

# 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 world-wide, 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 D5  
"Know what is in your water"

The basic functions & components of Triangular Wave Technologies, Inc. (TWT) fluid treatment systems can be designed, integrated and assembled to combine various treatment methods that meet your industry specific process needs.

***TWT has extensive design, engineering, and manufacturing ability to work with customers to use our products in whole or component form, as a component assembly, or as an accessory to their primary product. TWT offers custom design, private labeling at cost effective pricing schedules. Take advantage of our outstanding manufacturing and marketing expertise -- let TWT custom design a product and/or system to meet your specific application needs.***

***TWT will work together with your sales and technical staffs to develop fluid management systems and system enhancements, product marketing initiatives, 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 systems to continually innovate to be the leader in fluid and water management solutions.***

#### ***Filtration Systems:***

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 residential, commercial, industrial facilities, where the source of water may be ponds, wells or streams 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, especially for water intended for human consumption. Filtration systems provide a bacteriostatic environment and are designed to remove, volatile organic chemicals, hydrogen sulfide and sulfur, herbicides, pesticides, chemical fertilizer residues, trihalomethanes and many other pollutants. The filtration units utilized in TWT systems are comprised of several media that remove harmful chemicals, metals, and toxins from the water as it passes through these layers. The TWT Filter media can utilize a sediment filter, a dual media KDF-55 granular activated carbon filter, extruded carbon activated block filter, Silica, DE, or other filter media upon request. TWT filter system/media can be configured to trap particles of various micron sizes. The end result is clean and healthy water that is free of chemicals and organic pollutants.

#### ***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. 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.

#### ***Ultra-Violet Disinfection:***

The UV disinfection technology used in the system to provide safe, potable drinking 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% kill rate" The output water is thus disinfected and offers exceptionally high quality for human consumption.

#### ***IonGuard Purification:***

The IonGuard Purification System purifies water through a process called ionization. This process utilizes a low voltage direct current [DC] to place precise and minute amounts of copper and silver ions into water systems. Copper ions kill algae and silver ions kill bacteria. The IonGuard Purification System is an electrolytic copper/silver ion generator. The system units contain specially cast copper/silver alloy electrodes. These electrodes are mounted in a housing designed for easy access ( HVAC & Pool Environments).

#### ***Chlorine Residual Injection System:***

Depending on the plans for storage of the output water produced by the system. Chlorine residual levels may be adjusted as required. The chlorine residual will be helpful in maintaining pathogen-free drinking water while in storage for extended periods of time.

#### ***pH(+) and pH(-) Injection System:***

Injection system to maintain proper pH levels at all times.

#### ***System recirculating line adapter:***

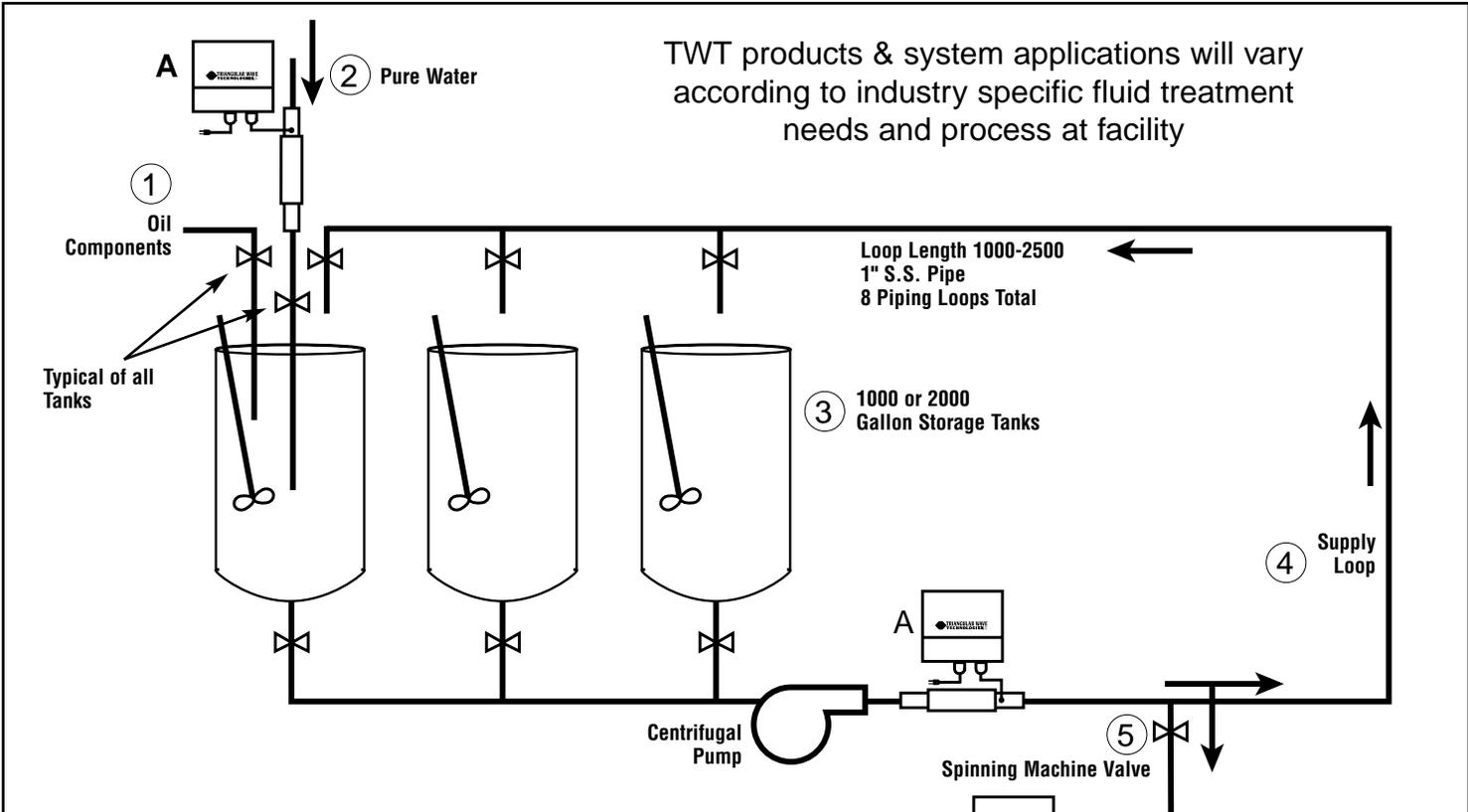
An alternative or addition to chlorine residual, this adapter can be integrated (installed) to attach external storage to system for re-treatment.

#### ***Fluid Treatment Systems:***

TWT water treatment systems are ruggedly constructed for exceptional performance and long service life.

#### ***Ozonator Disinfection/Purification***

The Ozonator is a natural, safe way to purify water in many different applications. It eliminates the need for chemicals which can be irritating to people and costly to budget. The Ozonator converts Oxygen (O<sub>2</sub>) into (O<sub>3</sub>) 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



**NOTE:  
Recommended  
Application**

- A- TWT-5C8-401 Deposit Controller
- TWT-ISRC 1/2" ST/ST Reaction Chamber



TWT-5C8-401 Deposit Control



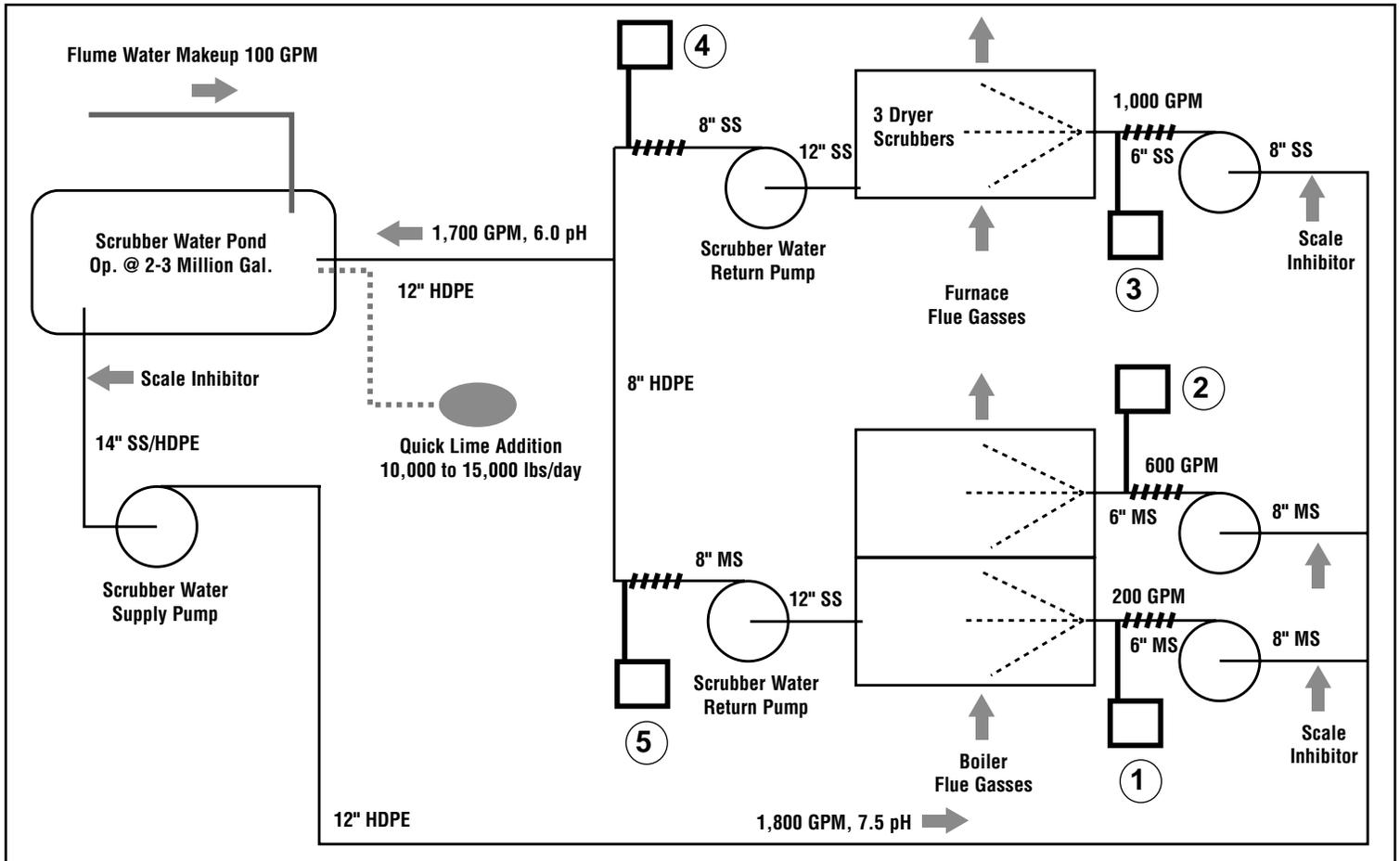
TWT-ISRC 1/2" ST/ST Reaction Chamber

# SCHEMATIC RENDERING OF TWT FLUID TREATMENT APPLICATION

For Scrubber System For Sugar Co., Nyssa, Oregon

Total Pond capacity is 5,000,000  
 Boiler burns low sulfur coal  
 3 Dryer furnace burn high sulfur coal

TWT products & system applications will vary according to industry specific fluid treatment needs and process at facility



ST/ST Reaction Chamber  
 Flanged Ends– TBD • Threaded Ends– TBD  
 Lengths Ends– TBD

- Notes: Will have positive treatment effect in pond within 24/48 hours of start-up
- Depending on pre-existing conditions of plumbing lines & equipment, positive treatment effects may take longer (30 to 60 days)

### Deposit Control Systems

1. TWT-5C8-406
2. TWT-5C8-406
3. TWT-5C8-406
4. TWT-5C8-408
5. TWT-5C8-408

### Industrial ST/ST Reaction Chambers

- TWT-ISRC-6
- TWT-ISRC-6
- TWT-ISRC-6
- TWT-ISRC-8
- TWT-ISRC-8



TWT-5C8-406  
 Deposit Controller

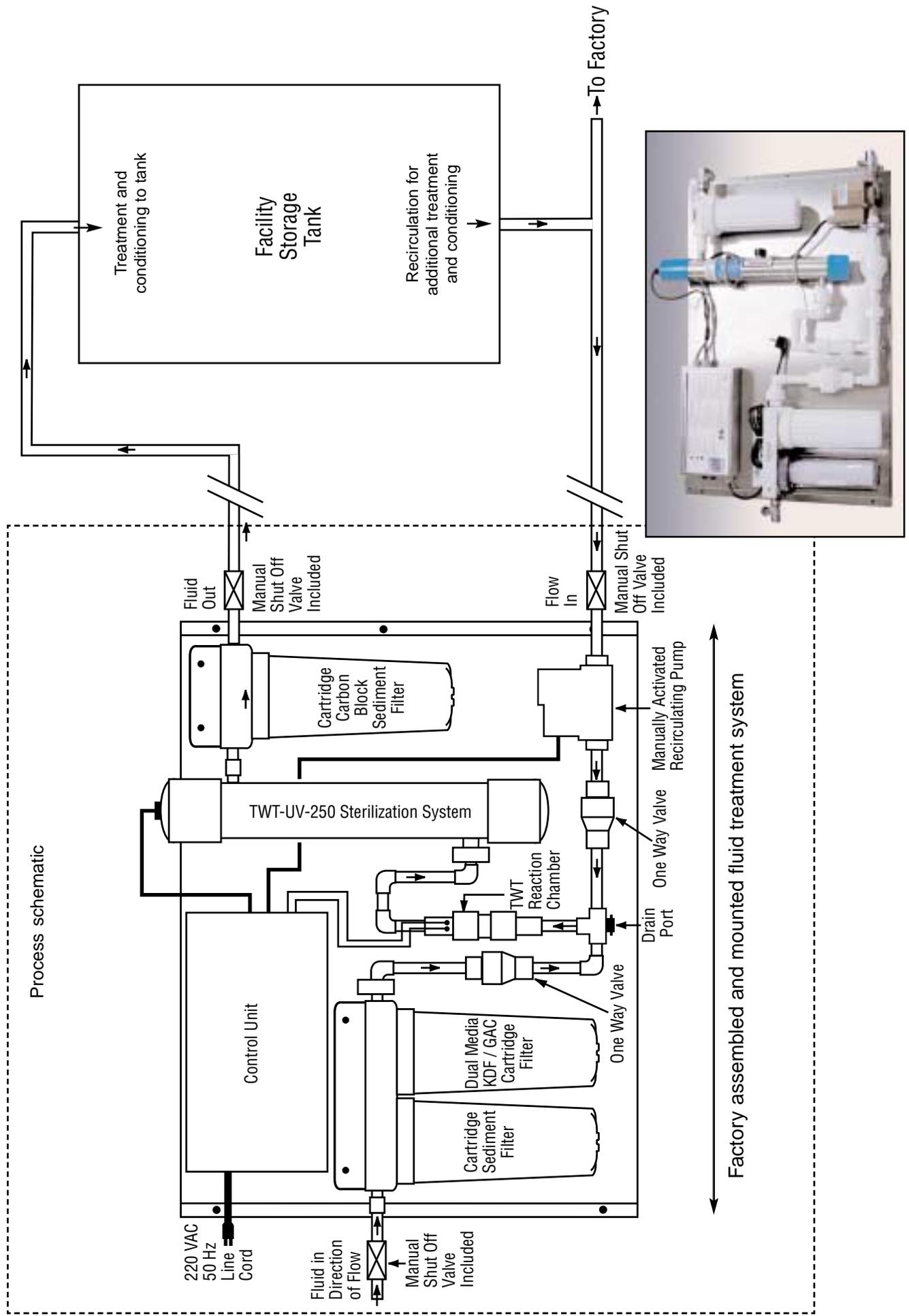


TWT-ISRC-6 Industrial Stainless Steel Reaction Chamber

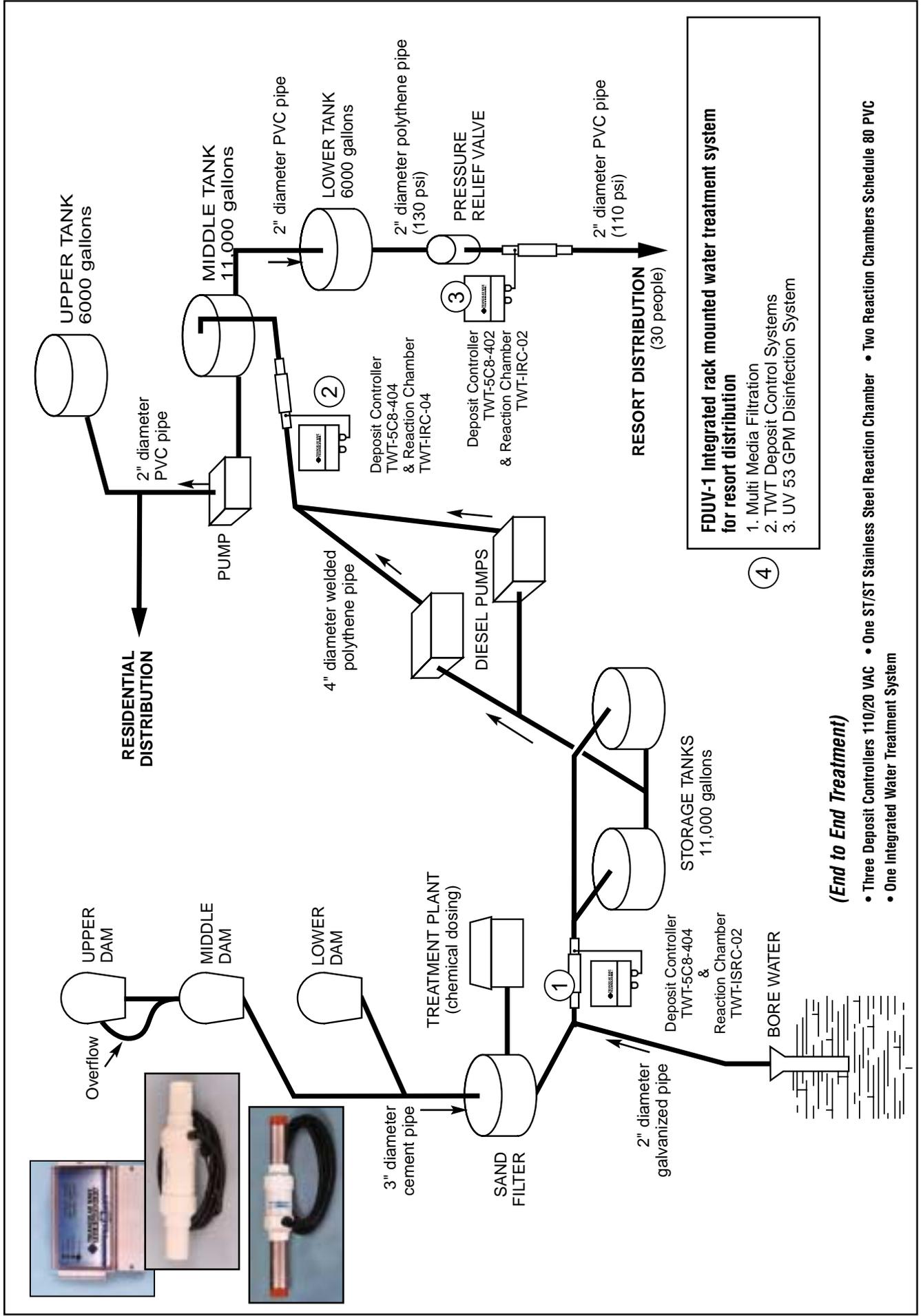


TWT Deposit Controller &  
 Industrial Stainless Steel  
 Reaction Chamber

# SCHEMATIC RENDERING OF A TWT FLUID TREATMENT SYSTEM (SOVIET REPUBLIC)



# WATER CATCHMENT/FILTRATION/SUPPLY SYSTEM FOR ISLAND RESORT



# COMMERCIAL AIRCRAFT SYSTEMS

Recommended TWT Deposit Control Technology Products Application for End-To-End Fluid Treatment

## Commercial Aircraft

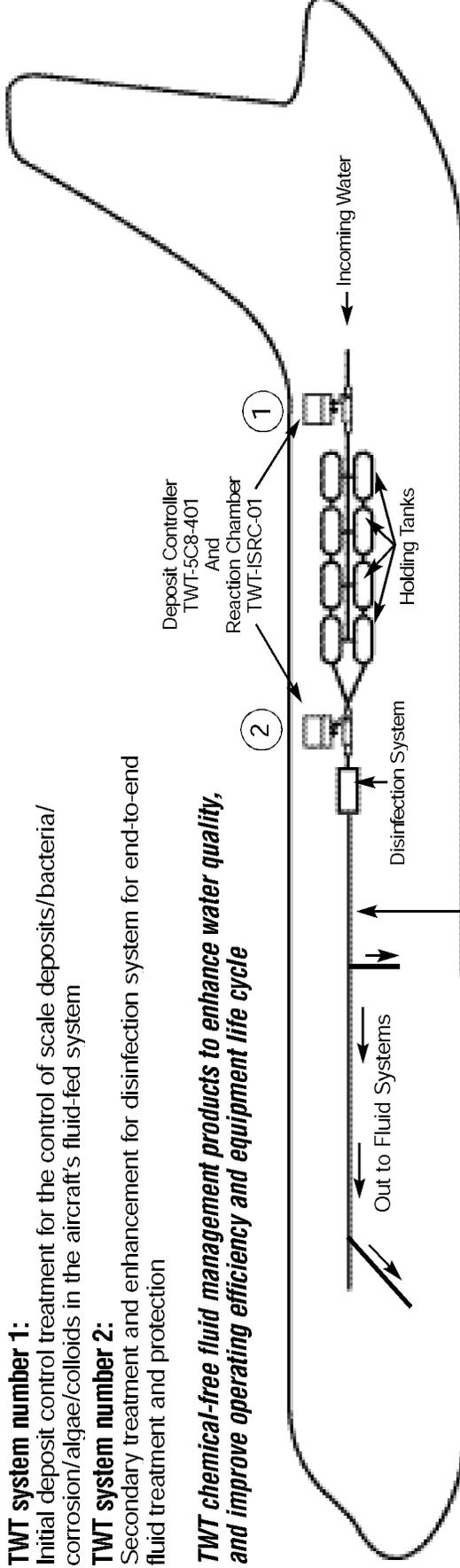
### TWT system number 1:

Initial deposit control treatment for the control of scale deposits/bacteria/corrosion/algae/colloids in the aircraft's fluid-fed system

### TWT system number 2:

Secondary treatment and enhancement for disinfection system for end-to-end fluid treatment and protection

*TWT chemical-free fluid management products to enhance water quality, and improve operating efficiency and equipment life cycle*



TWT-5C8-401 Commercial/Industrial Deposit Controller 110/20 VAC



TWT-ISRC-01 Industrial SI/SI Reaction Chamber

TWT Systems help to ensure continuous water treatment and conditioning from various worldwide water sources.

TWT products & system applications will vary according to specific fluid treatment needs and process on aircraft



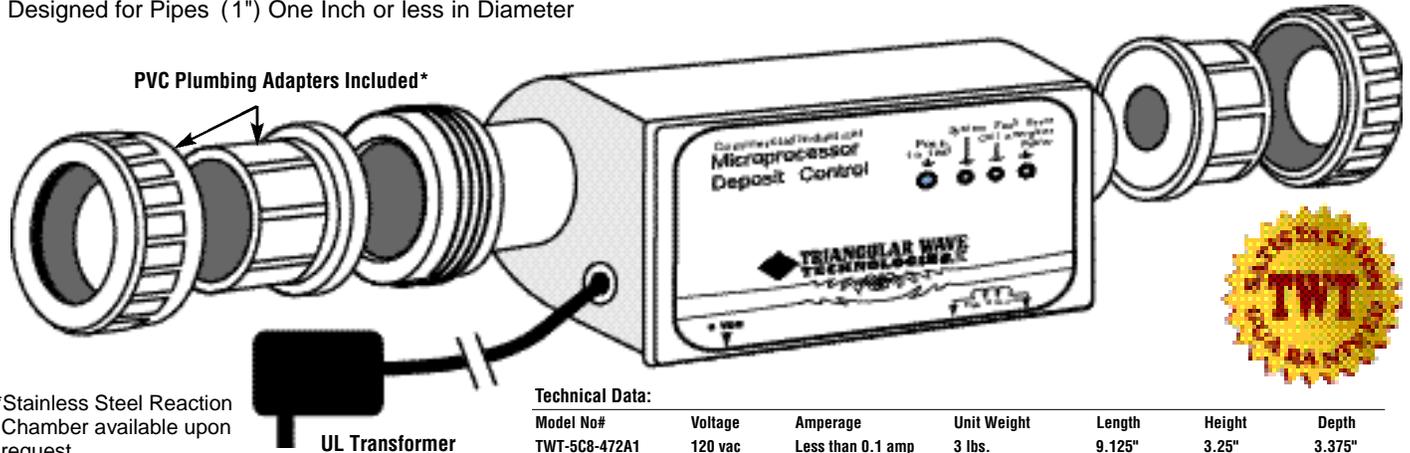
# Triangular Wave Technologies Inc. Patented Electronic Deposit Controller & PVC Reaction Chamber Unit

A9

Control scale and bio-fouling in water-fed systems & applications

TWT-5C8-472A1 Deposit Control Unit  
Designed for Pipes (1") One Inch or less in Diameter

Schematic rendering of the TWT-5C8-472A1 deposit control unit



\*Stainless Steel Reaction Chamber available upon request

UL Transformer

#### Technical Data:

Model No#	Voltage	Amperage	Unit Weight	Length	Height	Depth
TWT-5C8-472A1	120 vac	Less than 0.1 amp	3 lbs.	9.125"	3.25"	3.375"

Designed for pipes (1) one inch or less in diameter • Costume order for larger size pipe application available upon request

## Applications

DECORATIVE WATER FOUNTAINS • SPAS & ABOVE GROUND POOLS  
LAWN & SPRINKLER SYSTEMS • MARINE INDUSTRY-HOUSEBOATS  
MOBILE HOMES • RESIDENTIAL/COMMERCIAL  
FACILITIES AND MANY MORE!

PREVENTS SCALE BUILD-UP  
CONTROLS SLIME DEPOSITS  
REDUCES CORROSION  
CONTROLS ALGAE AND BACTERIA  
MAINTAINS EFFICIENT HEAT TRANSFER  
EXTENDS LIFE OF ELEMENT

Designed for safety: The output is safe to both personnel and equipment. There is **NO ELECTRICAL CONTACT WITH THE PIPE**

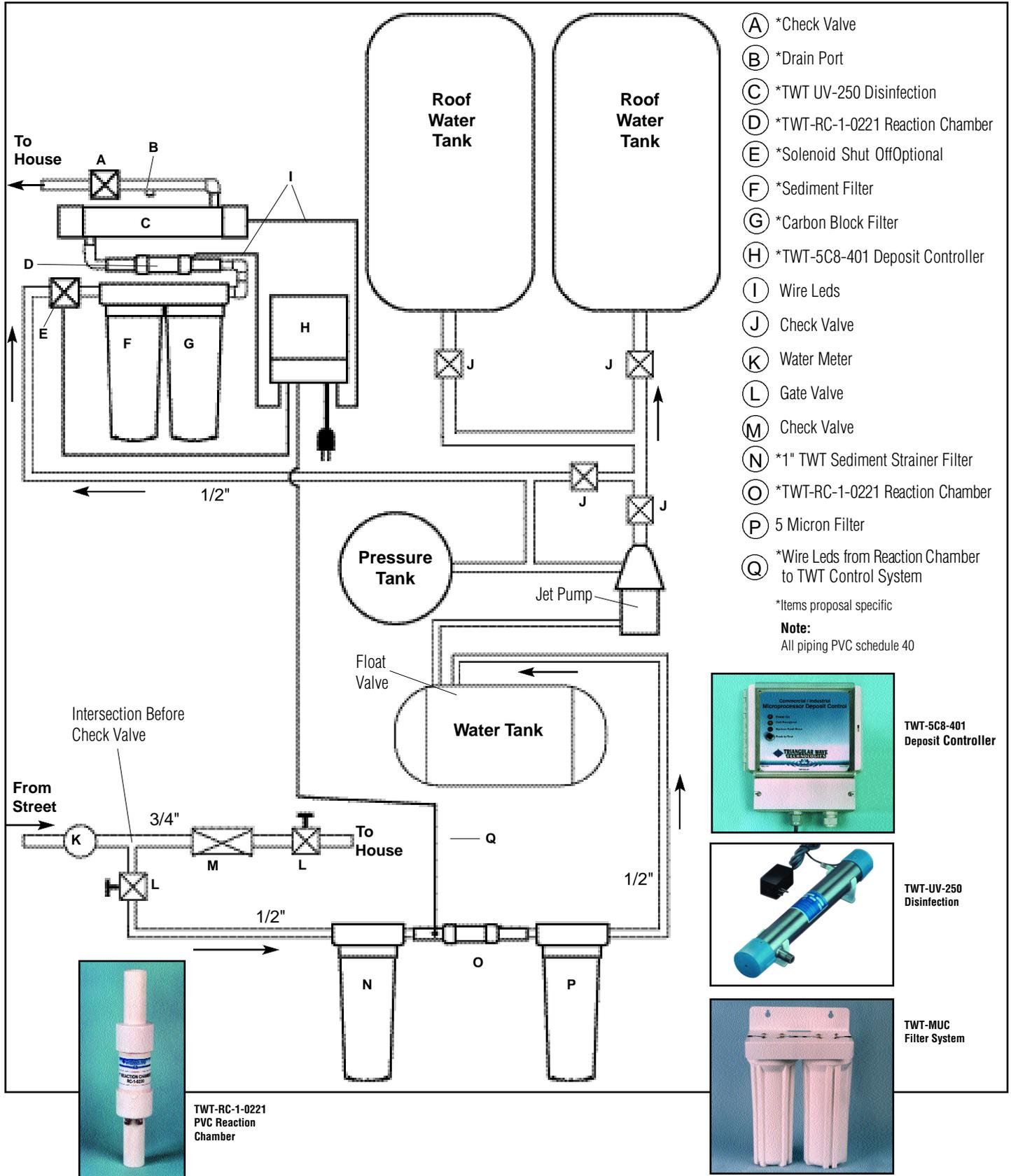


**TRIANGULAR WAVE**  
**TECHNOLOGIES, INC.**  
FLUID MANAGEMENT SOLUTIONS  
www.triangularwave.com

# Triangular Wave Deposit Control Systems

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## Residential Home Solutions ( Puerto Rico )



# SAFE DRINKING WATER ANYWHERE...ANY TIME!



**TWT-UV-60 (60 GPM)  
Treatment System**

## Transportable Water Treatment Systems with Multi-Stage Micro-Filtration, Deposit Control and Ultra-Violet Disinfection

### Custom Upgrades available upon request:

- Systems can be sized to suit virtually any required flow rate
- Designed as turnkey systems to process required GPM of input source water. Output water is of extremely high quality and free from disease-causing pathogens.



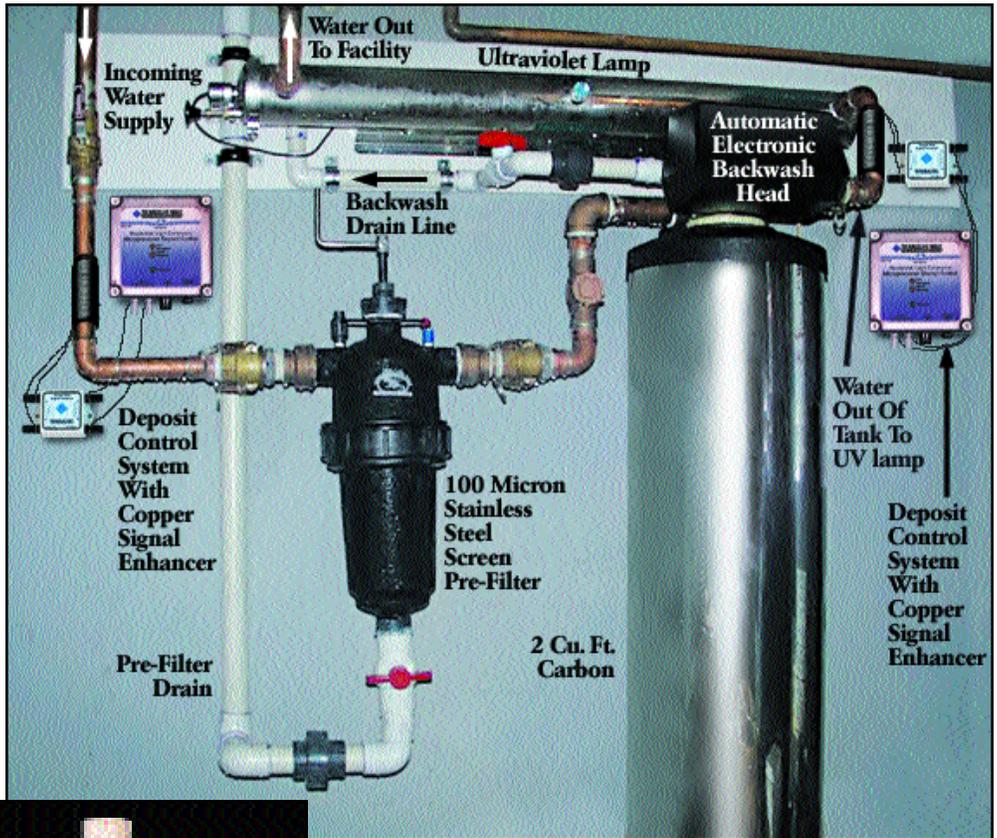
**TWT-UV-200 (200 GPM) Treatment System**

- Input Water
- Automatic Pre-Filtration
- TWT Deposit Control
- Multi-Media Filtration
- DE Filter (optional)
- Centrifugal Cartridge Finish Filter
- TWT Deposit Control
- UV Disinfection
- Chlorine Residual (optional)
- Output Water
- Storage (not included)
- Covered trailer (optional)
- Recirculating line adapter (optional)

## SAFE DRINKING WATER ANYWHERE...ANY TIME!

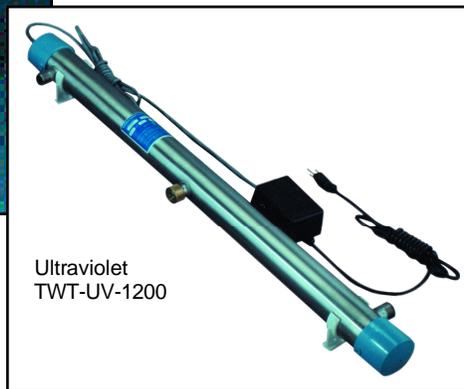
- Military Camps • Disaster Relief • Nursing Homes • Hospitals • Schools • Refugee Camps  
 • Emergency Preparedness • Cholera Epidemics • Remote Construction Projects • Small  
 Community Systems • Environmental Clean-Up Sites • Other Commercial & Industrial Applications  
 Requiring High-Quality, Safe Drinking Water

## HARD WATER PROBLEMS SOLVED EASILY

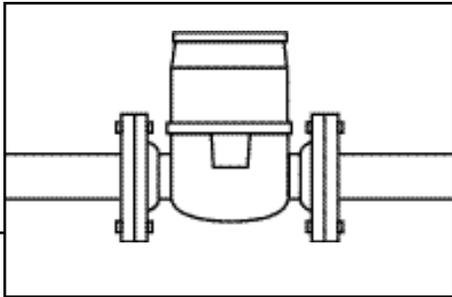


End-to-end Fluid Treatment Product Application. Custom design your own fluid management system to meet your home and/or office specific needs.

Engineered products and systems that 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 home, office, site and application.

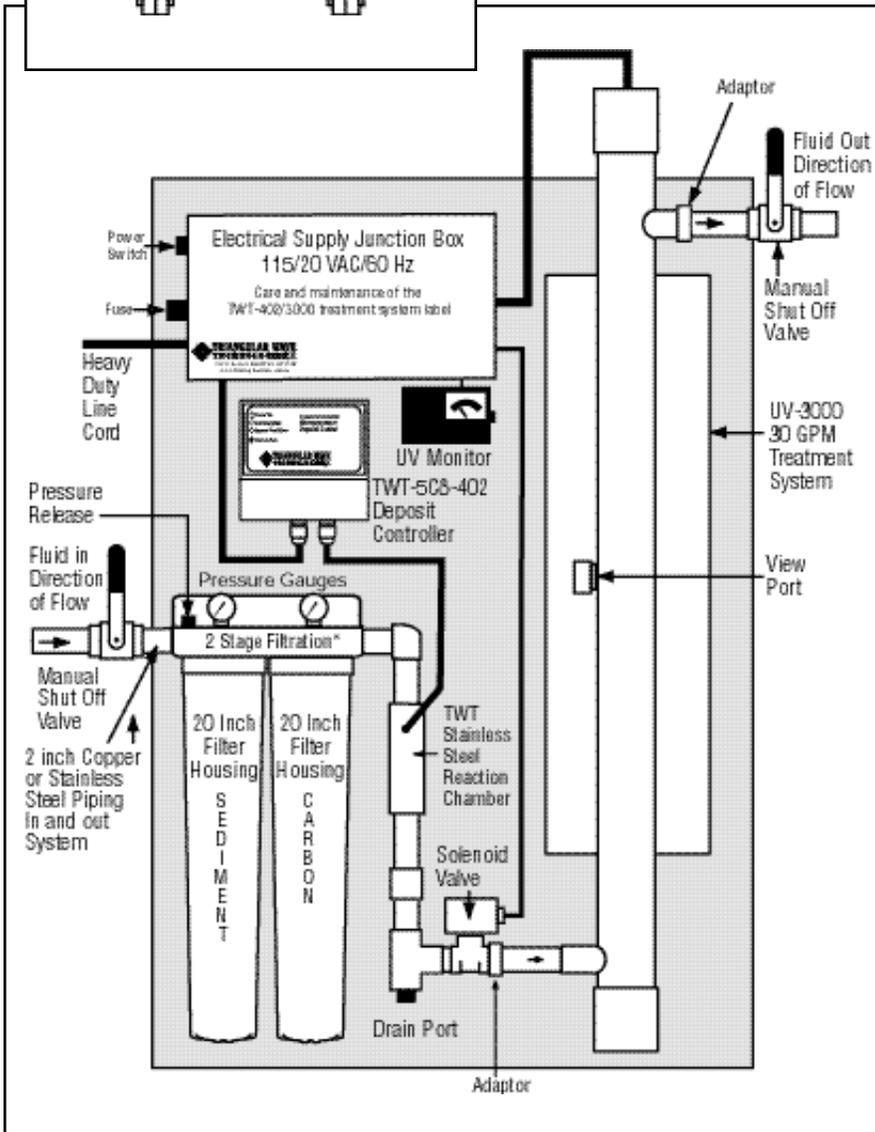


Ultraviolet  
TWT-UV-1200



**Point of Treatment**

Main water feed line (after water meter) to facility



**Option No.1 Configuration**

**Option No.2 Configuration-See back page**

Depending on water quality, GPM, and available space

- Wall mounted racked water treatment system
- Stainless Steel wall mount frame
- Sediment & Carbon Filtration
- TWT Deposit Control Technology
- Ultraviolet Disinfection & Purification

**Factory Assembled & Mounted Fluid Management System**

*This fluid management system is a compact, self-contained, wall-mounted unit for the treatment of water.*

Applies all the needed elements for maximum fluid protection, management, and peace of mind in one simple packaged solution. State-of-the-art TWT Filtration, Microprocessor Deposit Controller, Reaction Chamber, and UV Disinfection/Purification 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 gpm's and water conditions you need.

Schematic rendering for reference only

- TWT-402/3000 2-Stage Filtration, 30 gpm Treatment System
- Other filtration mediums if required available upon request

**Installation: Must have enough room on all sides for filter and UV replacement & maintenance**

**Please Note:**

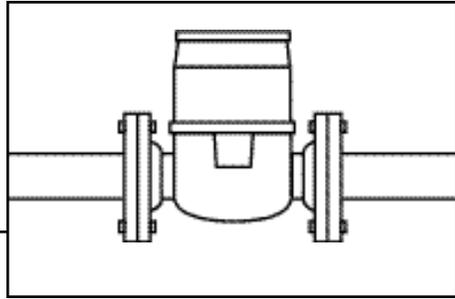
System engineering design, weight, size and system component, configuration & assembly may vary based on water conditions, application space and industry specific needs

**Specifications:**

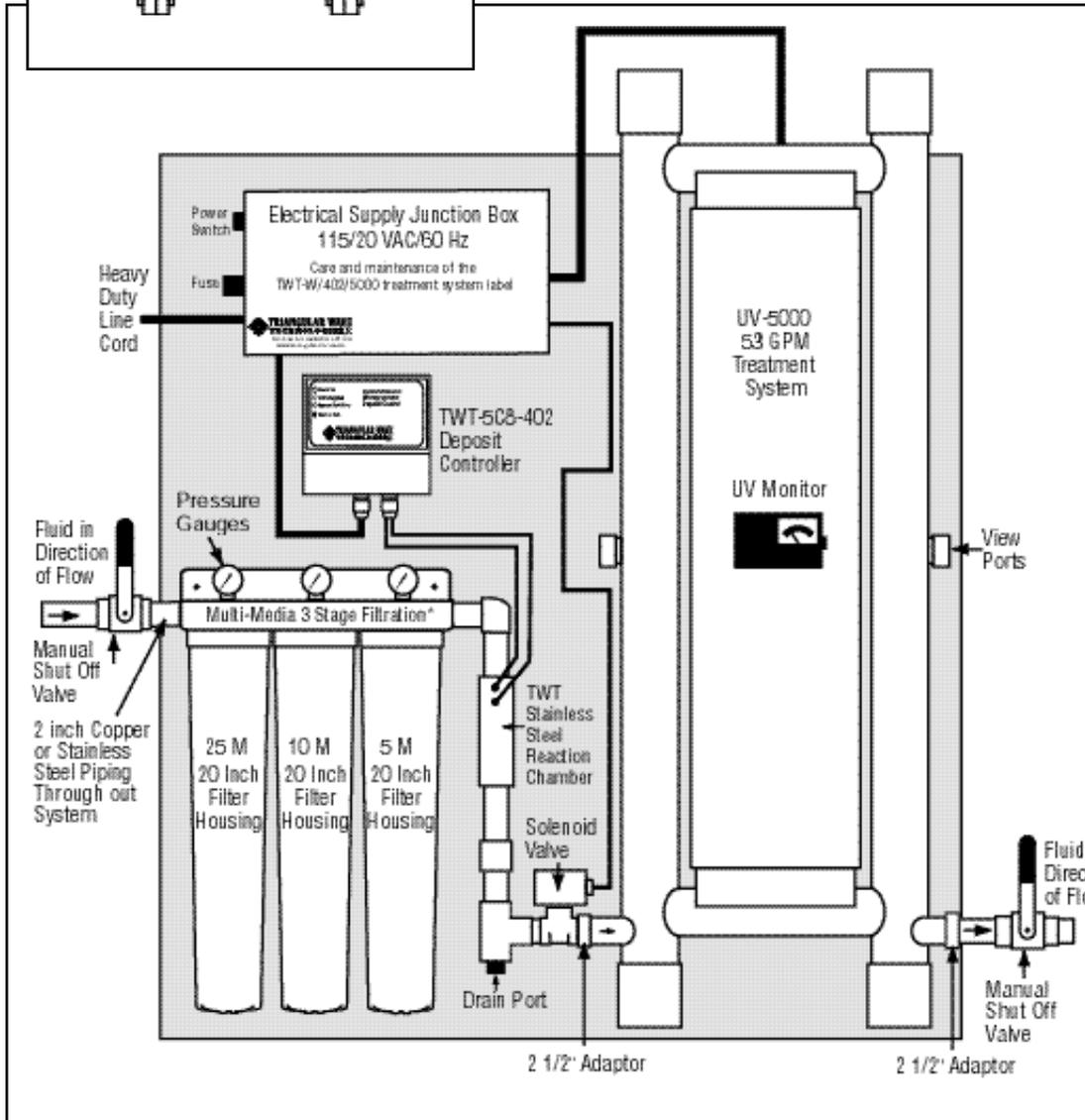
Factory assembled and mounted on stainless steel frame with mounting brackets and/or holes provided, size approx. 52" X 32", weight 00 Filter medium used in 2-stage filter housings is configured and based upon impute water quality and customer and/or industry specific treatment requirements.

**Note:** TWT Inc. recommends that an initial supply of replacement products e.g., replacement filters, UV lamps etc. be stored at owners facility at all times, that will insure uninterrupted service and treatment.

# Points-of-Treatment for Schools, Hospitals, Nursing Homes and Other Commercial & Industrial Applications Requiring High-Quality, Safe Water A9



Main water feed line (after water meter) to facility



## Option No.2

Depending on water quality, GPM, and available space

- Wall mounted racked water treatment system
- Stainless Steel wall mount frame
- 3 Stage Sediment & Carbon Filtration
- TWT Deposit Control Technology
- Ultraviolet Disinfection

## Factory Assembled & Mounted Fluid Management System

*This fluid management system is a compact, self-contained, wall-mounted unit for the treatment of water.*

Applies all the needed elements for maximum fluid protection, management, and peace of mind in one simple packaged solution. State-of-the-art 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. TWT solutions are scalable to fit the volume and water conditions you need.

Schematic rendering for reference only • TWT-W-402/5000 Treatment System • Filter medium & tank size to be determined

### Please Note:

System engineering design, weight, size and system component assembly may vary based on application and industry specific needs Specifications:

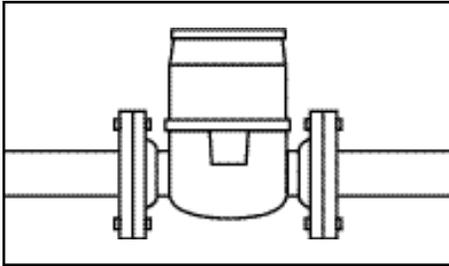
Factory assembled and mounted carbon steel wire rack with mounting brackets, size aprox. 00" X 00", weight 00

Filter medium used in 2-stage filter housings is configured and based upon impute water quality and customer and/or industry specific treatment requirements.

### Note: Optional

**A redundant (fail-safe) complete second UV Disinfection unit can be system integrated, to ensure uninterrupted treatment upon request (Price TBD)**

# Points-of-Treatment for Schools, Hospitals, Nursing Homes and Other Commercial & Industrial Applications Requiring High-Quality, Safe Water



Main water feed line (after water meter) to facility

## Option No.3

Depending on water quality, GPM, and available space

- Skid mounted water treatment system
- Stainless Steel skid
- Stainless Steel Hurricane sediment filter
- Stainless Steel Hurricane carbon filter
- TWT Deposit Control Technology
- Ultra Violet Disinfection

## Factory Assembled & Skid Mounted Fluid Management System

*This fluid management system is a compact, self-contained, skid-mounted unit for the treatment of water.*

Applies all the needed elements for maximum fluid protection, management, and peace of mind in one simple packaged solution. State-of-the-art 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. TWT solutions are scalable to fit the volume and water conditions you need.

### Please Note:

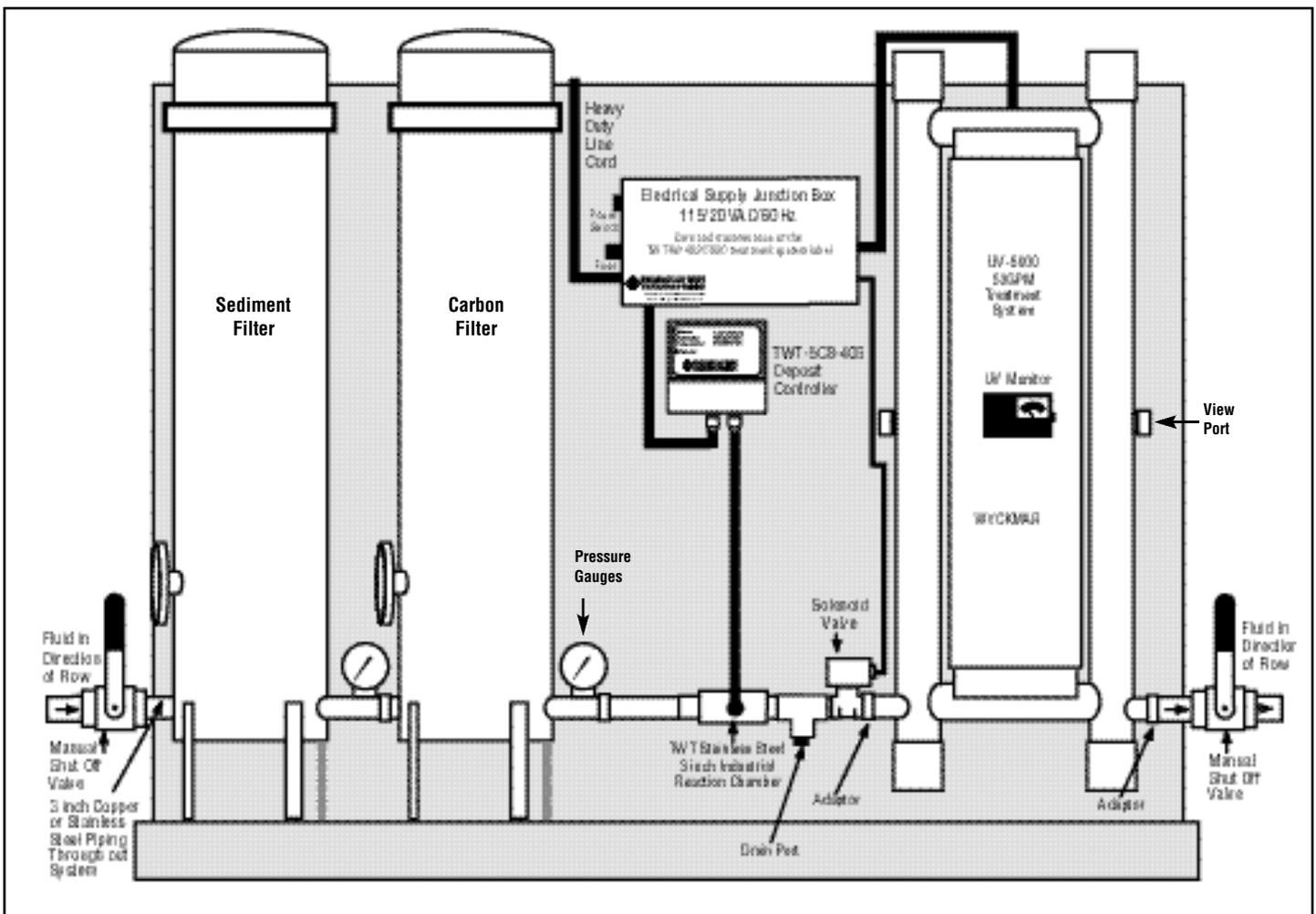
System engineering design, weight, size and system component assembly may vary based water conditions, quality, application and industry specific needs

### Specifications:

Factory assembled and skid-mounted. size aprox. 00" X 00", weight 00  
Filter medium used in 2-stage filter housings is configured and based upon impute water quality and customer and/or industry specific treatment requirements.

### Note: Optional

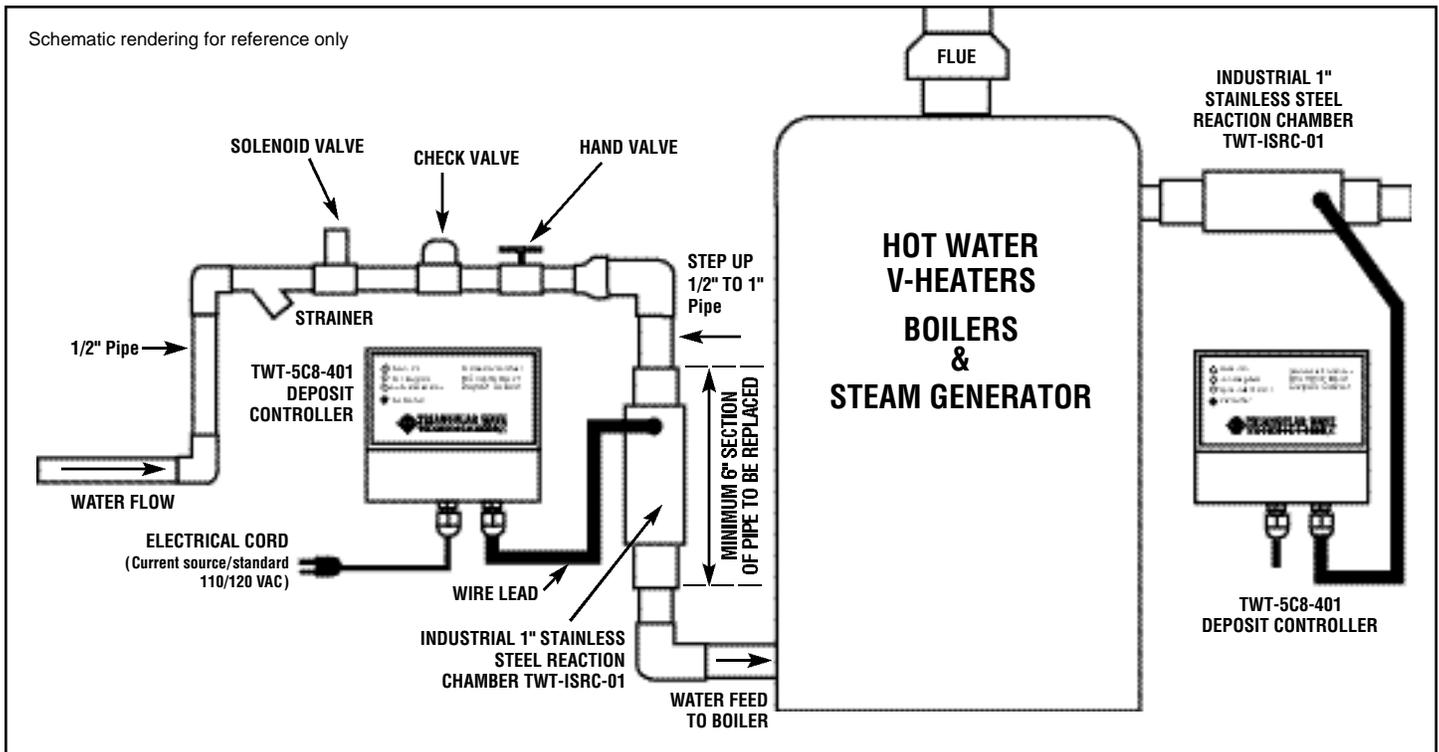
A redundant (fail-safe) complete second UV Disinfection unit can be system integrated, to ensure uninterrupted treatment upon request (Price TBD)



Schematic rendering for reference only • TWT-SM-403/5000 Treatment System

# Points-of-Treatment for Schools, Hospitals, Nursing Homes and Other Commercial & Industrial Applications Requiring High-Quality, Safe Water

## Vertical Hot Water Heater

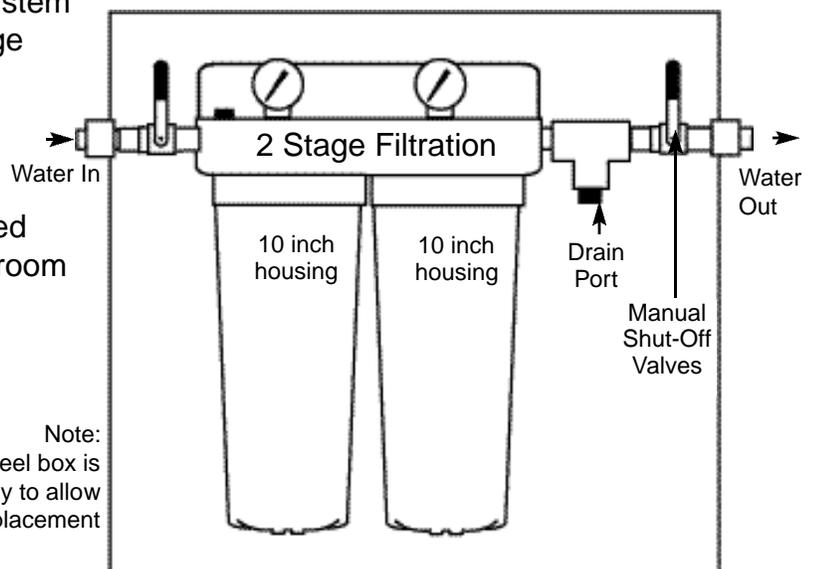


Vertical Hot Water Heaters only–Boilers, Steamers not part of proposal

## Points-of-treatment

### Local point-of-use (POU) filtration treatment system for sinks, water coolers etc.

- Stainless Steel Box or wire rack to protect system from vandalism w/hasp for lock and piano hinge
- 2 Stage 10 inch Filtration
- Mounting Brackets
- Incidental Installation Hardware
- Treatment system to be plumbed and mounted adjacent to sinks, fountains, leaving enough room for filter replacement and out of harms way
- Filter replacement wrench



Note:  
Stainless Steel box is sized appropriately to allow filter replacement

## Factory Assembled Skid Mounted, Fork Lift/ Fluid Management Treatment System

**This fluid management system is a compact, self-contained, skid-mounted unit for the treatment of water.**

Applies all the needed elements for maximum fluid protection, management, and peace of mind in one simple packaged solution. State-of-the-art TWT Filtration, Microprocessor Deposit Controller, Reaction Chamber, UV Disinfection and Chemical Feed Tank Injection System are combined to provide a start-to-finish answer to simplified prevention, treatment and management of water contamination dangers. TWT solutions are scalable to fit the volume and water conditions you need upon request.

### Specifications:

Factory assembled and skid-mounted.

Size approx. W 00 X H 00 X D 00, weight 00 ( vary according to custom design )

Filter medium used in 2-stage filter housings is configured and based upon impure water quality and customer and/or industry specific treatment requirements ( medium TBT).

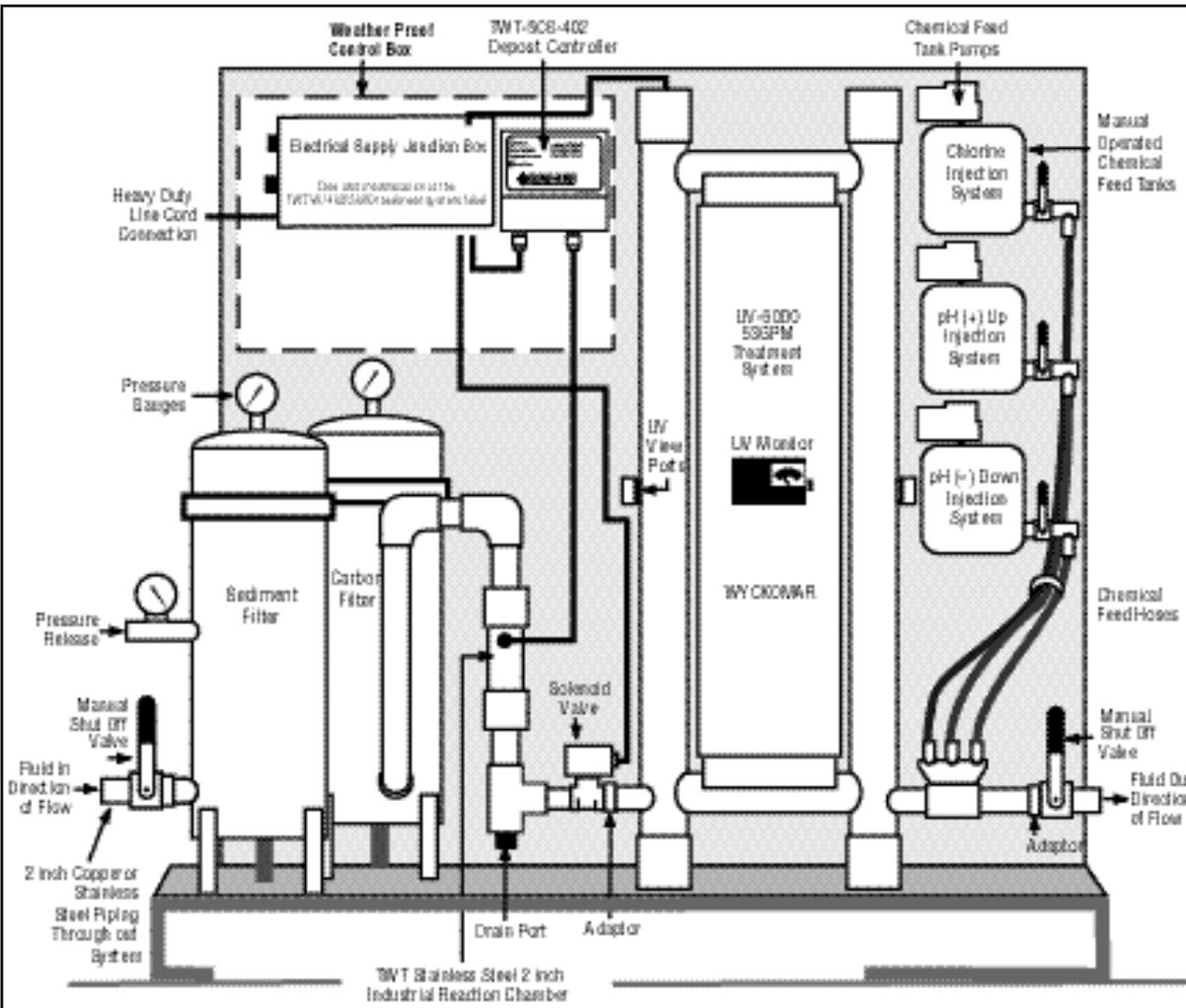
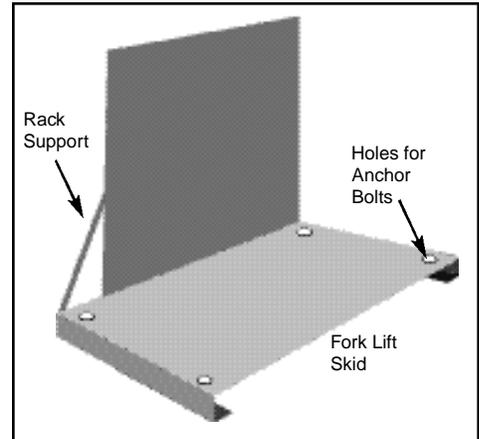
All electrical, piping, fittings, pumps, and materials (equipment) used in the system will be engineered and system integrated to conform to code requirement of the submitted RFQ.

### Note: Optional

**A redundant (fail-safe) complete second UV Disinfection unit can be system integrated, to ensure uninterrupted treatment upon request.**

**A complete backup system to allow for uninterrupted service when system is used in a very harsh environment is recommended.**

- Skid mounted water treatment system
- Stainless Steel skid
- Stainless Steel Hurricane sediment filter
- Stainless Steel Hurricane carbon filter
- TWT Deposit Control Technology
- Ultra Violet Disinfection
- Chemical Feed Tank Injection System



**Please Note:** System engineering design, weight, size and system component assembly may vary based on water conditions, quality, application, industry and/or customer specific needs

Schematic rendering for reference only, final rendering will be provided upon proposal acceptance

**Optional**  
Tent, Fiber Glass (vented) enclosure for entire system to protect against the elements (sand, dust, wind etc.) not included.

Piping, fittings, valves, and other material needed to and from system owners responsibility