



Cation

Anion

Demineralization units

EUROWATER
A GRUNDFOS COMPANY

Reliable demineralization plants

EUROWATER has many years of experience developing and manufacturing long-life water treatment plants with high operation reliability and low operating costs.

Demineralized water - without pre-treatment

Demineralization is the removal of dissolved solids in the water through ion exchange. A demineralizer requires no special pre-treatment of the inlet water to achieve demineralized water quality. The plants are used for production of rinse water, process water, boiler water and other applications.

Customized solutions

The product range comprises a number of standard series with flow rates up to 20 m³/h. The modular design makes it possible to customize solutions to individual requirements for demineralized water, thus keeping the total lifetime costs at a minimum.

The optimum solution

Selection of plant depends on application, water quality and water consumption. Our specialists are at your service to ensure the optimum solution.

Quality control

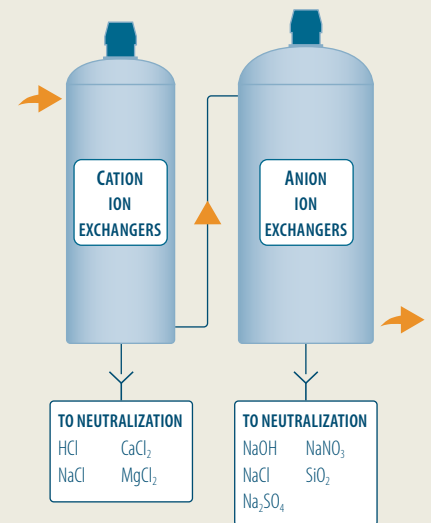
A quality-controlled demineralizer is the most economical solution since the system fully utilizes its capacity. The production of demineralized water automatically stops when the conductivity in the water exceeds the quality limit. An automatic regeneration process is then initiated. When the conductivity once again is below the quality limit, the system will automatically resume operation.

Meter control

If there are strict requirements for silica content, the demineralizer must be meter-controlled so that regenerations initiate according to a predetermined capacity. The capacity is calculated so that regenerations will start just before breakthrough of carbon dioxide and silica.

DEMINERALIZATION

In a demineralizer the water first passes through a cation column in which the cations in the water are exchanged for hydrogen ions, H⁺. Then the water passes through the anion column in which the anions of the water are removed by exchange for hydroxide ions, OH⁻. The H⁺ and OH⁻ then combine to form water, H₂O.



When the plant capacity has been exhausted, the cation column is regenerated with hydrochloric acid and the anion column with sodium hydroxide.

To utilize the system capacity in a balanced way and to optimize consumption of chemicals for the neutralization process, the cation column is often smaller than the anion column.



DMS

Semi-automatic demineralizers with co-current regeneration.
Flow rate: Up to 5 m³/h
Quality: 5-20 µS/cm

DME

Automatic demineralizers with co-current regeneration.
Flow rate: Up to 5 m³/h
Quality: 5-20 µS/cm

DMHE

Fully automatic demineralizers with co-current regeneration.
Flow rate: Up to 20 m³/h
Quality: 5-20 µS/cm

Continuous water consumption

If a continuous water supply is needed, two demineralizers can be connected in duplex. In this way, one demineralizer is in operation while the other regenerates.

Existing demineralizers can also be extended into duplex.

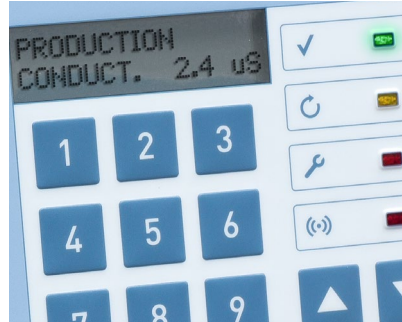
Water quality

A demineralizer can normally produce a water quality of 5-20 $\mu\text{S}/\text{cm}$. With counter-current regeneration the value can be as low as 1-5 $\mu\text{S}/\text{cm}$. If ultrapure water with even lower conductivity is required, further treatment will be necessary. This treatment is typically done in a mixed-bed ion exchange plant where the resulting conductivity can be as low as 0.06 $\mu\text{S}/\text{cm}$.

User-friendly control

Each plant comes with a customized PLC control. Our controls are purpose-made and individually programmed by our own engineers.

The simple user interface makes it easy to control parameter settings as well as operation and regeneration.



ACCESSORIES

Regenerant tanks

All demineralizers are supplied with regenerant tanks. It is also possible to draw acid (hydrochloric acid) and lye (sodium hydroxide) directly from the original containers.

Neutralization of discharge water

The regeneration water from the demineralizer must be neutralized before being led to drain. For this purpose, a batch neutralizer can be supplied. The water is led to a reservoir and mixed thoroughly whereby the hydrochloric acid and the sodium hydroxide neutralizes one another.

A neutral pH-value can be achieved with after-neutralization.

Co-current or counter-current regeneration?

With co-current regeneration, the flow direction during operation and regeneration is the same.

With counter-current regeneration, the flow direction during operation and regeneration is opposite. The results are more efficient regenerations, very low conductivity, and less consumption of regeneration chemicals.

Circulation

Low water consumption or periods of downtime may result in a conductivity increase and unnecessary regenerations. To prevent such undesirable effects, all demineralizers are equipped with continuous circulation.

Frame-mounted demineralizers

As standard, all demineralizers are mounted on frames with vessels, pipe system and controls integrated.

Frame-mounted demineralizers are factory-tested before shipment. The packaged design ensures safe and quick installation and commissioning.



DMCE

Fully automatic demineralizers with counter-current regeneration.
Flow rate: Up to 13 m^3/h
Quality: 2-5 $\mu\text{S}/\text{cm}$

UPCORE

Fully automatic demineralizers with counter-current regeneration.
Flow rate: Up to 50 m^3/h
Quality: 1-3 $\mu\text{S}/\text{cm}$

Robust demineralization plants

Demineralization plants are a long-time investment and EUROWATER uses the best materials available. Our time horizon is often 25 years.



Non-corroding filter tanks

The tanks are made of steel and can therefore resist pressure fluctuations. They are also surface coated with PPA, a high-performance factory applied polyethylene coating. Thus, the filter tanks combine the strength of steel with the strong anti-corrosion properties of the PPA (C5-M).

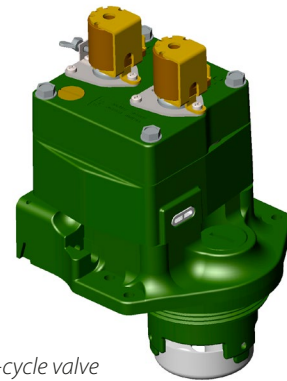
Pipe system without silicone

As standard, the supplied pipe system is of PVC and is resistant to corrosion and chemicals. All gaskets and o-rings are of silicone-free materials. The pipe system is also available in other materials such as PP and PVDF.

Reliable valve

Our patented five-cycle valve is made of high-quality synthetic material and has few movable parts. This ensures a long life and minimum maintenance.

The valve is developed and designed especially for the EUROWATER plants. It ensures efficient and careful treatment of the ion exchangers.



Five-cycle valve

Fully documented service

We offer fully documented service including a service report. Our service comprises a number of check points in accordance with a check list and a maintenance plan. Service is based on written procedures to ensure high and uniform quality.

A service agreement with EUROWATER is customized so that the extent and frequency of service visits is based on application, operating conditions, and a risk assessment.

We have local service technicians all over Europe. Our service cars are equipped with a broad range of spare parts enabling us to solve possible problems on site.

Pure water treatment since 1936

EUROWATER has many years of experience with development, production, sales and servicing of customized and reliable water treatment plants with a long life and minimum maintenance. The secret lies in material choice, technical know-how and committed employees. We guarantee quality and flow!

The company of SILHORKO-EUROWATER has more than 400 employees throughout Europe. Our plants are sold through subsidiaries and local distributors under the EUROWATER brand.

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