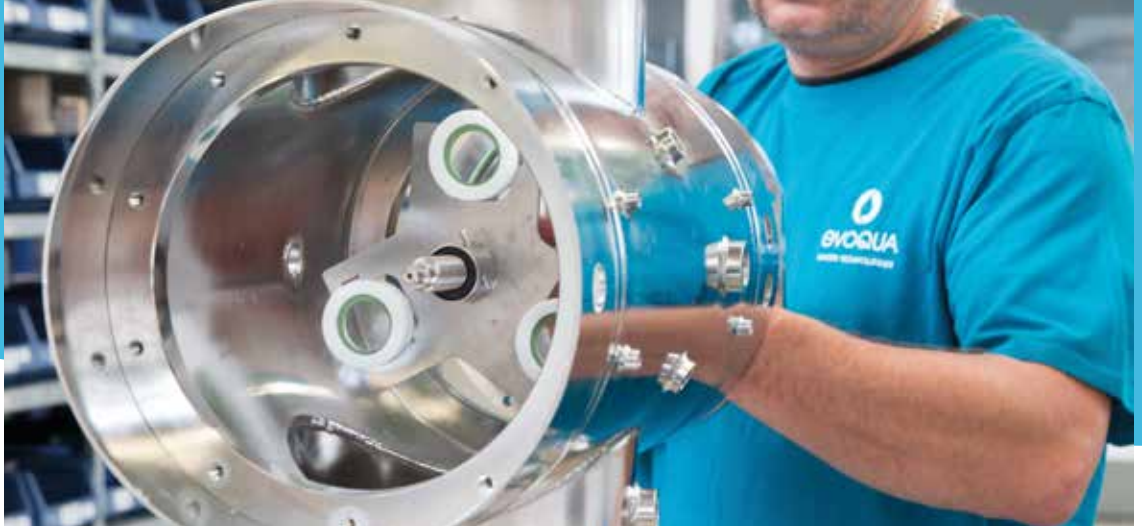




WATER TREATMENT, FILTRATION AND DISINFECTION

PRODUCTS AND SERVICE IN EMEA - EUROPE, MIDDLE EAST AND AFRICA

PRODUCTION-
SITE GUENZBURG



WORLDWIDE EXCELLENCE AND INNOVATION

EUROPEAN FACILITIES AT A GLANCE

Guenzburg, Germany. About 240 employees work in the Bavarian facility which is a European center for research & development, production, sales and service. The teams continuously work on new ideas and solutions for changing requirements to protect the most precious resource – water.



Paddock Wood, United Kingdom. The Evoqua team in the UK comprises approx 50 people, with altogether over 1000 years disinfection experience, dedicated to Evoqua's sales, service, contract execution & engineering. The UK team operates from Evoqua's Paddock Wood Headquarters, and its East Peckham, Derby and Leeds offices.

Chaville, France. Evoqua's Wallace & Tiernan® brand has been present in France for over 40 years. The Chaville location outside of Paris is a sales and service office dedicated to serving France and other French speaking regions in Europe and Africa.



CHAVILLE



PADDOCK WOOD

EVOQUA WATER TECHNOLOGIES WORLDWIDE

Evoqua Water Technologies is one of the world's leading providers for water treatment equipment and service. It offers industrial customers and communities sustainable solutions for highly efficient water usage and supply.

Evoqua has about 4000 employees worldwide in 170 facilities in Australia, Canada, China, Germany, Italy, Korea, Singapore, the United Kingdom and the US. With trusted brands such as Wallace & Tiernan®, Neptune-Benson®, Vortisand®, VAF™, MEMCOR®, Envirex®, Ionpure® and others, Evoqua follows its tradition and will explore new markets with new solutions and innovations.

WALLACE & TIERNAN® PRODUCTS: MORE THAN 100 YEARS OF INNOVATION



What began in 1913 in the United States with the first chlorine gas feeder took off from there to the rest of the world: Charles F. Wallace and Martin F. Tiernan were the first to build a commercial chlorinator for water disinfection. They continued to develop their invention and established several subsidiaries around the globe.

VAF™ SYSTEMS: AUTOMATIC SELF-CLEANING SCREEN FILTERS



Evoqua's VAF™ Filtration Systems brand specializes in automatic self-cleaning screen filters removing all suspended solids 10 micron and larger from water. By utilizing an innovative patented* technology, the cleaning process is simplified eliminating the need for electric motors, gear boxes, pistons, or limit switches. The VAF brand has served the municipal and industrial markets worldwide for over 30 years. Typical applications would include agriculture, irrigation, process water filtration, seawater filtration and many more.

VORTISAND® SYSTEMS: LEADER IN HIGH EFFICIENCY FILTRATION SYSTEMS



Vortisand® systems have been serving the industrial water markets since 1986. The award-winning Vortisand product incorporates High Efficiency Microsand technology, using a high capacity media filter that combines cross-flow dynamics with microsand media to achieve submicron filtration performance. This technology allows the unit to operate at filtration rates of up to 5 times greater than those of traditional media filters, while filtering 10-50 times finer.

NEPTUNE-BENSON® SYSTEMS: SYNONYMOUS WITH WATER FILTRATION



Neptune-Benson has been synonymous with water filtration and disinfection serving the recreational, municipal, and industrial water markets since 1956. Featuring award-winning brands such as the Defender® regenerative media filter, Odyssey™ filters, and Legacy™ sand filters. The Neptune-Benson® family of products also includes the AEGIS anti-entrapment shield, moveable bulkheads, Dominion™ butterfly valves, ProStrainer® and Guardian™ strainers, and greendrive™ VFD systems, as well as all Lawson Aquatics® accessory products.

*: PATENTED IN SOME COUNTRIES

APPLICATIONS

MUNICIPAL WATER

Municipal waterworks, drinking water, hotels, schools, residential homes and hospitals

Applications

Disinfection, filtration, measurement and control, neutralization



LEISURE/AQUATICS

Pool water, water parks, fountains, aquaculture

Applications

Disinfection, filtration, water treatment, measurement and control, neutralization



PROCESS WATER

Food & beverage, agriculture, pulp & paper, cosmetics, pharmaceutical, electronics, aquaculture, chemicals, cooling towers/power plants

Application

Disinfection, filtration, measurement and control, treatment of cooling water, neutralization



LAB WATER

Laboratories and industrial plants

Applications

Production of pure and ultra pure water



WASTE WATER

Industrial and municipal waste water

Applications

Measurement and control, disinfection, filtration



OUR PORTFOLIO

WALLACE & TIERNAN® DISINFECTION SYSTEMS

GENERATION OF CHLORINE DIOXIDE

DIOX systems

DIOX systems produce high quality chlorine dioxide solution with safety and efficiency in mind. The DIOX-C chlorine gas generators are applicable in water works. DIOX-A systems are used for legionellae prevention as well.



DIOX-A 5000 SYSTEM

UV TREATMENT

Barrier® M and S series systems

With the Barrier® S and Barrier M UV system series Evoqua Water Technologies covers a large range of applications. The low and medium pressure UV systems are used for safe, environmental friendly, economical disinfection without any taste or odour. They are suitable to reduce ozone and contribute to significant saving when used in swimming pools for chloramine reduction.



BARRIER M UV SYSTEM

GENERATION OF HYPOCHLORITE

OSEC® systems

There are two distinct types of OSEC® electrolysis units: membrane systems and open systems. The membrane electrolysis process used by the OSEC-NXT system generates pure, stable, concentrated sodium hypochlorite solution from brine.

The sturdy tubular cell electrolysis systems generate low concentration sodium hypochlorite solution from saturated brine solution. Different types of tubular cell electrolysis systems are available for a large range of applications: OSEC L, OSEC B2 and OSEC B-Pak systems.



INSTALLED BARRIER S UNITS



BARRIER S UV SYSTEM



OSEC L SYSTEM



OSEC B-PAK SYSTEM



OSEC B2 SYSTEM



OSEC-NXT SYSTEM

DOSING SYSTEMS FOR WATER TREATMENT

GAS FEEDERS

from V10k™ to E-2000 series systems

With its proven and tested V10k™, Kent V2000™ and V-2030 all-vacuum gas feeders, Evoqua Water Technologies offers reliable technology that provides maximum safety.

The Wallace & Tiernan® V-notch gas flow control orifice, which is in use around the world, provides a wide control range and repeatability. Pressure/vacuum regulators that are directly mounted on the gas supply container or gas manifolds reduce the gas pressure to the necessary operating vacuum. The regulator is available in a wide range of capacities, with or without switchover function.

A range of direct gas feeders is available even for treating molten aluminium and alloys with chlorine and inert gases.



PROVEN V-NOTCH



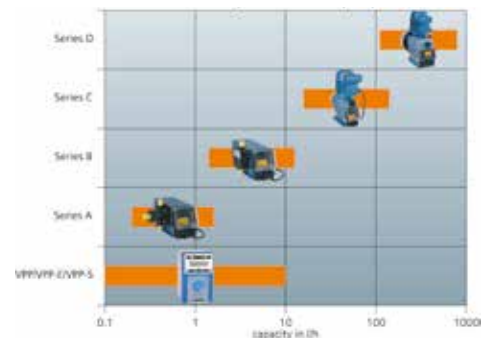
V10K™ AUTOMATIC GAS FEEDER

LIQUID FEED SYSTEMS/DOSING PUMPS

Chem-Ad® Series Pumps

The range of Chem-Ad® pumps is characterized with excellent reputability and optimum of chemical resistances.

The various Chem-Ad® VPP/VPP-E/VPP-S peristaltic dosing pumps meter small quantities with a maximum of accuracy and work reliably with degassing liquids such as sodium hypochlorite as disinfectant.



RANGE OF CHEM-AD PUMPS

DOSING OF POWDER ACTIVATED CARBON

JETPAK System

The compact JETPAK system consists of a combined preparation and holding tank for humidified and acidified powdered activated carbon slurry ensuring dust free handling. The slurry is extracted by an injector and is supplied to the application points.



JETPAK SYSTEM

MEASUREMENT AND CONTROL, DATA MANAGEMENT

HYGIENIC PARAMETERS IN POTABLE, POOL AND PROCESS WATER

The DEPOLOX® 700 M system is suitable for applications in potable and process water treatment. It measures up to six parameters. The SFC system is designed for the measurement and control of single parameter.



DEPOLOX 700 M SYSTEM

SPECIAL SYSTEMS

The GMS plus gas detection system can be used wherever gases such as chlorine, chlorine dioxide or ozone are generated, stored and metered. This reliable dual channel measuring system allows gas concentration and temperature to be monitored in up to two rooms.



GMS PLUS SYSTEM



DEPOLOX POOL E 700 POOL MANAGEMENT SYSTEM

The DEPOLOX Pool E 700 P system is the main measurement and control device for swimming pools. It can measure up to seven parameters (free and combined chlorine, total chlorine, pH, ORP, conductivity and temperature). The system carries out comprehensive control tasks like CEDOX affecting all pool processes.

The compact system DEPOLOX Pool Compact is a basic system for the main pool parameters to measure free chlorine pH value and ORP.

DATA MANAGEMENT

Process Monitoring System, OPC-Server

The Process Monitoring System provides access to the complete, tried and tested range of Wallace & Tiernan® measurement and control systems, applicable for one or from multiple clients simultaneously.

Evoqua Water Technologies OPC-Server allows simple connection of all RS 485 units to Windows-based visualization systems.



PROCESS MONITORING SYSTEM



SMARTPHONE VISUALIZATION

LABORATORY AND INDUSTRIAL WATER TREATMENT

ION EXCHANGER

SG 2000 to SG 15000 systems

The high quality 1.4404 stainless steel deionizers can be operated at pressures up to 10 bar. They are significantly more resistant to mechanical stress than conventional glass fiber reinforced cartridges. Evoqua has optimized the water flow to ensure that the resin bed can be used to its full capacity.

The deionizers are available with the proven stainless steel quick-fit couplers or with 3/4" and 1 1/4" threaded connectors. An extensive range of accessories like conductivity meters, conductivity electrodes, tubing sets etc. is available.



CHOICE OF ION EXCHANGERS

LABORATORY WATER TREATMENT

The systems can produce ultrapure water according to ASTM type I / ISO 3696 with 18.2 MΩ/cm (equivalent to 0.055 μS/cm). The systems can be connected to demineralized water or directly to the municipal water supply. With the extension stages UV and UV/UF/TM Evoqua meets the requirements of all applications in modern laboratories.

COST EFFECTIVE LABORATORY WATER SYSTEMS

LaboStar® systems

The LaboStar® series is the cost effective means of producing analytical grade water. This extremely compact ultrapure water system can be used on a laboratory bench or mounted on the wall.

The LaboStar system is fed with either deionized water, distilled water or permeate from a reverse osmosis system. The water quality exceeds all relevant standards including ASTM Type I, CLSI and ISO 3696 Type I.



LABOSTAR SYSTEM

LABORATORY WATER SYSTEMS FOR HIGH DEMANDS

Ultra Clear® systems

The Ultra Clear® systems have a fixed and optional flexible dispenser to bring water to your work. They supply the highest water quality for all clinical test and research areas.

The units that include UV oxidation, TOC monitoring (TM) and ultrafiltration deliver RNase-, DNase- and DNA free water.



ULTRA CLEAR TP SYSTEM

Systems are also capable of producing purified water with Endotoxin levels of < 0.001 EU/ml. The dispense flow rate of ultrapure water is 2 l/min. The high resolution display with self-explanatory functional diagrams shows detailed information about all components and indicates the conductivity in $\mu\text{S}/\text{cm}$ or resistivity in $\text{M}\Omega\text{cm}$ with the corresponding water temperature.

INDUSTRIAL SYSTEMS

Protegra CS® RO / EDI systems

Laboratory, medical and industrial applications all need pure water in various qualities and flow rates. Protegra CS® RO / EDI systems produce pure water for a wide variety of applications by reversing the natural reverse osmosis process to deionize water in an environmentally friendly manner. Pure water produced via reverse osmosis can be put to a number of uses - for rinsing laboratory glassware or as feed water for autoclaves, climatized cabinets and ultrapure water systems.

The Protegra CS RO Series focuses on economic efficiency, combining a compact design with high quality components and intelligent controls.

The Protegra CS RO Series is designed to produce large amounts of purified water with conductivity values depending on the salt content of the feed water < 20 $\mu\text{S}/\text{cm}$. The deionization rate is at least 98 %.

The systems can be easily extended with EDI-cells to achieve conductivity levels < 0.1 $\mu\text{S}/\text{cm}$.



PROTEGRA CS® RO EDI SYSTEM



PROTEGRA CS® OPEN FRAME

PROJECTS

Projects are one of our strengths. Not only do we tailor laboratory systems to your needs, but we also offer project-specific large-scale systems for industrial purposes.

It is also possible to supply larger systems with flowrates > 3000 l/h.



RO 3000 SYSTEM

ACCESSORIES AND CONSUMABLES

Evoqua offers a full range of complementary products including a series of components and consumables e.g. softener, storage tanks, pressure boosting or UV disinfection systems.



CONSUMABLES

VAF™ FILTRATION SYSTEMS

V-SERIES™ AUTOMATIC SCREEN FILTERS

VAF™ brand V-Series™ filters represent the latest technology available in automatic self-cleaning screen filters. The efficiency and simplicity of the mechanical system that drives the cleaning process truly differentiate these filters from the competition.

APPLICATIONS AND MARKETS

- Agriculture, Irrigation, Aquaculture

FEATURES

- Patented* bi-directional drive improves screen cleaning efficiencies resulting in:
 - 100% screen cleaning with controlled suction nozzle rotation
 - 10% overlap engineered into the spiral path of the rotating suction nozzles
- 316L stainless steel filter bodies priced competitively against carbon steel filter bodies
- Pre-assembled filtration systems to meet any flow demand engineered to meet each customer's specific requirements
- Available with ASME or NSF® certification on select models
- Broad range of materials, pressure and temperature ratings available

BENEFITS

- 70% fewer moving parts (no limit switches or pistons reversing the cleaning mechanism)
- Simpler controls
- Flush waste is less than 1% of system flow
- Greater cleaning efficiency
- Lower maintenance requirements
- Filter remains on-line during the self-cleaning process



SPECIFICATIONS

Materials

- Filter Body: 3" - 40" inlet/outlet 316L SS **
- Screens: 316L SS sintered **
- Flanges: AWWA Class D **
- Seals: Nitrile, viton, silicone **

Filtration Range: 10 to 1500 micron

Flow Range:

7 to 2,274 m³/hr (30 to 10,000 gpm) per filter *

Maximum Pressure: 10 bar (150 psi) **

Minimum Pressure: 2 bar (30 psi) **

Maximum Temperature: 80° C (176° F) **

Flush Cycle: 12 to 15 seconds

Controller: MicroFlush™ control system - up to four filters **

* VARIES DEPENDING ON MICRON LEVEL

** OTHER OPTIONS AVAILABLE UPON REQUEST



VORTISAND® FILTRATION SYSTEMS

CROSS-FLOW MICROSAND FILTRATION SYSTEMS

Vortisand® systems are synonymous with water filtration, serving the industrial water markets since 1986. The award-winning Vortisand filter is a High Efficiency Microsand Filtration System. It is a high capacity media filter that combines cross-flow dynamics with microsand media to achieve submicron filtration performance. This technology allows the unit to operate at filtration rates of up to 5 times greater than those of traditional media filters, while filtering 10-50 times finer.

With over 2,500 installations worldwide, Vortisand has become a leader in high efficiency filtration systems.

APPLICATIONS & MARKETS

- cooling towers, pretreatment, oil & gas, water reuse, food & beverage, semiconductor/microelectronics, data centers, wastewater, drinking water

BENEFITS

- High efficiency submicron filtration
- Higher flow
- Automated operation
- Lower cost of operation (reduced water consumption, energy savings, reduced chemical costs, low maintenance costs)

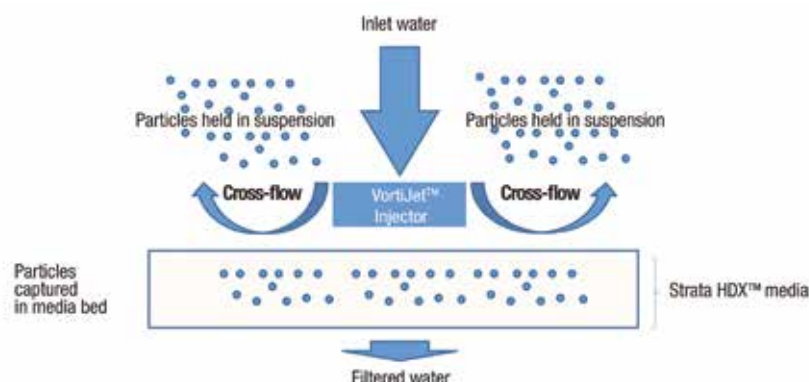


HOW IT WORKS

Vortisand filtration systems use exclusive VortiJet™ diffusers to generate cross-flow patterns that sweep the surface of the media. This sweeping motion causes a portion of the water to flow parallel to the top media layer, allowing for high filtration rates while preventing fouling and channeling.

Contaminants trapped in suspension and within the microsand media (depth filtration) are easily removed using an automatic backwash cycle. The system's backwash cycle requires less flow and a shorter duration than traditional sand or multi-media filters.

The result is a technology that removes particles down to submicron levels at 4 to 5 times the hydraulic flow rate of other media filters, while requiring up to 50% less water for backwash.



DEFENDER® FILTER

REGENERATIVE MEDIA FILTER

The Defender® Regenerative Media Filter is an advanced water filtration system designed for recreational water applications. Its unique operation, design, and perlite media significantly reduces water and waste by eliminating the need to backwash water like traditional sand filters. It takes up less space during construction, filters better, and saves water, energy and chemicals.

BENEFITS

- In comparison to conventional sand filters, up to:
 - 90% less water demand
 - 75% less space
 - 50% less energy demand
 - 30% less chemicals
- Removes particles down to 1 µm
- According to DIN 19643
- pH independent, no flocculant needed
- No backwash water tank
- 10 year limited warranty



REMOVES PARTICLES DOWN TO 1 MICRON

The Defender Regenerative Media Filter achieves the highest quality of water by removing particles down to 1 micron. This is 20 to 30 times finer than sand. Benefits include:

- Extension to the life of the filter
- Unsurpassed water quality
- Improved UV disinfection performance
- Up to 30% chemical consumption savings
- Controls turbidity to levels better than those required for drinking water.

THE "BUMP"

It's all about the "Bump" - The Defender filter is programmed to automatically "bump" on a daily basis to regenerate the media coating of the "Flex Tubes". This incredible benefit maximized system performance and reduces water consumption.

HOW IT WORKS

As the bump tire deflates **(A)**, the tube sheet lowers to loosen the media and trapped debris. The re-inflation of the bump tire **(B)** raises the tube sheet and forces water into the "Flex Tubes", gently expanding them to fully release all material. This bump cycle pulses ten times to ensure the entire cleaning process.

At the completion of the bump cycle, the Defender filter will automatically pre-coat the "Flex Tubes" and recommence the filter cycle. The "Bump" is a vital function in order to achieve superior filtration and to make the most out of every filter cycle.





PLEASE FIND THE COMPLETE CASE STORY ON OUR HOMEPAGE OR CONSULT YOUR SALES OR SERVICE CONTACT PERSON.

WATERWORKS BEELITZHOF, BERLIN, GERMANY

Disinfection of potable water

[Main Product](#)

V10k™ chlorine gas feed system



KAMAS FISH HATCHERY, SUMMIT COUNTY, UTAH, USA

Pre-filtration to UV

[Main Product](#)

VAF™ brand V-Series™ (V-1500 Filter)



ECOMUSEUM ZOO, MONTREAL, CANADA

Side stream filtration system

[Main Product](#)

Vortisand® cross-flow microsand filtration system



FINA WORLD CHAMPIONSHIPS, BARCELONA, SPAIN

Filtration of pool water

[Main Product](#)

Defender® regenerative Media Filter

EVOQUA WATER TECHNOLOGIES FACILITIES IN EMEA - EUROPE, MIDDLE EAST, AFRICA



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BENEFIT FROM OUR LONG-LASTING PRODUCTS AND COMPREHENSIVE KNOW-HOW OF OUR EXPERIENCED EMPLOYEES.

SERVICE

Service and maintenance contracts

Service and maintenance contracts cover regular customer services with a defined scope for the operation and or maintenance of the customer's water treatment plants.

On-site service

On-site services cover a wide range of needs such as: plant repairs, commissioning of new systems, unscheduled maintenance as well as disinfection of water systems.

Spare parts/repairs

Evoqua Water Technologies keeps original spare parts in stock for the entire product lifetime, and also offers consumables as well as a comprehensive range of repair services.

Retrofitting and alterations

Our technical service department provides support for operation, water and energy audits, and can also perform retrofits or alterations to Evoqua or competitors' systems upon request.



What Service means to us:

- We offer to our industrial and municipal customers operational, maintenance and emergency services for their water treatment plants. As a trusted partner we help our customers to improve the quality of their water and wastewater, while also cutting costs by:
 - Lowering production costs
 - Improving operational reliability
 - Ensuring reliable adherence to official regulations



RELIABILITY

EXTENSIVE DOCUMENTATION COMPLETES OUR PRODUCTS. WE WILL KEEP YOU UP TO DATE ABOUT TECHNICAL CHANGES, IMPROVEMENTS AND ENHANCEMENTS. OUR FIELD SERVICE AND OFFICE STAFF ARE READY TO PROVIDE EXPERT ADVICE AND SUPPORT.



ABOUT EVOQUA

Evoqua Water Technologies is the global leader in helping municipalities and industrial customers protect and improve the world's most fundamental natural resource: water. Evoqua has a more than 100-year heritage of innovation and industry firsts, market-leading expertise, and unmatched customer service, where it continues to transform water and wastewater. Its cost-effective and reliable treatment systems and services ensure uninterrupted quantity and quality of water, enable regulatory and environmental compliance, increase efficiency through water reuse, and prepare customers for next-generation demands.

Evoqua's unparalleled portfolio of proven brands, advanced technologies, mobile and emergency water supply solutions and service helps cities across the world provide and discharge clean water, and enable leisure and commercial industry to maximize productivity and profitability. For more information, visit www.evoqua.com.



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