

**Triangularwave Technologies, Inc. (TWT®)**

**Versatile Fluid Management Products & Systems To Effectively Meet The Needs Of Any Industry & Application**

- Control Scale Deposits
- Bacteria
- Corrosion
- Algae
- Colloids

**In All Fluid Based Systems**

**Homes / Office**

**Office Complexes**

**Refurbished Homes**

**Water Front Properties**

**Retirement Communities**

**Remote Areas of the World**

**Environmentally Friendly**

**Potable Water, Process and Waste Water Treatment & Conditioning**

- Residential
- Commercial
- Industrial



# TWT® THE SMART RAINWATER TREATMENT SYSTEM & METHOD

**Lots of Companies Provide Water Treatment Products and Systems...**

**TWT, Inc. Senses Environmental Needs with Intelligent Solutions**

**Safe Water Anywhere, Any Time!**

**The Green Market Answer: Chemical-Free**



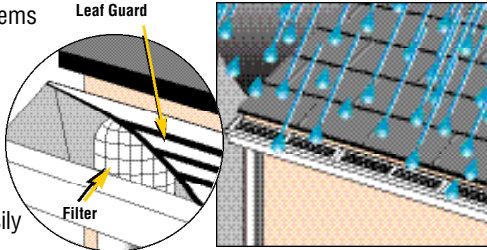
**Staged Filtration  
Ultraviolet Disinfection & Purification Technology**



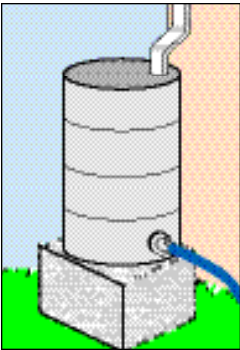


# Nature's way of conserving water worldwide. Rainwater capture systems for homes, offices, schools, commercial, industrial facilities and anywhere the need for clean water is required!

Rain water capturing systems are not complicated; they have been built and used worldwide for thousands of years. Capturing, holding, filtering & purification prior to distribution and use can be solved easily (as illustrated).



- Alternate water supply readily available when needed.
- Emergency use in all parts of the world • Nature's way of providing water conservation
- The worldwide uses are endless and provide safety for all concerned and beneficial savings as well.
- Irrigation, washing, cleaning, cooking, bathing, drinking and many other indoor and out-door uses.



The ever-growing need for water conservation, water and energy savings is in more demand daily for future generations to come.

- Rainwater capturing (**above & below ground**) and harvesting is needed and becoming more popular and cost-effective for many reasons.

### Benefits:

- Rain water capture systems are available from various suppliers in your area and can be sized to meet the needs of any flow rate required, site, application and/or facility.

**Now available from Triangularwave Technologies Inc, Chemical-Free GREEN modular water filtration and purification systems efficient and cost effective.**

- **Installation, on secure surface near rain water capture system.**
- **Connect to near by power source or inverter for battery power operation**

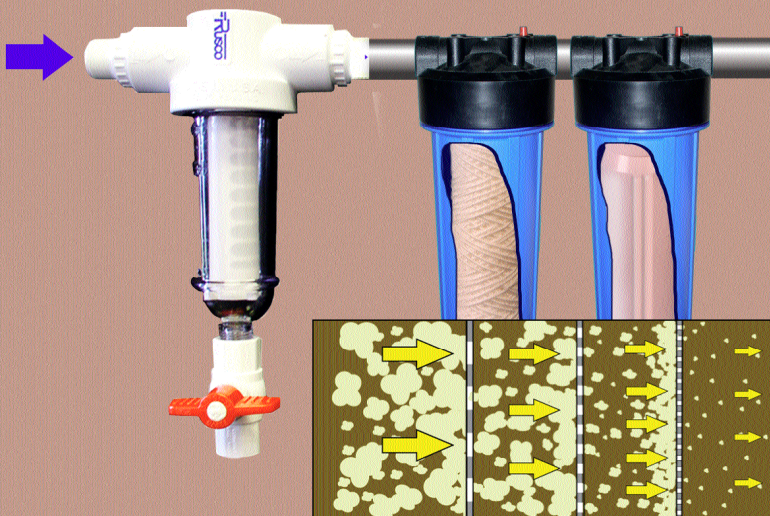
(12 volt / 24 volt battery not included)

Disconnect power from unit when not in use



TWT-RWH-4

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. Water is filtered to remove lingering sediment, chlorine, heavy metals, organic carbon compounds, volatile organic chemicals, pesticides and hundreds of other volatile organic compounds sometimes found in source water.



### Stage Filtration

The first step in achieving clean water is a filtration system. Filter with a built-in manual flush valve to purge built-up sediments in the bottom of the filter (as illustrated above). Filter will initially clean the water so the second stage replacement sediment and other media cartridges will have a much longer service and life cycle.

### Ultra Violet Disinfection & Purification

Ensure clean, safe rainwater before using: Ultraviolet Purifier kills Listeria, E.coli, Leptospirosis, Giardia, Cryptosporidium and other pathogens common in rain-water collection systems.

Ultraviolet disinfection systems are mysterious to many people - how can "light" kill bacteria? But the truth is, it can.

The Ultra-Violet (UV) disinfection & purification technology used in the system provides safe process and potable 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 contaminant's with a 99.9% or greater kill rate."

The output water is thus disinfected and offers exceptionally high quality water for process, human consumption and use.

Microscopic Disease-Causing Pathogens



# TWT: The Ultimate in Chemical-Free Rain Water Treatment & Conditioning

Modular systems integrated and combined for maximum effectiveness



Approximate Dimensions: 28" H X 25" Wide

## #TWT-RWH-4: 4 GPM TWT-RWH-2: 2 GPM (available upon request- not illustrated)

### Modular Unit Includes:

- One (1) Self-cleaning sediment filter
- One (1) 10" Double Filter Set – Sediment & Carbon
- One (1) 4-GPM Ultraviolet Purifier
- Filter wrench
- PVC / flexible tubing in/ out of system
- **Units available in 110/20V / 220/30V**

- **Optional:** One (1) inverter for battery powered operation (battery not included)
- **Optional:** Pressure gauges

Treatment units are shipped to customers ready to put in place, connect & operate

**Note:** All products are shipped with easy to follow application, installation and maintenance materials. Handy man and/or licensed plumbing contractor application and installation suggested.

Battery, pumps, pipes, hose connections, fittings and other related plumbing equipment needed, owners responsibility.

**Built to order only. Custom engineered, component assembled based on customer/industry specific requirements.**



12 volt or 24 volt DC to AC inverter converts DC current into conventional AC electricity. Connect one of these units directly to a battery to operate.



Approximate Dimensions: 28" W X 38" H

## # TWT-RWH-8: 8 GPM

### Modular Unit Includes:

- One (1) Self-cleaning sediment filter
- One (1) 20" Slim-line Double Filter Set – Sediment & Carbon
- One (1) 8-GPM Ultraviolet Purifier
- Filter wrench
- PVC / flexible tubing in/ out of system
- **Units available in 110/20V / 220/30V**

- **Optional:** One (1) inverter for battery powered operation (battery not included)
- **Optional:** Pressure gauges pictured on unit not included

Treatment units are shipped to customers ready to put in place, connect & operate..

**Note:** All products are shipped with easy to follow application, installation and maintenance materials. Handy man and/or licensed plumbing contractor application and installation suggested.

Battery, pumps, pipes, hose connections, fittings and other related plumbing equipment needed, owners responsibility.

**Built to order only. Custom engineered, component assembled based on customer/industry specific requirements.**



12 volt or 24 volt DC to AC inverter converts DC current into conventional AC electricity. Connect one of these units directly to a battery to operate.



Approximate Dimensions: 37" W X 38" H

## # TWT-RWH-12: 12 GPM

### Modular Unit Includes:

- One (1) Self-cleaning sediment filter
- One (1) 20" Big Blue Double Filter Set – Sediment & Carbon
- One (1) 12-GPM Ultraviolet Purifier
- Filter wrench
- PVC / flexible tubing in/ out of system
- **Units available in 110/20V / 220/30V**

- **Optional:** One (1) inverter for battery powered operation (battery not included)
- **Optional:** Pressure gauges pictured on unit not included

Treatment units are shipped to customers ready to put in place, connect & operate

**Note:** All products are shipped with easy to follow application, installation and maintenance materials. Handy man and/or licensed plumbing contractor application and installation suggested.

Battery, pumps, pipes, hose connections, fittings and other related plumbing equipment needed, owners responsibility.

**Built to order only. Custom engineered, component assembled based on customer/industry specific requirements.**



12 volt or 24 volt DC to AC inverter converts DC current into conventional AC electricity. Connect one of these units directly to a battery to operate.

**Optional for units listed above: enclosure and/or weather proof cover recommended for year round protection from the elements if installed outdoors or in an unprotected area**

Unit warranty will be effected if system is not protected from the elements



## # TWT-RWH-15: 15 GPM

### Modular Unit Includes:

- One (1) Self-cleaning sediment filter • One (1) 20"Big Blue Double Filter Set – Sediment & Carbon
- One (1) 15-GPM Ultraviolet Purifier. • Filter wrench • Filter wrench • PVC / flexible tubing in/ out of system
- Units available in 110/20V / 220/30V

- **Optional:** One (1) inverter for battery powered operation (battery not included)
- **Optional:** Pressure gauges pictured on unit not included

Treatment units are shipped to customers ready to put in place, connect & operate

**Note:** All products are shipped with easy to follow application, installation and maintenance materials. Handy man and/or licensed plumbing contractor application and installation suggested.

Battery, pumps, pipes, hose connections, fittings and other related plumbing equipment needed, owners responsibility.

**Built to order only. Custom engineered, component assembled based on customer/industry specific requirements.**



12 volt or 24 volt DC to AC inverter converts DC current into conventional AC electricity. Connect one of these units directly to a battery to operate.

Approximate Dimensions:54" W X 50" H



## # TWT-RWH-30: 30 GPM

### Modular Unit Includes:

- One (1) Self-cleaning sediment filter • One (1) 20"Big Blue Double Filter Set – Sediment & Carbon
- One (1) 30-GPM Ultraviolet Purifier. • Filter wrench • Filter wrench • PVC / flexible tubing in/ out of system
- Units available in 110/20V / 220/30V

- **Optional:** One (1) inverter for battery powered operation (battery not included)
- **Optional:** Pressure gauges pictured on unit not included

Treatment units are shipped to customers ready to put in place, connect & operate

**Note:** All products are shipped with easy to follow application, installation and maintenance materials. Handy man and/or licensed plumbing contractor application and installation suggested.

Battery, pumps, pipes, hose connections, fittings and other related plumbing equipment needed, owners responsibility.

**Built to order only. Custom engineered, component assembled based on customer/industry specific requirements.**



12 volt or 24 volt DC to AC inverter converts DC current into conventional AC electricity. Connect one of these units directly to a battery to operate.

Approximate Dimensions:54" W X 50" H

## TWT® Modular Water Filtration, Disinfection & Purification System. Integrated Processing Technology To Provide Pure Water. The Way Nature Intended It!

### Pre-Filtration Options for all Skid Mounted Units:

TWT UV sterilizer units can be combined with different pre-filtration solutions, such as multi-staged filtration in stainless steel filter housings, or in Polypropylene Jumbo filters.

**TWT-SMD50P-JCH90:** 50 GPM 48" W x 55"H x 63"D

UV Disinfection for Food Processing – Single Stage Filtration

- Single Staged Filtration • UV Disinfection • On Board Pump • NEMA IV Control Panel • Sanitary Fittings and Pipes
- Manual Shut-Off Valves • Mounted on 304 SS Skid • Two (2) UV Lamps Required
- Units available in 110/20V / 220/30V • Piping 2" In/Out of system

- **Optional:** • TWT® Deposit Control Technology (Hard water conditioning & treatment)
- Inverter generators can be used in areas without power

**Note:** All products are shipped with easy to follow application, installation and maintenance materials. Facility engineer and/or licensed plumbing contractor application and installation suggested.

Battery, pumps, pipes, hose connections, fittings and other related plumbing equipment needed, owners responsibility.

**Built to order only. Custom engineered, component assembled based on customer/industry specific requirements.**

The TWT® Modular All-In-One water filtration, disinfection and purification systems are unique, compact, self-contained units (easy installation & operation).

**Optional for units listed above:** enclosure and/or weather proof cover recommended for year round protection from the elements if installed outdoors or in an unprotected area

Unit warranty will be effected if system is not protected from the elements





**TWT-SMD50-BBBX2**      50 GPM      42" W x 42"H x 62"D      270lbs

**All-In-One Water Treatment: Micro Filtration and UV Disinfection**

- Dual Filtration Stages (Sediment 20 and 5 Micron) in Polypropylene Filter Housings
  - UV Disinfection with Monitoring System • Solenoid Valve
  - All Electronics inside NEMA IV Control Panel • Manual Shut-Off Valves
  - Mounted on 304 SS Skid • Two (2) UV Lamps Required
  - Units available in 110/20V / 220/30V • Piping 2" In/Out of system
- Optional:** • TWT® Deposit Control Technology (Hard water conditioning & treatment)  
• Inverter generators can be used in areas without power

**Note:** All products are shipped with easy to follow application, installation and maintenance materials. facility engineer and/or licensed plumbing contractor application and installation suggested.

Battery, pumps, pipes, hose connections, fittings and other related plumbing equipment needed, owners responsibility.

**Built to order only. Custom engineered, component assembled based on customer/industry specific requirements.**

**TWT-SMD-100P-BBBX3**      100 GPM      36" W x 50"H x 53"D      590 lbs

**All-In-One Water Treatment: Filtration and UV Disinfection Management System**

- Triple Filtration Stages (Sediment 50, 20 and 5 Micron) • Filter Housings with Pressure Gauges
- UV Disinfection • On Board Pump • All Electronics inside NEMA IV Control Panel • Mounted on Stainless Steel Skid
- Four (04) UV Lamps Required • Units available in 110/20V / 220/30V • Piping 2" In/Out of system

**Optional:** • TWT® Deposit Control Technology (Hard water conditioning & treatment)  
• Inverter generators can be used in areas without power

**Note:** All products are shipped with easy to follow application, installation and maintenance materials. facility engineer and/or licensed plumbing contractor application and installation suggested. Battery, pumps, pipes, hose connections, fittings and other related plumbing equipment needed, owners responsibility.

**Built to order only. Custom engineered, component assembled based on customer/industry specific requirements.**



**Please Note:** All systems, engineering design, weight, size and system component assembly can vary based on TWT engineering review.

Pumps, piping, fittings, valves, and other material needed to and from system owners responsibility. The rugged self-contained design of this system ensures that the system will enjoy a long and reliable lifecycle when properly cared for.

**Installation:** Licensed plumber and/or contractor is recommended. Must have enough room on all sides for filters, UV replacement & maintenance

**UV Lamp Replacement:** To ensure adequate disinfection/purification of water line contamination, replace UV lamps every 12 months (or sooner depending on water use, quality and conditions).

**Sediment and Carbon Cartridge Replacement:** Generally twice a year, depending on water use, quality, & conditions.

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

**The TWT® Modular All-In-One water filtration, disinfection and purification systems are unique, compact, self-contained units (easy installation & operation).**

**Rainwater treatment systems should be disconnected from power source, drained, filters removed from housings during off-season and/or in freezing temperatures.**

The filtration units utilized in TWT systems are comprised of several filter types and media that remove harmful chemicals, metals, and toxins from the water as it passes through these layers. Filters used in staged filter housings are configured on systems as illustrated. Upon request if needed other filter mediums and filters used in system can be determined by a water quality analysis. If fluid conditions require additional micronic particle trapping for enhanced results, filters are available in various media's & micronic sizes providing flexibility & adaptability to meet the needs of all fluid conditions & application s.

**Filters used in system(s)**

**Sediment:** Reduction/Removal

**Carbon:** Taste, odor, chlorine and organic chemicals reduction/removal

## ENCLOSURES FOR RAIN WATER HARVESTING UNITS RECOMMENDED (not included with systems)

If the rainwater treatment units in this document are installed outdoors or in an unprotected area of the facility, a NEMA or similar type enclosure for year round protection from the elements is required to ensure the systems proper operation, process effectiveness, warranty and life cycle.

### ENCLOSURES

NEMA or similar type enclosures constructed for outdoor application and use to provide a degree of protection against access to parts, electrical connections, to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (windblown dust), to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of

water (Rain, sleet, snow, splashing water), to provide an additional level of protection against corrosion, and NEMA or similar type enclosure that will undamaged by the external formation of ice on the enclosure.

### WALL MOUNTED OR FREE STANDING ENCLOSURES DEPENDING ON THE SIZE AND SPECIFICATION OF THE TREATMENT MODEL CHOSEN

- Polycarbonate Enclosures
- Window Enclosures
- Junction Enclosures
- Completely Closed Enclosures
- Single Door Enclosures
- Two Door Enclosures

**Search the web** for NEMA ENCLOSURES to find the specific size and type for your facility application and installation requirements.

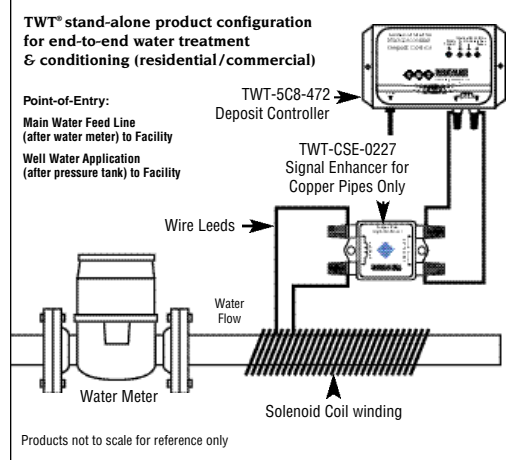
# Hard Water Problems Solved Easily—Chemical-Free

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

### Improve The Quality & Taste Of Your Water, With TWT® Patented Deposit Control Technology



**Triangularwave Technologies, Inc.**  
**TWT® Residential/Light Commercial Deposit Controller**



- **Eliminates Deposits in Pipes, Fixtures and Equipment**  
 (Softens and removes hard scale build-up around plumbing fixtures)
- **Controls Algae and Bacteria**  
 (Prevents the formation of biofilm, the breeding ground for algae and bacteria)
- **Reduces Soap Scum and Improves Lather of Soap**
- **Reduces Detergent and Soap Use**
- **Reduces Effects of Hard Water on Skin and Clothes**
- **Salt and CHEMICAL-FREE Water Conditioning**

- **Easy to follow application & installation manual**
- **Efficient Cost Effective & Reliable**
- **Removes Existing Scale on Heat Exchangers Over Time, Which Improves Heat Transfer for Greater Efficiency (Cost Effective)**



### **HARD DOLLARS SAVINGS-**

#### **Chemicals, Salts Water & Energy**

- Usage reductions of around 90% or more are typical.
- Energy - systems have been found to deliver between 5 and 15 % energy savings when compared to a well functioning chemical system because the controller adapts to changes in water conditions without operator intervention. Energy savings can be much higher (up to 40 %) vs. a poorly performing chemical system or no chemical system at all.

### **SOFT DOLLARS - Materials, Labor, Time, Safety**

- Chemical, salt handling and storage costs - reduced material and labor costs, freed-up storage space and cost allowance for increased safety (risk reduction). Reduction comparable to chemical cost reduction (up to 90 %).
- Maintenance, repair, replacement and downtime costs (chemical & salt delivery systems) - due to reduced usage rate. Reduction comparable to chemical and salt cost reduction (up to 90 %).
- Maintenance, repair, replacement and downtime costs (plumbing system), due in part to the adaptability described above under "Energy" Cleaning of the system and/or during shut down is also generally easier with TWT technology, as any film on any surface can be easily removed with a soft cloth. Additionally, the lower level of chemicals in the system will make it safer for workers doing the cleaning (75 - 90 %).

### **LIFECYCLE SAVINGS**

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

### **HARD DOLLARS**

- Can be estimated from purchase records or water volume and prices from the previous year.

### **SOFT DOLLARS**

- Costs should be estimated based on the average of 10 years of data, or the age of the system if less than 10 years old, to smooth out the effect of infrequent repairs and replacements.

### **LIFECYCLE SAVINGS**

- Are calculated as the net present value of the sum of the savings over 10 years using a reasonable interest rate (e.g. prime plus 2 %).

**TYPICAL PAYBACK** is 12-18 months when considering **HARD DOLLARS ONLY**.

**DON'T WAIT...Contact us today for a free consultation!**  
**A luxury you CAN afford**





TWT offers a full range of products & systems designed to address fluid problems wherever fluid flows. From TWT® patented deposit control technology to pre and post filtration needs, ionization, disinfection, and ultraviolet purification treatment and conditioning.

Components and subsystems chosen from across the range of treatment methods can be combined in different configurations to provide custom solutions specific to your facility flow rate, site or application.

### The Difference in Technology Matters!

Visit [www.twtwatertreatment.com](http://www.twtwatertreatment.com)  
Click on all products to view catalog



### Custom Engineered Systems To Your Exacting Specifications:

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.



To learn more about TWT® products, systems and technologies visit *Triangularwave Technologies, Inc. comprehensive websites. The valuable technical resource for all involved in water and fluid management.*

- [www.Triangularwave.com](http://www.Triangularwave.com)
- [www.twtwatertreatment.com](http://www.twtwatertreatment.com)

### TWT The Environmentally Friendly “Green Market” Solution!

Don't Wait...Contact us today for a free consultation! A luxury you can afford. And for information on what TWT system will meet your specific application needs.

### Value Added Technology

TWT makes sense from an operational, economical and safety point-of-view.

Thank you, The team at TWT, Inc.

Conserve Water, Save Energy...Non-Chemical, Safe, Cost-Effective Water Treatment:

*TWT® The Ultimate in Water Treatment & Conditioning*

**The green way**

