



**NORWATER®**

REVERSE OSMOSIS  
FRESHWATER MAKER SYSTEMS





## ABOUT US

Norwater AS is located in Kvinnherad on the west coast of Norway, between Bergen and Haugesund. The company is fully owned by local Norwegian owner Barge Invest AS. From years of experience since 1995, Norwater AS has become a reputable supplier of freshwater maker systems (NorWater) and HSE equipment (NorBarrier) to vessels and rigs in the marine-, fish farming- and offshore industries.

The primary business and product group is the **NorWater** Freshwater Makers. By the use of the Reverse Osmosis technology, these systems convert seawater to freshwater for use on ships, rigs or onshore. There are more than 300 NorWater systems in operation worldwide, by major clients like Statoil, BP, Seadrill, Odfjell Tankers and many more. These are supported by an efficient and competent after sales team in Norwater, with an increasing number of partners in a global network.

Norwater AS also has a range of own design **NorBarrier** HSE Equipment. Products include Belt Barriers and Self-Closing doors/gates – all specially designed to meet the most stringent set of requirements in the North Sea. There are more than 2,500 NorBarrier units in operation, limiting access to restricted areas. Customers include Statoil, BP, Seadrill, Stena Drilling, Odfjell Drilling to mention a few.

Norwater is ISO 9001 certified, and we are qualified according to Achilles JQS and FPAL.



## VISION

- To be a preferred supplier of **quality RO Freshwater Maker Systems** & services



# Why Reverse Osmosis as your source for fresh water?

Reverse Osmosis is a well-known process which has been under continuous development since the first experimental systems were introduced back in the 1950s. Reverse osmosis systems from Norwater produce high quality potable water from sea water. Our products are proudly manufactured in Norway.

## The Reverse Osmosis Technology

Reverse osmosis (RO) is a water purification technology that uses a semipermeable membrane to remove larger particles from drinking water. In reverse osmosis, an applied pressure is used to overcome osmotic pressure.

Reverse osmosis is most commonly known for its use in drinking water purification from seawater, removing the salt and other effluent materials from the water molecules.

There are obviously pros & cons with various sources for freshwater supply for your vessel or rig. Norwater AS is product specialist for Reverse Osmosis only, but would still like to highlight some areas where a Reverse Osmosis system may imply added value versus alternatives:

- Easier installation (less piping)
- Reduced operational cost (maintenance, fuel consumption)
- "Slow Steaming" (fuel consumption)
- Environmental legislations compliance
- Increased availability and flexibility
- Increased water quality control
- Low energy consumption
- More efficient main engines on ships may require alternative freshwater production.

## Water quality guarantee

The fresh water produced by NorWater Reverse Osmosis Systems is of high-quality potable water standard, exceeding requirements set by both the WHO (World Health Organization) and NIPH (Norwegian Institute for Public Health).



# NORWATER®

## WHY CHOOSE NORWATER

- Compact design
- High grade materials
- Easy maintenance access
- High pressure pump specially designed for RO
- System design reducing operational cost
- Experienced supplier to offshore & navy, reflected in quality of products, documentation and customer service
- Increasing international network
- Small & dedicated company with flexibility, short decision lines and top customer service





NWE3-15



NWC3-60/48



NWS4-150



NWS8-360

## NWE-SERIES

*“Optimized design to meet the needs of smaller vessels. Extremely compact”*

- Capacity: 5 - 40 tons/day
- Main dimensions from:  
L: 1,4m x W: 0,6m x H: 0,9m
- Dry weight from: 190 kg
- Power consumption: 5-8 kW

## NWC-SERIES

*“The most popular design, chosen by several large and reputable companies”*

- Capacity: 40 - 90 tons/day
- Main dimensions from:  
L: 1,9m x W: 1,0m x H: 1,4m
- Dry weight from: 890 kg
- Power consumption: 18-23kW

## NWS-SERIES (standard range)

*«New compact design for high capacity demand. Chosen by major offshore companies and Ro-Pax ferry operators»*

- Capacity: 100-150 tons/day
- Main dimensions:  
L: 2,6m x W: 1,4m x H: 2,1m
- Dry weight from: 1600 kg
- Power consumption: 30-36kW

## NWS-SERIES (large systems)

*«For extreme capacity requirements. Flexible in capacity, applied in the Fish-farming industry»*

- Capacity: Flexible
- Technical data, weight, electric consumption will be product specific depending on chosen capacity.
- Energy recovery system available



## Technical Water

The NorWater range also includes the additional feature to produce «Technical» or «Utility» water.

This water is more pure than normal potable water (< 15 ppm) with different areas of application, like cleaning of chemical tanks as one example. The production of technical water is solved by a 2nd stage of membranes and the use of outlet water from 1st stage as inlet water to 2nd stage of membrane filtration. Norwater clients have included this product as part of a cost reduction program.

- Efficiency of latest design main engines
- Environmental legislations (sulphur content in fuel)
- Cost efficient tank cleaning (e.g: chemical carriers, special bulk cargo)
- Increased availability and quality of freshwater
- Increased flexibility and readiness of ships in spot trade

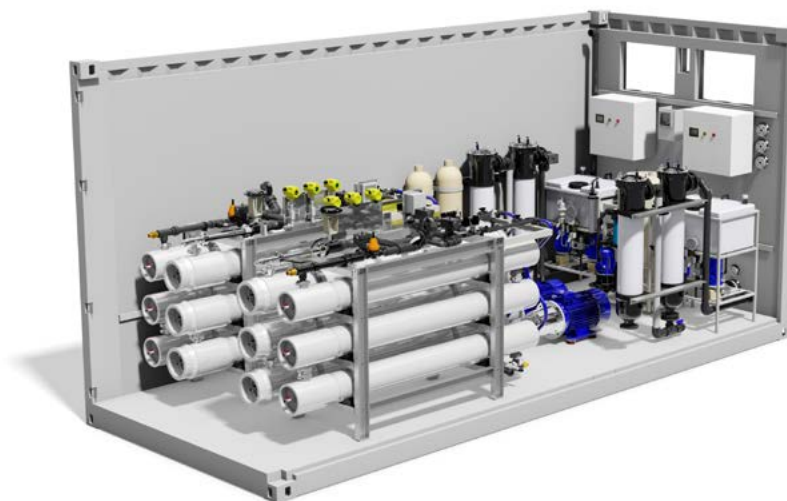


## Containerized Systems

From time to time there may be reasons why you would not retrofit a normal freshwater maker package to your machinery room. You may need the freshwater supply only for a limited time period, or there could be practical limitations preventing such installation. In these cases, a containerized system on deck may be the ideal solution.

In a containerized system all parts and equipment are installed and fixed inside the container, including pre-treatment, post-treatment and all piping and cabling.

**Feel free to present your need to us! We can offer solutions both for rental or purchase.**





# NORWATER®

Freshwater

## WHY CHOOSE NORWATER:

- Competitive price
- Compact design
- High grade materials
- Minimal operational cost
- High quality documentation
- Professional customer support



## APPLICATIONS & REFERENCES

Norwater large capacity freshwater of potable and cleaning water may be applied to;

- Well boats for the fish farming industry
- Fish farming
- Landbased installations
- Service boats for the fish farming industry

References for large systems include both well boats and fish farms.





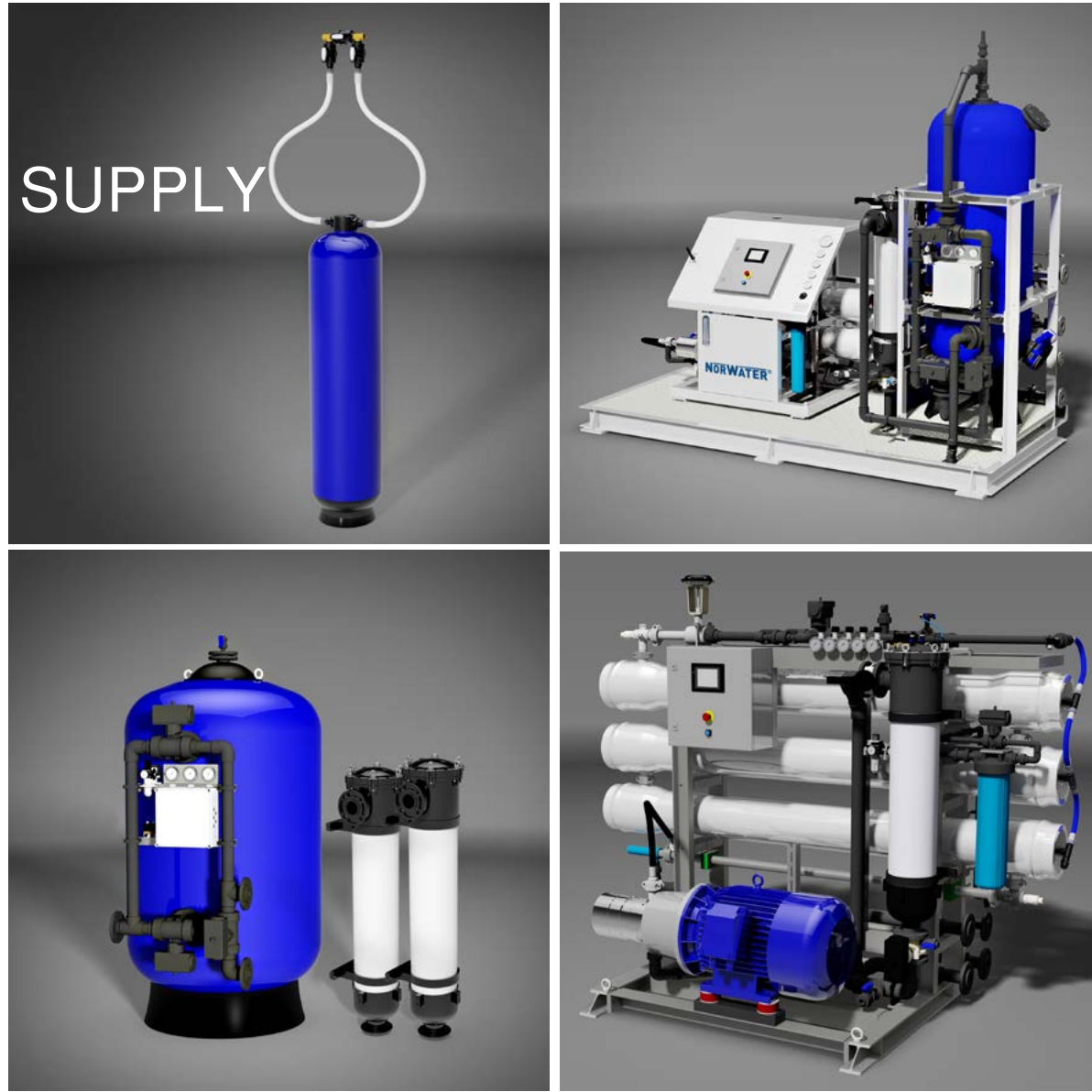
## FRESH WATER SYSTEM SUPPLY

Norwater has great focus on a «system design & -delivery».

To ensure correct quality of seawater before the fine-filtration with membranes in the RO-unit, a pre-filtration of the seawater is vital. Depending on actual conditions (seawater quality, capacity, flow, etc) this may be done by Ultrafiltration, Mechanical filtration, Multimedia filtration or High Flow filtration. Norwater will upon given criteria, case by case recommend the best possible solution.

Minerals are added to the RO-produced freshwater by means of a mineralizing filter, before stored on the freshwater tank. As a final barrier of bacteria, it is recommended to have a UV between the freshwater tank and the water distribution system.

**Norwater offers this complete package.**



## UV STERILIZER

The UV disinfection system supplied by Norwater AS is carefully designed and calculated for efficient removal of bacterial substance in your drinking water system. Certified models are all tested in accordance to NEN-EN 14897 and type approved by NIPH for use on installations onshore & offshore. All models are intended for drinking water purpose within a wide range of certification and approvals, available for your specific need and requirement.







Selfclosing Door



Belt Barrier



Selfclosing Gate

## INNOVATIVE SAFETY PRODUCTS

For closing of restricted areas offshore and onshore

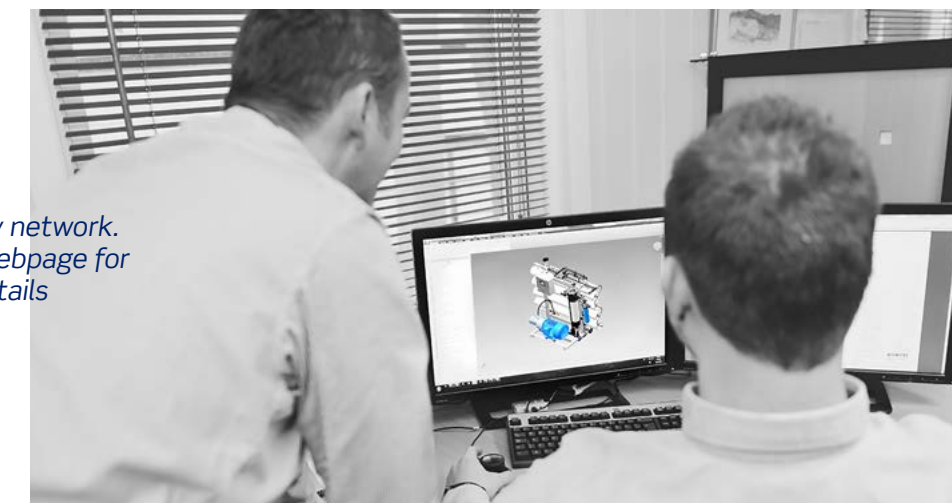
- Made for rough weather conditions
- Made of stainless steel and aluminium
- Adjustable tensioning spring system
- Manufactured in Norway

## NORWATER CAN OFFER

- New complete Reverse Osmosis systems produced in Norway
- Retrofit installations
- Reverse Osmosis systems for rental
- OEM-Spare parts
- Service / Survey of complete fresh water systems
- On-site training
- NorBarrier - Innovative safety products



Norwater agency network.  
Please visit our webpage for  
contact details



## SERVICE & AFTER SALES

**Our well skilled sales- & service personnel  
is ready to assist you at any time**

NORWATER AS  
Hoylandsbygdvgn. 435  
5457 Hoylandsbygd  
NORWAY

Phone: +47 53 48 35 50  
Fax.: +47 53 48 35 51  
Email: [post@norwater.no](mailto:post@norwater.no)  
web: [www.norwater.no](http://www.norwater.no)



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NORWATER AS  
HOYLANDSBYGDVGN. 435  
5457 HOYLANDSBYGD  
NORWAY  
Tel.: +47 53 48 35 50  
E-mail: [post@norwater.no](mailto:post@norwater.no)

[www.norwater.no](http://www.norwater.no)

