



# Treatment systems waters





# WATER PROCESS FOR THE INDUSTRIES

Farmers, hospitals and industrialists are major consumers of water. Used for irrigation or as a thermal fluid in cooling circuits for example or for human consumption, these waters must be treated with great care to be purified in order to achieve the expected physical and chemical properties.

Our expertise and our know-how allow us to offer you global solutions for the treatment of your process water.

Water for the process can be prepared with two major streams: membrane filtration or ion exchange resins.



Industries	Rinsing water	Urban heating water	Cooling tower water	Potable water	Process water	Other applications	Boiler water
Agriculture							
Food industry							
Textile industry							
Chemical industry							
Glass industry							
Surface treatments							
Mechanical industry							
Electronic industry							
Automobile industry							
Thermal power plants							
Production plants							
Local communities							
Hospitals and laboratories							
laundries							
Other industries							

# USED WATER

## DAF Systems

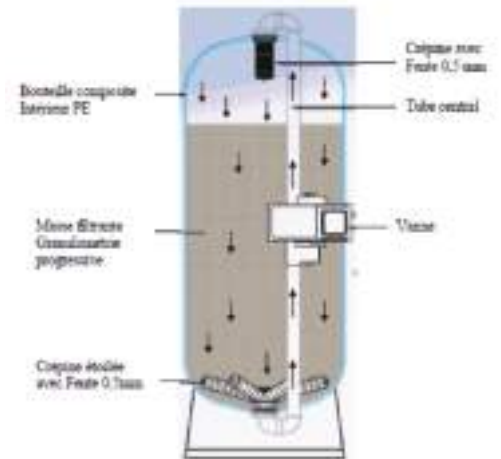
The pollution of industrial wastewater has shown parallel development with the evolving sector. Chemical packaging processing facilities that are widely preferred by the industry can be designed to be adapted to discharge conditions and to be reused in processes. Some sectors using industrial package processing facilities are:

- Slaughterhouses
- Dairy factories
- Textile manufacturing plants
- Pharmaceutical industry
- Service stations



## Multimedia filtration systems

Multimedia filtration systems are used as pretreatment systems in the treatment of process water and drinking water, as well as in the removal of turbidity from treated water from wastewater treatment systems. STS Aritma's fully automatic multimedia filtration systems can purify your water in commercial and industrial areas from coarse sediments, suspended solids, particles and substances that create turbidity in the water. They can make your water usable.

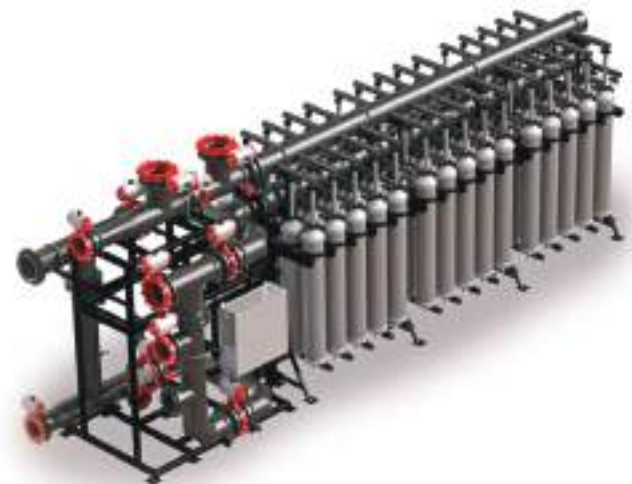


## The ultrafiltration system

The ultrafiltration system is one of the membrane solutions that offer significant advantages for the treatment of spring water and drinking water. Ultrafiltration systems whose membranes have a pore diameter of 0.01 micron can purify your water from viruses, bacteria, turbidity and other microorganisms without the use of chemicals. STS Aritma ultrafiltration systems are designed using high technology membranes from leading manufacturers in the market.

### Characteristics:

- Vertical membrane module
- Stainless steel backwash pumps
- Chemical wash - backwash units
- Electric Actuated Valves
- Digital input rate
- Pressure gauge
- Pressure transmitters for differential pressure control
- PLC based controller and operator panel
- AISI 304 stainless steel frame







# UNITS IN CONTAINER

## Water treatment with membrane technology

Reverse osmosis membranes allow the retention of dissolved or suspended substances in water (eg ionized minerals, bacteria, organic matter and other undissolved substances). That's why we talk about desalination. In terms of elimination, we are talking about global salinity.

Focused primarily on reverse osmosis technology, Watertech engineering strives to optimize the operating conditions of its facilities. Two directions are privileged:

- Pretreatment of water to limit membrane clogging
- Reducing energy costs to reduce the cost of desalination and improve the balance sheet environmental.

We offer you the following membrane technologies:

- Reverse osmosis
- Nanofiltration
- Ultrafiltration
- Microfiltration

Type of membrane according to the case		
Membranes type	Salinity to be treated	Operating pressure
Nanofiltration	0 at 3 g/l	4 at 10 bar
Reverse osmosis / brackish water	1 at 10 g/l	0 at 40 bar
Reverse osmosis / seawater	> 10 g/l	40 at 80 bar

## Industrial, agricultural and marine applications

Whether for your process water needs, irrigation, the treatment of your wastewater, ... Watertech can meet your needs for:

- production of ultra pure water
- purification and concentration of solutions (example: juices and dairies)
- treatment of evaporation condensates
- boiler water production
- desalination of brackish water, well water, seawater for irrigation and other applications
- reuse and recycling of waste water to process, washing or make-up water
- removal of pesticides and micropollutants from surface water or groundwater

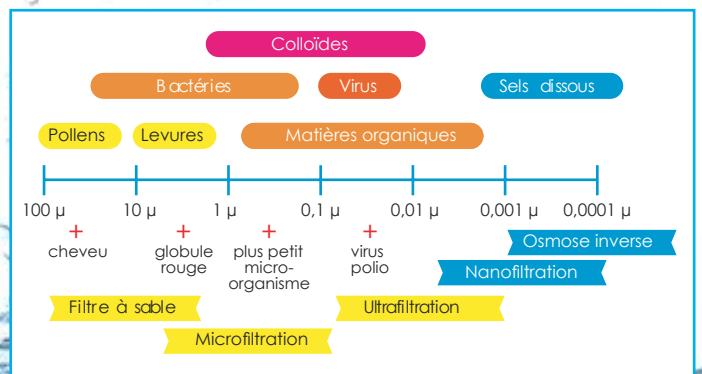
## Applications in the tourism sector and small communities

We have a wide range of applications ranging from water purification to water reuse:

- desalination of brackish water or sea water
- softening of weakly mineralized waters
- elimination of sulphates and metals
- reprocessing of wastewater

The applications mentioned above require a specific water quality that can be obtained by the membrane technique. Compared to other methods, membranes offer the following advantages:

- less chemical reagents
- small footprint
- reduced maintenance
- reduced operational cost
- constant quality of water







## Brackish waters and wells

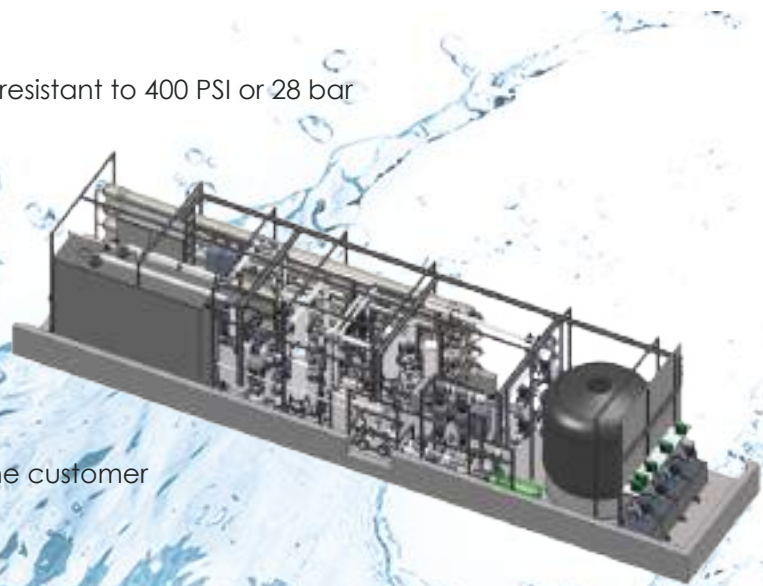
The solution has been specially developed for the desalination of brackish water and wells. This equipment rejects as a standard more than 99% of the salts contained in the water to be treated. The volume of treated water can vary from 1000 liters to 2500 m<sup>3</sup> / day for waters with a salinity level (TDS) between 1000 and 7000 ppm.

- High pressure and corrosion resistant piping (316 L stainless steel)
- Vertical centrifugal pump (single, double, triple) with frequency converter (VFD)
- High-resistance cartridge pre-filter
- High quality instrumentation and technology for long life
- Pre-filtration: cartridge filter with or without auto-rinse
- Pre-treatment: automatic anti-scaling dosing system
- Skid construction (316 L stainless steel)
- High quality reverse osmosis membranes adapted to water quality
- Support for ice-resistant fiber diaphragms up to 600 psi (40 bar)
- Hand valves, pressure gauges, sampling valves
- Conductivity measuring equipment, pH reading - Alarms
- Short rinsing system to oxygenate membranes temporarily "out of production"
- Membrane Cleaning System (CIP - Cleaning Industrial Process)
- Control cabinet



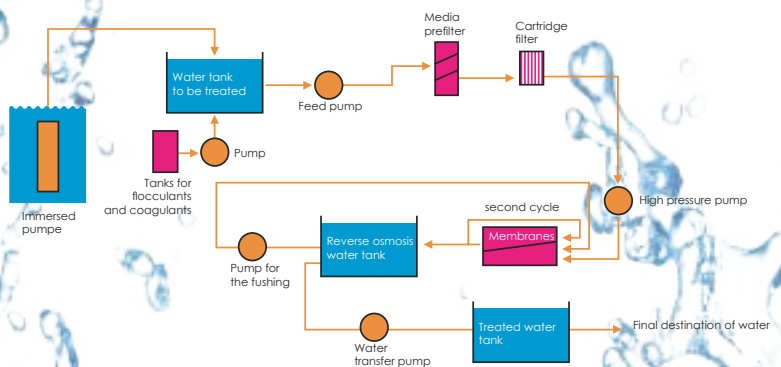
## Brackish waters

- Pre filter for 5 to 10 µ cartridge filters for small particles
- Centrifugal pump brand
- Glycerine pressure gauges
- RO membranes for salt removal
- Important membrane surface
- Fiberglass reinforced polyester membrane supports resistant to 400 PSI or 28 bar
- Regulating valves, for:
  - pump flow regulation
  - recycling flow regulation
  - flow control of the concentrate
- Rotameter-type flowmeters, for
  - reading of the permeate flow
  - read the flow of concentrate
  - reading of the recycling flow
- Digital conductivity measurement
  - conductivity reading at the input RO
  - conductivity reading of the filtrate
- Alarm when exceeding the standard imposed by the customer
- Sample tap at the entrance of the installation
- PVC low pressure piping
- High pressure INOX piping
- Manual valves, pressure gauges, sampling valves
- The entire installation is pre-mounted on stainless steel frame
- Rinsing system with osmosis water at the time of shutdown
- Short rinsing system to oxygenate membranes and reduce risks clogging enprovenance of bacteria





## Example of installation of a well water treatment unit.



Model n°	Permeat* litres/h	m <sup>3</sup> /j	Minimum pressure at the entrance (Bar)	Maximum TDS	Membrane amount	Delivery weight (kg)**
<b>Saltwater desalination units</b>						
HE-BW-1K	1000	24	2 Bar - 30 psi	7000 ppm	4	230
HE-BW-2K	2000	48	2 Bar - 30 psi	7000 ppm	5	360
HE-BW-4K	4000	96	2 Bar - 30 psi	7000 ppm	6	465
HE-BW-6K	6000	144	2 Bar - 30 psi	7000 ppm	8	650
HE-BW-10K	10 000	240	2 Bar - 30 psi	7000 ppm	10	710
HE-BW-25K	25 000	600	2 Bar - 30 psi	7000 ppm	12	1650
<b>Seawater desalination units</b>						
HE-SWERS-1.0K	1000	24	2 Bar - 30 psi	45.000 ppm	2	varies according to the configuration chosen the configuration
HE-SWERS-5.0K	5000	120	2 Bar - 30 psi	45.000 ppm	8	
HE-SWERS-10.0K	10 000	240	2 Bar - 30 psi	45.000 ppm	16	
HE-SWERS-14.1K	14 100	338	2 Bar - 30 psi	45.000 ppm	24	
HE-SWERS-18.0K	17 916	430	2 Bar - 30 psi	45.000 ppm	28	

Belgian independent company, Watertech provides tailor-made or standard solutions for water conditioning and treatment. The main applications are softening, desalination of brackish and sea water, treatment of process water and any recycling water treatment.

Watertech also offers solutions that allow the reuse of water for industrial and urban use. It is therefore a key element in the management of water resources and the creation of new sources of availability.

- an experienced team, multicultural and close to the field
- a comprehensive study to have a vision and a global approach to your needs
- engineering and the realization of customized projects
- the design, manufacture and adaptation of your reverse osmosis equipment
- pretreatment (eg pH modification, media filtration, coagulation, flocculation)
- post-treatment (eg UV, ozone, chlorine, ...)
- innovations in energy.

Our goal, to guarantee you the solution adapted to your needs and that in a defined budget.



# Chassis units



## Watertech Mobile unit for quality water

Our reverse osmosis systems in containers are able to remove dissolved salts and other impurities such as bacteria, carbohydrates, proteins, dyes and compounds with a high molecular weight.

The devices are designed, manufactured and tested at the factory to the highest standard. The unit is mounted in a 20 or 40 foot shipping container depending on the model, which facilitates transportation.

Fast delivery and installation, linked to reduced space usage and few requirements during site assembly work

The high quality of the material and the use of components produced by renowned manufacturers, allow us to offer our customers a quality product, with a long life and good operation.

Our systems are suitable for the treatment of seawater and brackish water. Even industrial or municipal wastewater can be treated if our MBR system is connected upstream (membrane bioreactor).





# Network of subsidiaries

WATERTECH SA with its subsidiaries and partners around the world, provides its customers with answers in line with their economic and environmental issues, in water treatment technologies.

Any project is built with a combination of local contractors and design staff from WATERTECH SA headquarters. Our network of professional engineers and technicians collaborate to give any project the organization necessary to succeed.

Expert advice and professional operations are part of the WATERTECH service package.

