industry specific needs.

TWT® Technologically Advanced Method for Water & Fluid Management Providing Comprehensive End-To-End Solutions

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.

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 bio-film is eliminated and bacteria die
- 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 TWT-TWCS System in as little as 18 to 24 months. (lifecycle savings adds dollars to your bottom line)
- 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 pre-treatment 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 electro-magnetic 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.

Let TWT custom design a system to meet your specific application, system integration, and/or retro-fit needs.

TWT® Physical Water Treatment System.
“The Smart Solution”



TWT® Technologically Advanced Methods for Water & Fluid Management “The Competitive Edge”

TWT-TWCS Systems can be customized to meet and fit almost any cooling tower and related equipment application and treatment requirements. Facilities with multiple treatment applications and needs should contact TWT engineering for specific use and application guidelines. Other optional equipment may be determined and added to system after project survey and/or customer needs have been established.

There may be a charge for all requested application and installation renderings requested by customer. Customized illustrated application and installation renderings to meet customer, industry and/or project treatment needs. Charges to be determined at time of request and project time required. If project RFQ is accepted a 50% refund may be available (TBD) shared economic cooperation.

Systems are factory engineered, assembled and delivered as a complete packaged all-in-one water/fluid treatment unit. TWCS units are shipped ready to be put in place, piped in to cooling tower sump, plugged in and ready to operate. (read operations manual prior to starting up system) All TWT-TWCS systems are shipped with easy to follow application, installation and operational manuals.

Product: TWT-TWCS Series

Dimensions and Weight: To be determined at time of purchase

Electric: 1 Phase 120/240 Volts • Amps vary according to model chosen • 60 Hz 4kw, depending on component assembly. (Other current source available upon request)

Warranty: 1 year parts and labor for defective parts or workmanship on mechanical components – 90 days for electrical components

Delivery: 6-10 weeks (after clarification of all technical details)

Price: (RFQ) To be determined at time of purchase – Does not include tanks, piping, pumps, floats, valves and/or other necessary and related equipment to and from system.

FOB: Company Warehouse

Payment Terms: 60% with purchase order, 30% on delivery, 10% thirty (30) days after delivery

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 and weight for products before TWT has a confirmed and accepted purchase order in-house. Installation: Customer/owner responsibility. TWT engineering provides technical support before, during and after installation

Optional Components

Off-Site Remote Monitoring (Diagnostics) • TDS meter • PH meter
 Conductivity meter • Blow down control valve • System cover for outdoor installation
 Replaceable cartridge filtration system in place of media filtration when and if required
 TWT-TWCS series system component sizing and assembly will be determined according to capacity, GPM and treatment requirements at time of purchase.

TWT-Total Water Control Systems are custom engineered and built to order only

Process components:

Filtration • Deposit Control Technology
 Disinfection • Purification • Monitoring, Pump and...
 other related equipment are sized, assembled, integrated and set up to meet HVAC site, treatment and customer requirements.

Larger sized systems (for higher sump volume treatment) available upon request

DON'T WAIT...contact us today (Fax: 201 576-0410 • info@triangularwave.com) for the Dealer/Distributor near you and/or for information on what TWT system will meet your specific application needs!

To learn more, visit Triangular Wave Technologies, Inc. comprehensive website at

WWW.TRIANGULARWAVE.COM

Thank you,
 The Team at TWT, Inc.



IN PARTNERSHIP WITH

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