



HATENBOERWATER

Fresh in water since 1906.



Safe Water on Board

Providing your water from production
to consumption

Hatenboer-Water

Fresh in water since 1906,
independent, privately owned



Water treatment & services

With specialist expertise, in-house engineering, design and production in a modern operating environment, Hatenboer-Water supplies solutions for all your water-related challenges and basic needs. Economically sound and environmentally sustainable with all necessary worldwide after sales service. Hatenboer-Water, your partner in maritime water treatment and services.



Maritime expertise

Good and safe water on board is essential for the operation of any vessel or rig. Our vast maritime experience gives us a thorough understanding of your operations. We treat water from every source till it is of the proper quality on every tap point. Safe and healthy. The track record of more than two thousand maritime water treatment units worldwide is proof of our high standards.

*Your partner in maritime
water treatment and
services. Providing safe
water on board.*





Water makers

Desalination by reverse osmosis (RO) has proven to be a reliable and economical means of drinking water production. Hatlenboer-Water offers a wide range of high quality water makers. Your maritime and offshore demands and conditions are met by our proven and heavy duty designs. Hatlenboer-Water RO's are easy to install, easy to operate and continuously provide a perfect quality of drinking water on board.

Heavy duty design

Hatlenboer-Water has, based on more than 110 years of maritime experience and extensive knowledge, designed systems that guarantee a continuous and good water supply on board.

Even in the harshest conditions, where the crew can only rely on itself. Hatlenboer-Water systems use only the best materials; ensuring a long lifespan and low maintenance. Next to a dedicated standard series, Hatlenboer-Water also provides skids that are fully made to measure in order to meet owner demands.

Systems can be designed according to spec (ATEX, NORSOK, NIPH, IEC, NR13, AS1210, ABS) suitable for top sites, production platforms, FPSO etc.



Two pass Reverse Osmosis type desalination system

Advantages reverse osmosis

For the production of your water on board, reverse osmosis has, over the last decade, proven to be the best technology available. A reverse osmosis water maker produces high quality water which requires limited post treatment. The energy consumption is relatively low and the required maintenance is limited and can be performed by the crew. All these advantages result in a low Total Cost of Ownership for your water production.

Rental fleet

Hatlenboer-Water offers a fleet of mobile water treatment systems to help you to achieve key business goals. Ready-to-run equipment that is available when you need it. In times the demand for safe drinking water is higher than normal or capital resources are scarce.

Rapid deployable mobile units

Hatlenboer-Water provides units in various configurations: available quickly for emergency, additional, or prolonged term service! Contact us for temporary equipment services offering a unique flexible solution at minimum required time, effort and costs.



Proven quality / Mobile rental fleet



Hatenboer-Water RO system on board
Atwood Advantage drillship



Hatenboer-Water RO system on board
Transocean drillship

Tailored to your specifications

In addition to our heavy duty design of our systems, it is possible to include several design options tailoring to the more extreme demands rising from the vessel or rigs operating conditions:

- **Arctic design:** allowing you to operate under harsh conditions and feed water temperatures below 0°C.
- **Estuary design:** extensive additional pre-treatment allowing you to operate near coast lines or estuaries.
- **Explosion proof design:** for placement of the system outside the safe areas of your rig (Zone 1 / 2, ATEX / IECEx).
- **Shock proof design:** continuous water production even up to 20 G-force movements meeting navy requirements.
- **Eco design:** your water maker equipped with an energy recovery unit. A design that stands for an environmentally friendly and energy saving operation.
- **Owner specifications:** tailored to meet owners design specifications and owners preferred vendor list for key components.
- **Containerised:** for easy and quick sheltered installation.

Hatenboer-Water is partner for ship and rig operators, owners and builders in the global maritime and offshore industry.

Unique features of Hatenboer-Water RO

Extensive pre-treatment

All Hatেনboer-Water RO systems are equipped with a high capacity pre-treatment system, namely an efficient multimedia filtration and high load cartridge filter unit for the removal of particles, such as sand and mud. This results in limited fouling of the membranes, providing optimal water production and low operational costs.

Energy saving membranes

To guarantee long-lasting and trouble-free desalination of seawater into fresh water, the Hatেনboer-Water RO systems are designed with a large energy saving membrane surface.

Cleaning in Place unit

By regular cleaning of the membranes it is possible to extend their lifespan significantly. For this purpose RO's are equipped with an integrated CIP system to be operated by your own crew.



Zone 1 / 2, EX / IECEx





Hot and cold water modules

Hatenboer-Water can provide your complete cold drinking water and hot water supply on board. From production to tap point. Plug and play hot and cold water modules including interconnecting piping, wiring, pumps, disinfection, hydrophore, cartridge filters and hot water calorifiers. Naturally all equipment can also be supplied as separate items (not skid built).

You know how many people you have on board and how many cabins are located on the decks, we know how much water and what pressure you need to supply drinking water and hot water on all tap points. Water that is suitable for consumption. If requested we can even integrate the required disinfection technology into the skid. Another reason why Hatেনboer-Water is regarded as a full service partner.

Calorifiers

For the provision of hot water on board, the fresh water module can be equipped with a calorifier. The capacity of the calorifier depends on the size of your crew and the type of heating is based on the available source on your vessel or rig (steam, hot water, thermal oil or electricity). You can order vessels with volumes of any size, in stainless steel or copper lined steel execution. The calorifier can be certified by all major classification authorities.

Pumps

Hatenboer-Water supplies a wide range of high quality maritime pumps for all applications on board, such as:

- Hot water circulation
- Sea water intake
- Transfer pumps
- Cooling water
- Waste water
- High pressure water makers
- Fire fighting
- Hydrophore systems

As maritime partner for the complete range of high quality Grundfos pumps, we can supply almost all on board pumps you might require. We welcome you to contact us for any application.



Fully integrated cold water module including disinfection and filtration

Plug and play

The required equipment for your application is fully skid built. The units are engineered into detail (including 3D CAD drawings), preassembled, tested and ready to use. As a consequence, you are assured to save costs and time during installation on board. Every unit meets the high Hatেনboer-Water standards and international classification requirements.



A wide range of pumps available





*Hydrophore pressurisation
skid built*

Hydrophore units

Our hydrophore units provide your water on all decks with the required flow and pressure. The systems can be supplied with:

- normal or self priming hydrophore pumps
- pumps in cast iron, bronze or stainless steel
- pressure vessels, standard or diaphragm, in galvanised steel or stainless steel

Frequency controlled pumps

Next to the hydrophore units comprising pumps and a pressure vessel, you can also contact Hatenboer-Water for the latest frequency controlled pumps: pump sets that immediately react according to the demand. They serve as an energy efficient alternative to the hydrophore system: saving costs and ensuring continuous supply of water under the right pressure on board.

Filters

For the removal of small particles such as rust or organic material, Hatenboer-Water supplies a wide range of filters, such as cartridge filters and active carbon filters. These filters can be included on the hot and cold water modules, filtering out any contamination resulting in odourless and clear water.

*Your system designed
according to the high
Hatenboer-Water
standards, based on more
than a hundred years of
maritime experience.*

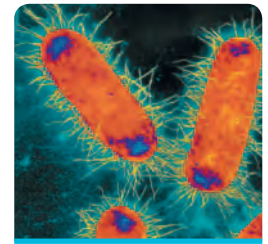


Frequency controlled hydrophore sets





Legionella



E-Coli

Disinfection

You can find a wide range of disinfection technologies at Hatlenboer-Water. Each technology has its own specifications. Please ask one of our advisors to determine what disinfection technology suits your application best. Due to our long experience with water quality we are the perfect partner for assessing the risks on board and determining the appropriate equipment. All equipment can be integrated on the cold and or hot water modules as described previously in this brochure.

Hadex®

Hadex® is a safe, effective and easily applied product, specifically intended for disinfecting drinking water in tanks and piping. Drinking water treated with Hadex® remains fit for consumption.

Three of our most effective and suitable disinfectants are:

- Hadex®
- Ultraviolet (UV) disinfection
- Copper/silver-ionisation

Safe to use

All three disinfectants are perfectly safe to use and suitable to be applied in drinking water. Both Hadex® and copper/silver-ionisation are approved to be used in food grade application by the Dutch Authorities (Ctgb).



Conserving and cleaning

With normal dosing of Hadex® your water will be conserved. It deactivates most microorganisms. However, next to continuous dosing, Hadex® can also be used for cleaning: a so called shock treatment cleans all drinking water piping on board.

Approvals

Hadex® is a liquid disinfectant based on stabilised hypochlorite and because of the balanced consistency, approved by the Dutch authorities. It has been tested and approved by a number of (maritime) authorities. Hadex® is also approved by NIPH and NMA.

Dosing

Hadex® can be dosed manually and automatically by use of the specially designed Hadex® Dosing Unit. Ask for the detailed Hadex® brochure to learn more about this unique certified food grade drinking water disinfectant.





Demitec® Betaline UV



Ultraviolet (UV) disinfection

UV light kills bacteria and viruses without adding anything to the drinking water, making it a very clean disinfection method. The Demitec® UV systems are specially designed for maritime application, based on almost four decennia of experience. The UV units can be mounted horizontally and vertically and are available for all capacities.

The Demitec® UV range also comprises an UV system approved by the strict Norwegian regulations of NIPH. The UV chamber can be equipped with:

- manual or automatic wiping mechanism
- UV monitoring system
- automatic shut-off valve
- temperature control
- maximum flow control



Wall panel copper/silver-ionisation



Copper/silver-ionisation

Whereas Hadex® disinfects instantly the water and is suitable to use as a shock treatment after maintenance or a refit, copper/silver-ionisation provides a gradual, long lasting disinfection. For this reason it forms a unique combination with Hadex® for extensive or very old piping systems. Flow controlled dosing of copper and silver ions create a unique disinfection that can penetrate the biofilm without causing any discomfort regarding smell or taste of the drinking water.

Copper/silver-ionisation has proven to be an effective technology for Legionella control in hospitals and industrial applications. Now it has found its way into the complex and often highly contaminated piping systems of offshore locations and is allowed by NIPH.





Our scope in one view

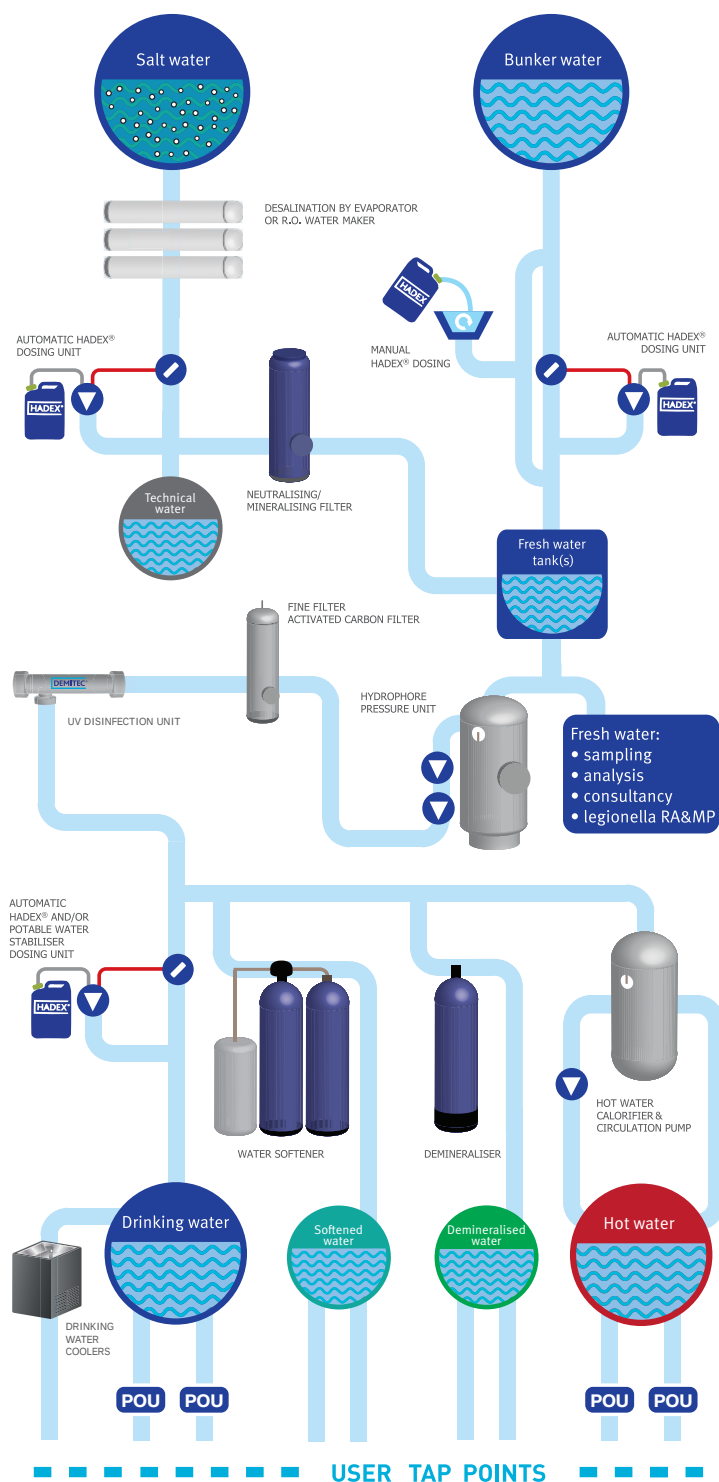
Combining technologies creates additional security

In larger systems or difficult conditions, one disinfectant technology often is not enough. By combining technologies additional security can be created. Hatlenboer-Water can help you in selecting the best available technologies for your vessel or rig, keeping in mind the regulations of the flag state or country you are operating in. Contact us for more information and advice.

*Years of experience and innovation
typify our versatility in the field of
water and technology.*

Short delivery times

Next to offering fully integrated water treatment systems, Hatlenboer-Water stocks large quantities of spare parts and consumables as pumps and filters in both Europe and Singapore.





High quality service department

Operating performance and return on your investment will be maximised when installation, commissioning and maintenance of your drinking water systems are done properly. Hatenboer-Water provides a comprehensive programme providing technical assistance as well as knowledge by means of the Water Quality department.

Worldwide offshore trained assistance

You can count on our elaborate network of qualified and trained service partners. Partners that understand that it is crucial that down time is minimised. You can rely on adequate local first-line support. 24/7. Partners that understand that it is crucial that downtime is minimised. You can rely on adequate local first-line support. Hatenboer-Water agents are located in:

- China
- India
- Gulf Cooperation Council Countries (GCC Countries)
- Malaysia
- South Korea
- Turkey

Our Technical services:

- Commissioning
- Training of your crew
- Technical support
- Checking your logsheets
- Online monitoring
- Preventive / corrective maintenance
- System optimisation
- System surveys
- Midlife updates
- Retrofits
- Cold stacking

Mothball your water maker during cold stacking to prevent high costs at recommissioning.



Service level agreement

Many of our relations encounter the benefits of a customised 'Hatenboer-Water Service Agreement'. Please feel free to contact us for an informal proposition on basis of your needs.





Water Quality (HSE) Consultancy

Our Water Quality department acts as a consultancy and services department. The consultants deliver solutions so you can comply to international laws and to assure that your crew is working in safe conditions. With more than 30 years of experience our Water Quality department comes forward with solutions and services that are always practical and always dedicated.

Water management plan

Water systems can be upgraded to a safe system by implementing our Risk Assessment and Management Plan. It is our goal to increase the safety of your crew and the quality of your potable water system. Every Management Plan is tailor-made after a visit on board by one of our qualified drinking water experts and forms an essential part of any HSE procedure.

Worldwide water tests

Hatenboer-Water provides worldwide sampling, analysis, quality reports and on board audits to assess the chemical, microbiological and physical condition of your water and therefore the health of your crew.

Potable Water Course

Improve the knowledge of your crew and office staff about water, water treatment and water management with our professional 2-day Potable Water Course. These trainings are held several times a year in the Netherlands, Singapore or at your location. Topics like water maker technology, disinfection, sampling and analyses and water management plan are discussed.



Our Potable Water Course is acknowledged by NIPH. Operators working in Norwegian waters are obliged to have followed a NIPH recognised potable water training.



Worldwide water tests

Our Water Quality services:

- Sampling
- 2-day Potable Water Courses
- Risk assessments
- Water management plans
- Water analyses
- Potable water manuals
- Audits existing plans
- Troubleshooting

Our Potable Water Course is rated 'very good' by our participants.

A few of our participant's comments:

- Trainers and instructions are very helpful and practical minded!
(USG Energy)
- The course helps to give a better understanding of the many aspects of water.
(Chevron)
- The Potable Water Course provides all required information.
(Dana Petroleum)



Hatenboer-Water

Your partner in maritime water treatment & services

Your benefits choosing Hatenboer-Water

- Safe water on board, meaning a safe working environment for your crew
- Good water from production to consumption
- Strong focus on service, quality, innovations and improvement
- Minimal downtime
- Easy access to spare parts and consumables
- Worldwide services
- Local, skilled, support

Hatenboer-Water in a nutshell

- More than 100 experienced professionals
- Based in the Netherlands and Singapore
- All disciplines and facilities under one roof
- In-house engineering, 3D CAD design
- Continuous R&D
- Fully equipped workshop

**GREEN
THINKING**

Solutions by Hatenboer-Water are designed with sustainability and environment in mind. Please contact us for more details on energy saving, low life cycle costs and high sustainability of our solutions.

With proven track record of more than two thousand maritime water treatment units Hatenboer-Water 'takes care of your needs'.



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