Recirculating Media Filter
High Performance Upflow Wetland
Drop in Wastewater treatment Plant
STEP Collection & System Components

Trusted. Tested. Tough.™
WHAT SETS ZOELLER PUMPS APART?

Since 1939, Zoeller Company has been manufacturing water pumps of many types. From pedestal pumps in the beginning to large HP, submersible, non-clog pumps in recent years, we have gained invaluable manufacturing experience from our humble beginning in August Zoeller’s basement workshop.

Over the years, one of our most important mottos has been, ‘We excel at 1,000 little things’. From start to finish, we take pride in our products. When you have residential or commercial wastewater issues, you can count on Zoeller to deliver the very best solutions. Our commitment to unsurpassed quality offers years of service and durability with a responsive and knowledgeable product support team just a phone call away.

- MANUFACTURING IS IN OUR BLOOD...

Rather than using a ‘puzzle piece’ mentality and simply buying components from other sources and assembling them, we manufacture most of our products from start to finish, continually checking the quality throughout the entire process.

Quality is always the most important element at Zoeller. Above all, quality is what has made us successful and continues to drive the decisions we make. A quality product cannot be manufactured with low-grade components. By bringing in high-quality raw castings as well as machining and powder coating the pieces in house, we are able to control the quality of each part and identify any defect throughout the manufacturing process. Each piece is subjected to numerous quality checkpoints along the way to guarantee that it is the best of the best.

- FACTORY TESTING IS NOT JUST A BUZZWORD...

Instead of running ‘audits’ on a calculated number of pumps, all submersible Zoeller pumps are 100% factory tested underwater prior to shipment. Each pump is subjected to a leak test to ensure that all gaskets, seals and mating surfaces will hold under pressure. After the pressurized leak test, the pump is powered up and run underwater to ensure that it is capable of the published head capacity and flow rate listed in our catalog and specification sheets. This testing allows us to guarantee the pump will operate out of the box every time, and you can rest assured that YOUR Zoeller pump was tested underwater for both electrical and hydraulic performance.

- FULL BREADTH OF PRODUCT LINE...

Zoeller is your ‘one stop shop’ when dealing with dewatering and wastewater systems. We offer everything from a small fractional sump pump to a large, 100 HP, non-clog pump. From battery back-ups, check valves, sewage grinder systems, small prepackaged residential units or large prepackaged municipal systems, Zoeller can offer it all. Next time you are looking for a water or wastewater system, reach for the only catalog you will ever need... Zoeller Company!
Engineered Systems

Commercial installation of a large-scale Fusion® ZFL-2400

Large-capacity Z-Cell upflow wetland under construction.

Clarus Environmental can offer assistance to developers and design engineers for all manners of decentralized systems.
Clarus Environmental’s Engineered Systems provide cost-effective alternatives to conventional gravity sewers and municipal wastewater treatment plants. Recirculating media filters and constructed wetlands can be customized to fit nearly any domestic wastewater application. Fusion® series treatment systems incorporate several treatment processes into one compact, drop-in unit, without the need for a separate pretreatment tank. While Clarus Environmental has strong roots in product manufacturing, we can bring much more to a project than just system components.

No two projects are the same, and Clarus Environmental has valuable experience in optimizing custom solutions for custom jobs. From brainstorming options at a project’s inception, to providing product details and customized specifications during the design phase, to providing a myriad of construction and post-construction support, our knowledgeable staff is our greatest resource. Let Clarus Environmental assist you with the ideal solutions for your project.
**Applications:**
- Residential
- Commercial
- Small Community
- Cluster

**Features:**
- Robust, passive aerobic treatment
- Specified gravel media is more reliable than sand
- Proven and reliable technology
- Minimal maintenance requirements
- Produces <25 mg/L CBOD5 and <30 mg/L TSS
  - Based on domestic strength influent
- Design can be adapted to specific organic and hydraulic loading. Please contact the factory for design assistance.

**Community Treatment Systems**

Municipal kits are designed for clustered systems where the waste strength is more predictable (BOD<200) due to the multiple sources of waste generation.

- 30' x 20' – 3,000 GPD
- 30' x 30' – 4,500 GPD
- 30' x 40' – 6,000 GPD
- 30' x 50' – 7,500 GPD
- 30' x 60' – 9,000 GPD
- 30' x 36' – 9,000 GPD
- 50' x 48' – 12,000 GPD
- 50' x 60' – 15,000 GPD
- 50' x 72' – 18,000 GPD
- 50' x 90' – 22,500 GPD
- 50' x 96' – 24,000 GPD
- 50' x 108' – 27,000 GPD
- 50' x 120' – 30,000 GPD
- 50' x 144' – 36,000 GPD

Custom sizes can be configured for specific projects. Please consult factory.
HIGH PERFORMANCE UPFLOW WETLAND

Z-CELL

An attractive, robust and ecologically sound treatment system

The Clarus Environmental Z-Cell® is a high-performance wetland designed for use in decentralized wastewater applications where the effluent quality must meet or exceed secondary treatment standards. The Z-Cell® is a timed-dose system and the wastewater has a 360° vertical path to an outlet pipe below the wetland’s surface. By moving water vertically, the fluid must pass through the horizontally-oriented plant root zone. This eliminates short circuiting, an issue common in conventional constructed wetlands. During the growing season, evapotranspiration through plant leaves reduces the hydraulic load to downstream components.

APPLICATIONS:
• Residential
• Commercial
• Small Community
• Cluster

FEATURES:
• Anaerobic vertical flow treatment
• Beautiful addition to the natural landscape
• Less water to disperse during the growing season
• Produces <25 mg/L CBOD5 and <30 mg/L TSS based on domestic strength influent
• Design can be adapted to specific organic and hydraulic loading. Please contact the factory for design assistance.

Clarus Environmental's Fusion® Series Treatment Systems are drop-in wastewater treatment units designed for use in decentralized applications where the effluent quality needs to meet or exceed secondary treatment standards. The Fusion® units' unique design enables them to be installed without pretreatment tanks, making them ideal for use on sites where space is limited. Effluent disposal options include: conventional trenches, dosed systems, drip irrigation, or disinfection with direct discharge.

- Highly adjustable to site conditions
- Lifetime warranty on the media
- Easy installation with only 4 pipe connections
- Proven technology
- Produces <25 mg/L CBOD5 and <30 mg/L TSS
  * based on domestic strength influent

**SMALL COMMERCIAL FUSION® TREATMENT SYSTEM**

*Compact Wastewater Treatment Plant*

1,120 - 2,400 GPD

**LARGE COMMERCIAL FUSION® TREATMENT SYSTEM**

*Compact Wastewater Treatment Plant*

2,800 - 4,000 GPD
Case Studies

DECENTRALIZED DESIGN BENEFITS A COUNTRY CLUB

PROBLEM
The design engineer for Keene Manor Estates, a country club development in Nicholasville, KY, needed wastewater treatment options. The initial plan of drainfields in every backyard failed to meet the aesthetic quality sought by the developers.

SOLUTION
The engineer turned to Clarus Environmental to find a decentralized solution. The system involved effluent collection utilizing treatment through a 50’ x 90’ recirculating gravel filter and dispersal through a drip system which irrigates portions of the golf course. Clarus technicians helped the engineer with force main design, treatment system sizing, and drip field zoning and layout.

RESULT
The system, operational and trouble-free since 2007, led to more consistent, professional and effective wastewater management.

FUSION® TREATMENT SYSTEM SAVES LAKE FROM CONTAMINATION

PROBLEM
A mobile home park in Michigan had a failed septic tank resulting in surfacing effluent and contamination of a nearby lake. The site had an existing 20,000-gallon septic tank and the owner was restricted to pumping and hauling the waste away. A replacement drainfield was not possible due to site constraints that included limited space, poor soil conditions and a high water table.

SOLUTION
After careful consideration, a new system was designed to treat 5,000 GPD, utilizing the existing septic tank and Clarus Environmental WW4 effluent filters. Two ZFL-2400 Fusion® Treatment Systems were installed in parallel with influent evenly split using a Tru-Flo® splitter box. Treated effluent was collected in a 1,500-gallon dose tank. Two Zoeller model N153 pumps were used to dose the low-pressure drainfield.

RESULT
Since startup, the system has performed perfectly. System maintenance is performed twice per year.

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Case Studies

COMMERCIAL RECIRCULATING MEDIA FILTERS

A church, located in Central Indiana, was expanding to accommodate an increase in membership and the existing septic system was too small for the new kitchen facility. A Zoeller 20’ x 30’ Recirculating Media Filter was designed to handle up to 3,000 GPD, with a drip system for final effluent disposal. The versatility of drip was demonstrated by locating the three zones in an adjacent field used for recreational purposes. The system was installed in June, 2003 and 14 subsequent samplings have revealed an average effluent quality of 3 mg/L BOD5 and 2 mg/L TSS.

A restaurant, located in South Central Kentucky, was experiencing a $6,000 per month expense pumping their holding tanks. The 150 seat restaurant had a design flow rate of 4,500 GPD with septic tank effluent waste strength over 600 mg/L BOD5. A Zoeller 50’ x 36’ Recirculating Media Filter was installed in March 2004. Effluent is dispersed through 15,000 feet of pressure compensating drip line. Sampled quarterly for four years after installation, effluent BOD5 and TSS are less than 7 mg/L - a 98% reduction in waste strength.
Lake Conway, the largest commissioned game and fish reservoir in the U.S., is a major recreational destination in Central Arkansas. The lake was finished in 1951, and development around its shores began almost immediately. At the time, little was done to standardize the septic installations. The lack of good quality installations, combined with poor soils and negligent septic management practices, led to pollution in the waters of Lake Conway. Money was granted in a first phase to convert over 300 of the original 1,700 homes from their existing septic tanks to a new wastewater treatment system. Zoeller Recirculating Media Filters were engineered to treat the clustered wastewater. In addition, Zoeller Pump Company helped design the force mains that delivered the septic tank effluent from each home to the treatment system. The system is composed of four 55’ x 140’ recirculating media filters and is designed to treat over 150,000 gallons per day. Treated water passes through a chlorine contact basin for sterilization and is discharged into the lake. Discharge limits were established and monitored by the Arkansas Department of Environmental Quality. The system is operating and performing well.
TURBINE EFFLUENT PUMPS

APPLICATION:
- STEP systems
- Effluent sewer force mains
- Treatment systems
- Drip field dosing

FEATURES:
- 1/2 HP up to 3 HP
- 115 and 230 Volt, 1 Ph
- Inlet screens
- Franklin Electric submersible motors, pumps pass 3/32” spherical solids
- Corrosion-resistant stainless steel motor, pump casings, and hex drive pump shaft
- High efficiency floating stack impeller design
- 10’ of jacketed SO type power cord (1/2 HP - 1-1/2 HP)
- Additional cord lengths of 25’, 50’ and 100’ also available
- 1-year warranty from date of purchase
- 5-year warranties also available

ACCESSORIES:
- Check valves
  - 1-1/4” (p/n 30-0187)
  - 2” (p/n 30-0189)

TURBINE STEP SYSTEM

APPLICATION:
Onsite enhanced/pumped septic systems, or repairs to failed septic systems where gravity flow is not an option, sand filters, pressure pipe dosing systems or other alternatives that require high head.

FLOW RATE:
Systems up to 85 GPM available

FEATURES:
- Tank made from durable polyethylene
- Stainless steel/plastic turbine effluent pump
- Heights from 51” to 120” available
- Simplex and duplex systems
- All vaults fit in an 18” tank opening.
- Alarm box or control panel packages available

ACCESSORIES:
Float Tree (see CL0150 for options)

CENTRIFUGAL STEP SYSTEMS

APPLICATION:
Onsite enhanced flow or low pressure pipe (LPP) systems, or repairs to failed septic systems where gravity flow is not an option.

FLOW RATE:
Up to 50 GPM

FEATURES:
- Available with models 51, 53, 98, 142, 145, 151, 152, 153 centrifugal pumps
- Tank made from durable polyethylene
- Cast iron centrifugal pump
- Alarm box or control panel packages available

11, 19, 27 GPM Models
35, 55, 85 GPM Models

Products may not be exactly as shown.
Distribution Components

ACTUATOR ZONE VALVES

APPLICATION:
Zoning of large effluent distribution networks
A more reliable alternative to solenoid valves

FEATURES:
- VALVE
  • Never needs lubrication
  • Can be operated manually
  • 24-month limited warranty
  • 2 and 3 port configurations

- ACTUATOR
  • Mounts directly to zone valve
  • Utilizes 24-volt AC power
  • Movement is completely customizable
  • 24-month limited warranty

AUTOMATIC MULTIZONE VALVES

APPLICATION:
Multiple-zone residential and small commercial disposal fields

FEATURES:
- No electricity required
- For use in pump-fed applications
- 4000 Series - High-strength non-corrodible ABS polymer construction
- 6000 Series - Die-cast metal & high-strength non-corrodible ABS polymer construction
- Purple cap indicates applicability for wastewater
- Preassembled units with unions and shut-off valves are available. Consult factory.
- Available for 2 to 6-zone operation

TRU-FLOW® SPLITTER SYSTEM

APPLICATION:
Alternative to a concrete distribution box
4:1 or 3:2 recirculating splitter

FEATURES:
- Tested from 1/10 GPM to 30 GPM flows
- Bubble level built in for easy adjustments and maintenance
- Maintainable and adjustable from surface after installation
- 4” riser easily attached to visually inspect and adjust the diverter
- Non-corrodible polypropylene frame
- Will tolerate settlement of as much as 15° front-to-back (30° total) and/or 12° side-to-side (24° total)
- Field adaptable from 2 to 5 outlets
- SCH 40 model also available

ACCESSORIES:
6” diameter x 36” tall riser (p/n 173-0007)

DRIP LINE & ACCESSORIES

FEATURES:
- Installation requires minimal site disturbance
- Flexible installation can be adapted to most sites
- Natural landscaping can be maintained
- Ideal for steep slopes, uneven terrain and rocky soils

ORIFICE SHIELDS

APPLICATION:
Protects dosing orifices from surrounding media in pressurized distribution systems

FEATURES:
- Solid (upward spray) or slotted (downward spray)
- 3” shields easily snap onto 3/4” or 1” piping
- 4” shields easily snap onto 1-1/2” or 2” piping
ECONOMY RISER SYSTEMS

FEATURES:
- Available in 12", 20" and 24" diameters
- Injection molded, exceptionally strong
- HDPE is non-corrodible in a septic environment.
- Watertight
- Stackable
- Economical

STANDARD RISER SYSTEMS

FEATURES:
- Available in 12", 18", 24" & 30" diameters
- Heights up to 7'; for larger heights consult factory.
- All materials are non-corrosive & environmentally safe.
- Lid is secured.
- Sturdy construction
- Gas-tight and watertight

Accessories

APPLICATION:
- Media filter systems
- Pressure distribution systems
- Mound systems

FEATURES:
- NEMA 4X enclosure
- Panels include (3) 20' control switches
- Exterior alarm: test/normal/silence
- 24-month warranty
- Lockable Latch
- Custom panels available. Consult factory.

Controls

TIMED DOSE CONTROL PANELS

APPLICATION:
- Pump chambers
- Dose tanks
- Sump pump basins
- Holding tanks
- Lift stations
- Non-potable water applications

FEATURES:
- NEMA 4X enclosure, UL-listed, 115V
- Audible and visual alarm
- Float sold separately.

ALARM BOX WITH TOUCH PANEL

APPLICATION:
- Pump chambers
- Dose tanks
- Sump pump basins
- Holding tanks
- Lift stations
- Non-potable water applications

FEATURES:
- NEMA 4X enclosure, UL-listed, 115V
- Audible and visual alarm
- Float sold separately.
About the Zoeller Family of Water Solutions

Founded in 1939, Zoeller Company is one of the oldest independently-owned professional pump manufacturers in North America. Headquartered in Louisville, Kentucky USA, Zoeller has over 800 employees worldwide and close to 600,000 sq. ft. of manufacturing facilities from our seven operations in North America and Asia.

Zoeller Company has established itself as an innovative leader in pumping equipment and water treatment systems by continuous research and development. The quality of our products is demonstrated by UL, CSA, CE, and NSF listings as well as continued growth throughout the United States, Canada, Mexico, and over 40 other countries around the globe. The company has also expanded to include five brands, which have become the foundation of Zoeller.

The original Zoeller product line now resides in Zoeller Pump Company, which offers a broad range of submersible pumps from fractional to 7-1/2 HP for residential and commercial sump, effluent, dewatering and grinding applications.

Flint & Walling, founded in 1866 in Kendallville, Indiana USA, is the only pump company in the U. S. to manufacture its own motor for jet and centrifugal pumps. This product line specializes in deep well pumps that range from 5 GPM to 1,000 GPM, as well as centrifugal, jet, booster, and submersible pumps up to 7-1/2 HP.

Founded in 1952, Wolf Pump is a manufacturer of submersible turbine pumps located in Abernathy, Texas. Wolf currently produces 4” to 8” pumps with capacities ranging from 35 to 1000 GPM. These pumps are known for their efficiency and durability in demanding water applications including irrigation, municipal water supplies, dewatering applications, dairy production, mining, the oil and gas industries, aquaculture, and more.

Zoeller Engineered Products provides products for storm water removal, sewage pumping stations and hazardous environment applications for residential, commercial and municipal markets. Available from 1/2 BHP to 100 BHP, each pump is customized by design, manufacture and installation according to exact application needs.

Clarus Environmental offers sustainable environmental products, solutions, and services for the collection, treatment, and dispersal of residential and community wastewater. This line specializes in onsite pumps, pressure sewers, biological and mechanical treatment processes, disinfection, and discharge of safe water.