

# SINGULAIR R3® GREEN



**R3** Reduce  
Reuse  
Recycle

**norweco®**

*Engineering the future of water  
and wastewater treatment*



# SINGULAIR® R3 GREEN

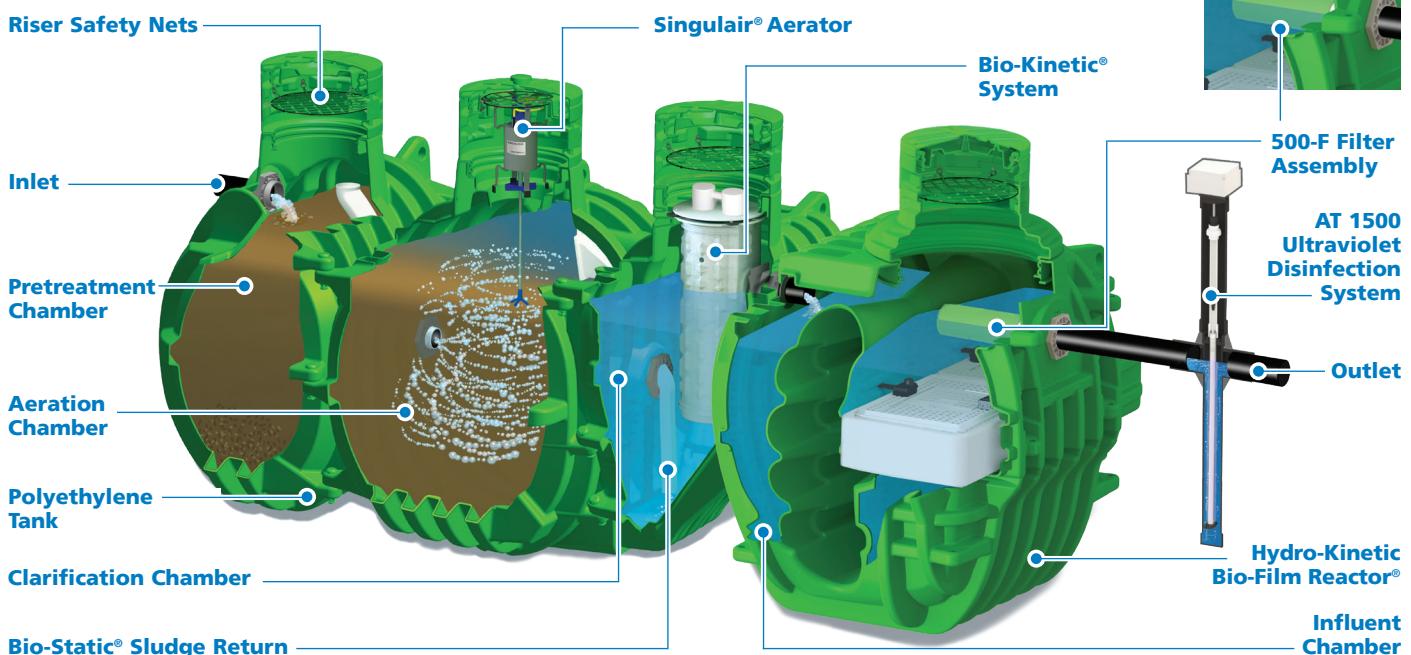
An innovative wastewater treatment system that **REDUCES** water consumption, **REUSES** treated effluent and **RECYCLES** water for indoor or outdoor use to conserve and recharge our water resources

The Singulair R3 Green treatment system incorporates our advanced water reuse technology into a durable, watertight polyethylene tank. It is the cutting-edge solution to chronic water shortages and reduces energy costs associated with water and wastewater treatment. It quietly, efficiently and automatically treats all incoming wastewater to the highest level for restricted indoor and unrestricted outdoor use.

According to the American Water Works Association, 84 percent of residential water is used for non-potable applications, such as lawn irrigation, laundry and toilet flushing. Due to its outstanding performance, the Singulair R3 qualifies for Green Building credits under both the Leadership in Energy and Environmental Design (LEED) rating system and the National Association of Home Builders (NAHB) ICC 700 National Green Building Standard.

solutions in wastewater treatment

# Singulair R3® Green is the world's simplest water reuse treatment technology in HDPE



## Inlet

Untreated wastewater enters the system here.

## Pretreatment Chamber

Anaerobic bacteria and gravity precondition the wastewater here to protect the integrity of downstream treatment processes.

## Aeration Chamber

Here, safe, living aerobic bacteria convert the wastewater into stable substances. Flow equalization maximizes this biological oxidation and assures 24-hour retention and treatment.

## Aerator provides complete treatment

Our exclusive aerator infuses the fresh air that safe, living micro-organisms require to fully digest and treat wastewater inside the Aeration Chamber. Powered by our 1725 RPM, 115 volt, fractional horsepower motor, our quiet, reliable aerator is inexpensive to operate, reduces heat build up and dramatically increases bearing life. Each aerator is precision engineered, tested and certified to operate only 30-minutes per hour. Only the stainless steel aspirator shaft and reinforced nylon aspirator come in contact with liquid in the Aeration Chamber.

## Clarification Chamber

Flow equalization enhances the settling of biologically active substances inside the Clarification Chamber. Wastewater has now been converted into clarified liquids in this chamber.

## Flow Equalization Ports

They control the flow through all upstream and downstream processes and they regulate the amount of treated effluent that leaves the tank. Retention time in the chambers is maximized and the treatment process enhanced.

## Bio-Kinetic® System

Constructed entirely of plastic and rubber components that are impervious to this environment, our Bio-Kinetic system combines filtration, settling, non-mechanical flow equalization, adjustable outlet weir and optional chemical tablet feed system into a single, revolutionary package.

## Polyethylene Tank

Every tank is manufactured from rotationally molded, UV stabilized high density polyethylene, plus strategically located ribs, resulting in uncompromised tank integrity. Installation is quick and easy, with long term performance assured.

## Hydro-Kinetic Bio-Film Reactor®

Flow equalized liquid from the clarifier enters the Bio-Film Reactor where it flows downward and is evenly distributed beneath our exclusive Hydro-Kinetic filtration media. The liquid then travels through the proprietary attached growth filtration media where final polishing takes place.

## 500-F Filter Assembly

Treated liquids are filtered before final discharge from the tank to remove turbidity and fine particulates for water reuse. This internal synthetic filter is constructed of proprietary materials and requires minimal maintenance.

## Riser Safety Nets

Access openings are secured from accidental entry into the tank.

## AT 1500 Ultraviolet Disinfection System

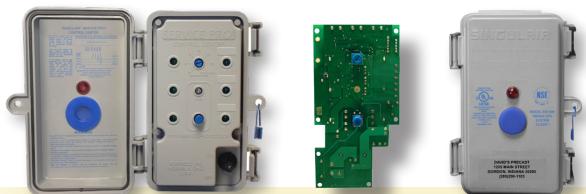
The Model AT 1500 UV disinfection system reduces bacteria levels from secondary effluent to meet strict water quality standards and insures the purest water is returned to the environment.

**Progress Through Service Since 1906.**  
Ultimately, our success over all these years boils down to perceived, appreciated and consistently delivered quality service to our customers.

# customer focus

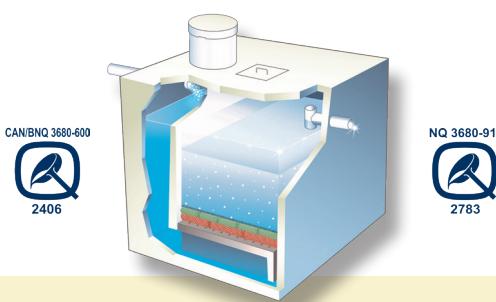
## Consider the facts:

- The Singulair R3 Green system produces sparkling, odorless effluent of such pristine quality that it can be used for all non-potable uses both inside and outside the home, with water clarity that equals potable water.
- With unrivaled performance, the Singulair R3 Green treatment system exceeds the effluent requirements of NSF/ANSI Standards 40, 245 and 350. In ecologically sensitive areas, effluent standards are 10 mg/L CBOD and 10 mg/L TSS. Rated Class R through successful completion of NSF/ANSI Standard 350 test protocol, the Singulair R3 Green system effluent averages 5.0 mg/L CBOD, 4.6 mg/L TSS, 2.3 NTU turbidity, and 2 MPN/100 ml E. coli.
- The system simultaneously met all requirements of NSF/ANSI Standard 245 by reducing total nitrogen 66% to an average of 14.4 mg/L.
- The system weighs less than 1,500 pounds and can easily be installed with a backhoe.
- The patented internal and external ribbed design assures long term tank integrity and minimizes the potential for tank damage due to hydraulic forces.
- The only electrical components are the low RPM aerator and high efficiency UV electrical controls.
- The exclusive non-mechanical flow equalization feature of our Bio-Kinetic system guarantees that all incoming wastewater is fully treated.
- Complete disinfection is efficiently accomplished by the AT 1500 ultraviolet disinfection system. Containing a power interlock switch to de-energize the system during service, the AT 1500 system is the only UV treatment device listed by Underwriters Laboratories to Standard UL 979 for residential applications.
- The Singulair R3 Green is eligible for 2 points from the US Green Building Council under the LEED BD+C: New Construction v.3 program, and earns 20 points from the NAHB/ICC/ASHRAE 700-2015 National Green Building Standard.
- Durable, reliable components are safely installed out-of-sight below grade. There are no exposed power cords, compressors, filters or air lines.
- 60-hour retention in the system reduces pumping frequency as compared to smaller capacity systems.
- Your local, factory-trained, certified and licensed Norweco dealer sells, installs and services your system with pride. You'll find their name and address posted on the system's control center.



### SERVICE PRO® Control Center

EVERY SYSTEM COMES WITH THE SERVICE PRO MODEL MCD CONTROL CENTER TO PROVIDE MONITORING, COMPLIANCE AND DIAGNOSTIC FUNCTIONS FOR THE TREATMENT SYSTEM. EACH CONTROL CENTER INCLUDES A TIME CLOCK, ALARM LIGHT, RESET BUTTON, POWER SWITCH, POWER LIGHT, PHONE/NETWORK LIGHT, AERATOR ALARM LIGHT AND THREE AUXILIARY COMPONENT INPUTS. OPTIONAL COMMUNICATION MODULES INCLUDE PHONE, NETWORK AND CELLULAR.



### Phos-4-Fade® Phosphorus Removal Filter

THIS PATENTED, NON-MECHANICAL COMPONENT CAN BE EASILY INSTALLED AS PART OF ANY ONSITE WASTEWATER TREATMENT SYSTEM. THE PHOS-4-FADE FILTER WAS TESTED AND CERTIFIED BY THE BUREAU DE NORMALISATION DU QUEBEC (BNQ) THROUGH THEIR STRINGENT 12 MONTH CERTIFICATION PROTOCOL, MEETING CAN/BNQ 3680-600 CLASS P-II AS WELL AS NQ 3680-910 CLASS IV REQUIREMENTS.



Norweco distributors, dealers, installers and service providers are located throughout North America and much of the rest of the world. Research, product development, manufacturing, marketing and sales support are conducted inside our offices and factory in Norwalk, Ohio USA. Everyone at Norweco is committed to shaping the future of our industry.

# engineering the future

of water and wastewater treatment

## Specify Singulair R3® Green

Your local Norweco dealer is fully trained to install your Singulair R3 Green system and any other Norweco product you choose to protect your environment. Each of our dealers has completed a nationally accredited Singulair R3 Green factory-training program.

The Singulair R3 Green system comes to you complete, including delivery, tank setting, equipment installation, plant start-up and service. A series of service and adjustment inspections are scheduled for the first two years of operation at the time your system is installed. These inspections are included in the sale so that your system continues to perform at the highest level to protect you and your investment. Extended service contracts are also available from your local Norweco dealer.

Today's Answer for the Protection of Tomorrow's Environment

comprehensive protection, guaranteed



Singulair R3 Green is warranted against defects in material and workmanship under normal use and service by a comprehensive Lifetime Warranty and Exchange Program. The 3 year Limited Warranty and Lifetime Exchange covers the Singulair aerator, Service Pro control center and Bio-Kinetic system. All other system

components are warranted by our 2 year Limited Warranty. Complete Warranty and Exchange information, a Warranty Registration Card and Owner's Manual are included with purchase.

#### Other Products

##### **Singulair® Wastewater Treatment Plants**

FOR RESIDENTIAL APPLICATIONS

##### **Modulair® Wastewater Treatment Plants**

FOR SEMI-COMMERCIAL APPLICATIONS

##### **Travalair® Wastewater Treatment Plants**

FEATURING AUTO SLUDGE AND SKIMMER SYSTEM

**norweco®**

Engineering the future of water  
and wastewater treatment

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The Singulair R3 Green system components have been listed, licensed and/or certified by each of the following agencies/organizations.



#### Progress Through Service Since 1906

We engineer, manufacture, install and maintain advanced water and wastewater treatment technologies for residential properties, communities and commercial properties that are not connected to sewer lines. Norweco treatment systems are in service all over the world.

Norweco®, Norweco.com®, Singulair®, Modulair®, Travalair®, Singulair R3®, Singulair Green®, Ribbit Rivet®, Hydro-Kinetic®, Hydro-Kinetic Bio-Film Reactor®, Evenair®, Lift-Rail®, Microsonic®, Bio-Dynamic®, Bio-Sanitizer®, Bio-Neutralizer®, Bio-Kinetic®, Bio-Static®, Bio-Gem®, Bio-Max®, Bio-Perc®, Blue Crystal®, Phos-4-Fade®, Enviro-C®, Nirro-Buster®, ClearCheck®, ChemCheck®, Tri-Max®, Hydra-Max®, Service Pro®, MCD®, TNT®, WASP®, Grease Buster® and "BUSTER" logo are all registered trademarks of Norwalk Wastewater Equipment Company, Inc.