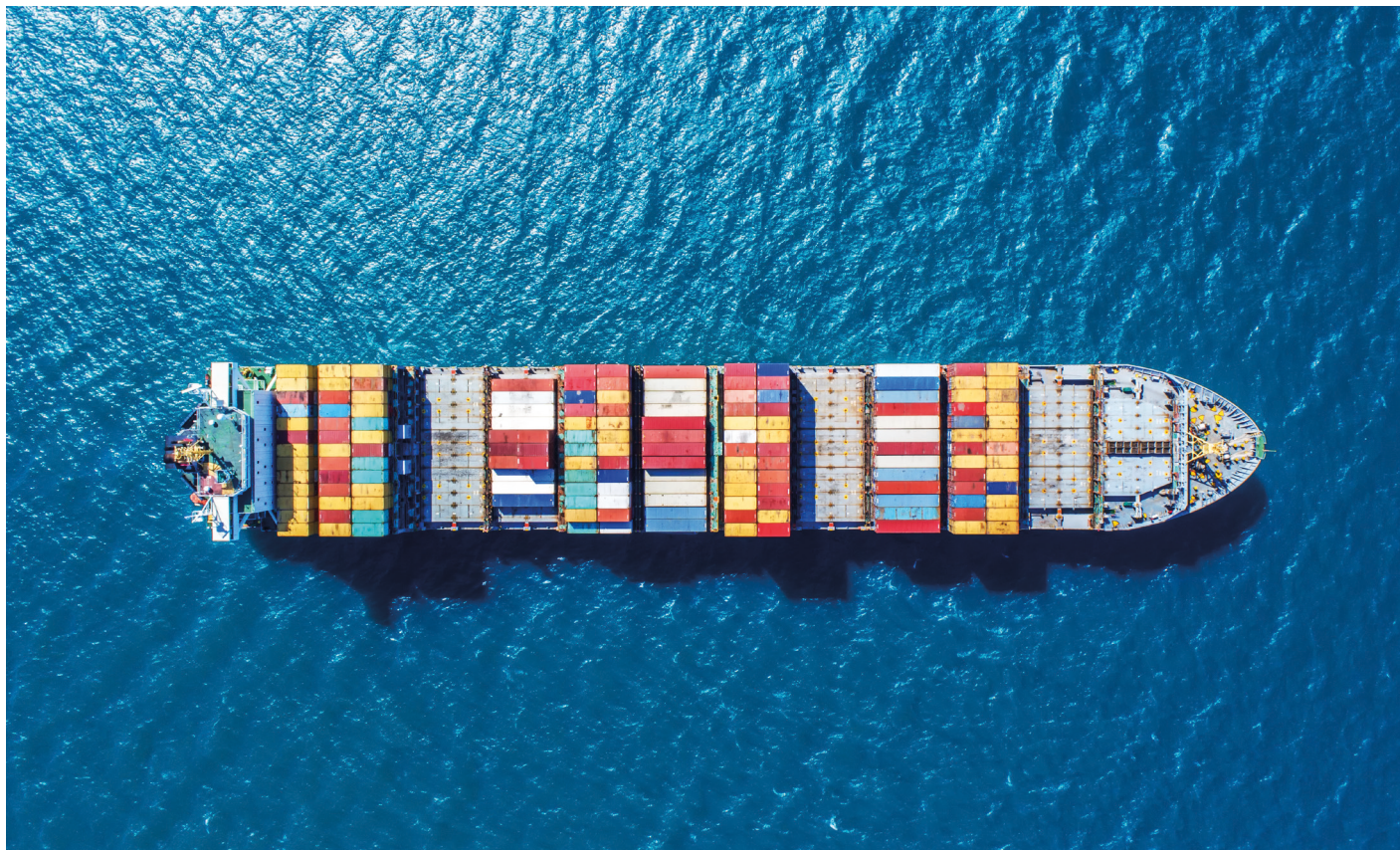


PROVIDE CLARITY



Solutions for maritime water filtration



Maximum system protection. Minimal operating costs.

Filtration specialist: BOLL & KIRCH

As an expert on filtration processes in the maritime sector, BOLL & KIRCH sets standards with its leading-edge, application-optimised product.

We respond to the complex conditions in this sector with ongoing and application-oriented engineering efforts. Each solution is based on our many years of experience with maritime applications and can be perfectly adapted to your specific application by customising the materials and coatings. With the development of the new aquaBoll® automatic filter, we focus on optimised functionality and a greatly increased range of variants to meet your specific requirements.

As a result, your overall system efficiency is guaranteed to increase at all times, thanks to our high levels of quality, improved cleaning results and effective system protection.





Ballast water
management systems



Fresh water
generation systems



Exhaust gas
cleaning systems



LNG regasification
systems



Offshore water
injection systems



Disinfection systems



Ensures clarity: aquaBoll® for your specific application

As the technology leader in industrial filtration, BOLL & KIRCH have once again proven their comprehensive application expertise in water filtration processes with the introduction of the

aquaBoll®. This innovative automatic filter is based on a specialised concept. The multi-part housing design and adaptive filter elements allow for increased performance while simultaneously delivering



unmatched efficiency. This, in turn, allows for considerable flow rates to be achieved, despite the compact design. Key elements are optimised for accessibility, thereby reducing commissioning

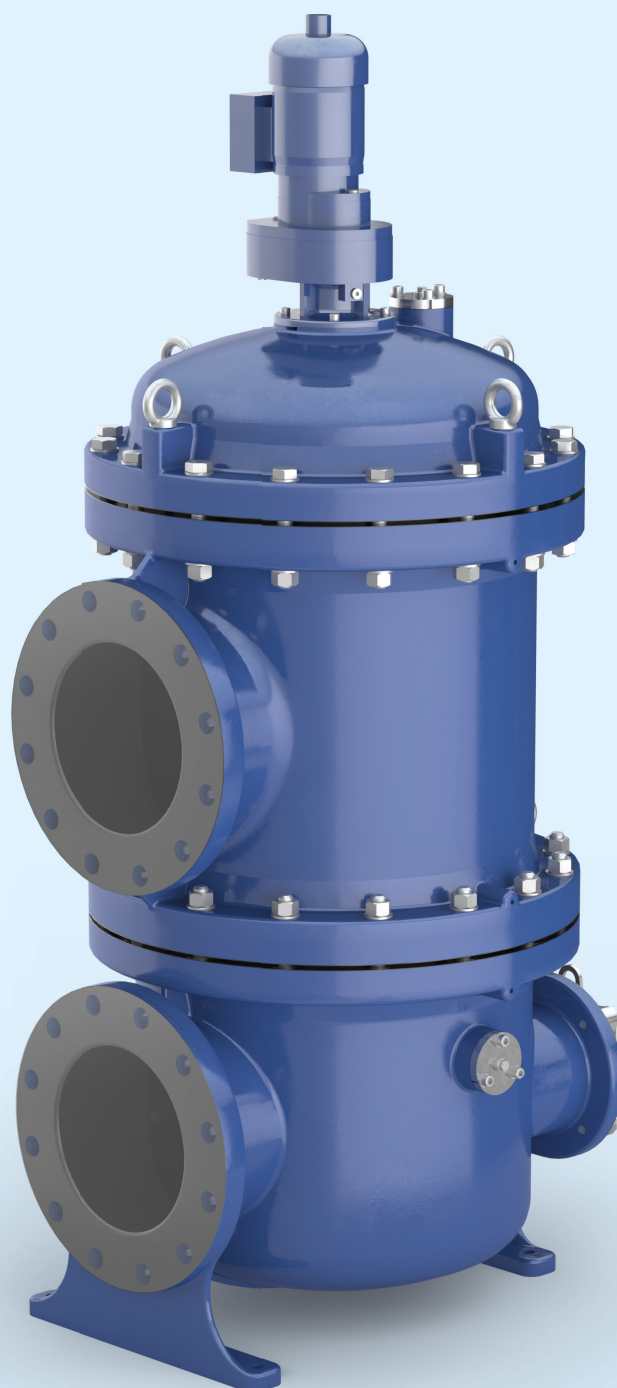
efforts and maintenance costs. Standardised, high-quality components ensure maximum reliability and significantly improve overall system efficiency of your application.

- ✓ Adaptive filter elements
- ✓ Multi-part housing design
- ✓ Flexible flange orientation
- ✓ High flow rates at smallest footprint

Filter fineness
10µm - 5mm

Nominal diameter
connection flanges
DN 50 - DN 500

Housing diameter
273mm - 750mm

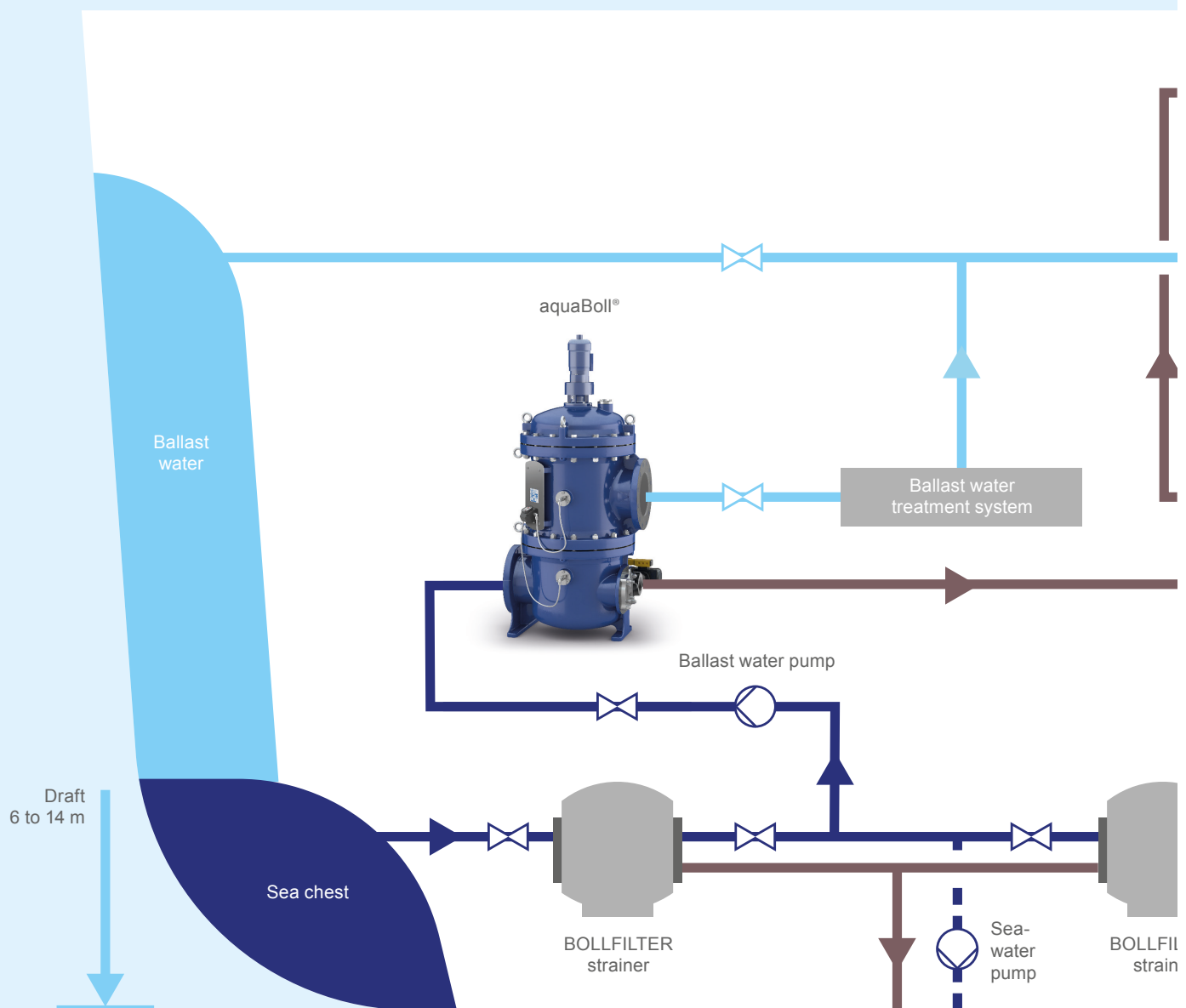




Ballast water management systems

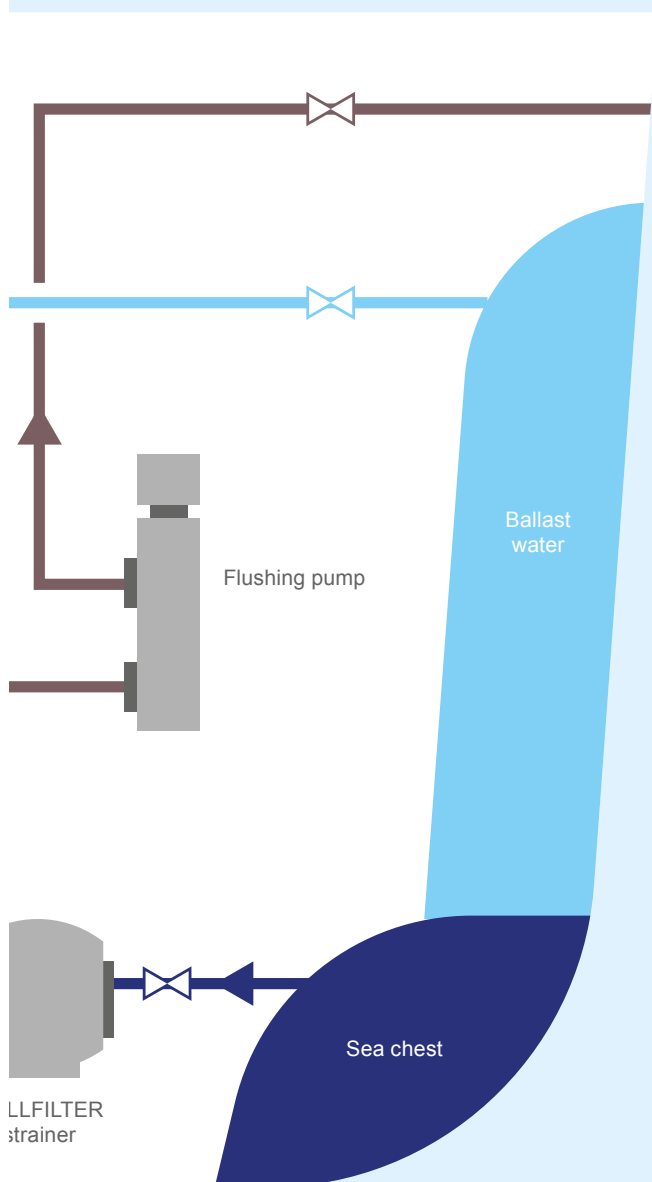
The fully automated filtration solutions by BOLL & KIRCH are one of the key elements in ballast water management systems used on a wide range of open sea vessels. Using the aquaBoll® as a

pre-filter ensures trouble-free functioning of these sensitive, multi-stage systems. This filter removes organic particles and sediments from ballast water, down to a particle size of 20 µm, with great



efficiency. Thanks to its innovative design and optimised functionality, the aquaBoll® guarantees the necessary filtration quality even at the highest of flow rates. The compact automatic filters are

embedded in the system, between the coarse filters and the chemical or physical disinfection unit.



Our expertise:

Fine filtration down to 20 µm

Optimum customisation options for retrofits

SunRui

SunRui's BalClor® ballast water treatment systems for pre-filtering seawater rely on automatic filters

by BOLL & KIRCH. More than 40 years of application experience are a deciding factor, as are our guaranteed filtration and component quality as well as our service team that is available around the globe. SunRui have demonstrated their trust in us as the filtration specialists through numerous completed, ongoing and scheduled projects.





Fresh water generation systems

Fresh water for a range of applications and systems is essential on open sea vessels. Seawater, for instance, is desalinated in a reverse osmosis system (RO) and, in subsequent steps, processed

for its respective use, e.g. for fresh water generation systems on cruise ships. Optimum functioning of these desalination systems is ensured via various pre-filters. Here, the aquaBoll®

Our expertise

Compact and lightweight design

Optimum maintenance conditions

Case Marine

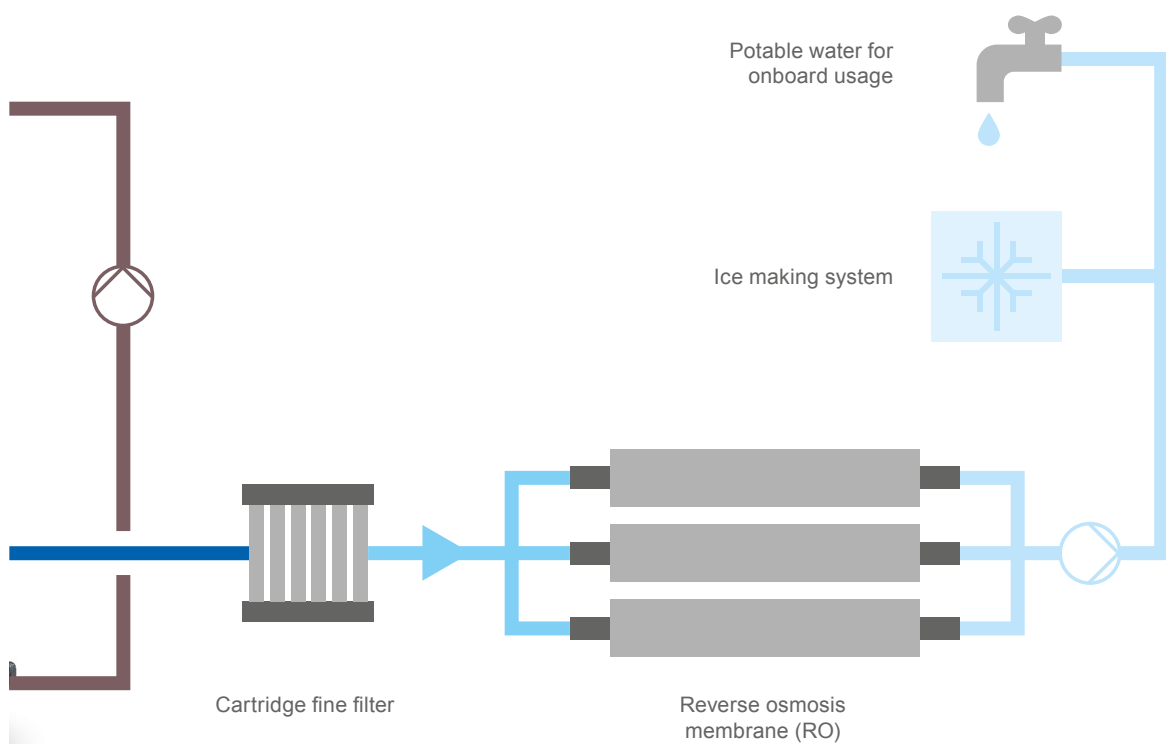
John Case, CEO of Case Marine Inc, places his trust in the key advantages of our automatic filters to protect fresh water generation systems. Compared to the particle filters typically in use, the smaller installation footprint and lower weight – which is reduced by up to 80% – play an important role. The fully automated backflushing technology ensures continuous system protection. The mechanical filtration method enables precise filtration quality and minimal maintenance efforts. In addition, the incredibly short time it takes for a basic cleaning in cases of heavy soiling, without needing to remove system components, is also of crucial importance to Case Marine.



aquaBoll®

ensures that both coarse and fine organic and inorganic particles are reliably removed. Due to the ongoing need for fresh water to use on board, a consistently high level of filtration quality is of

utmost priority. This level of quality is provided by the aquaBoll® at all times, thanks to its fully automated functionality.

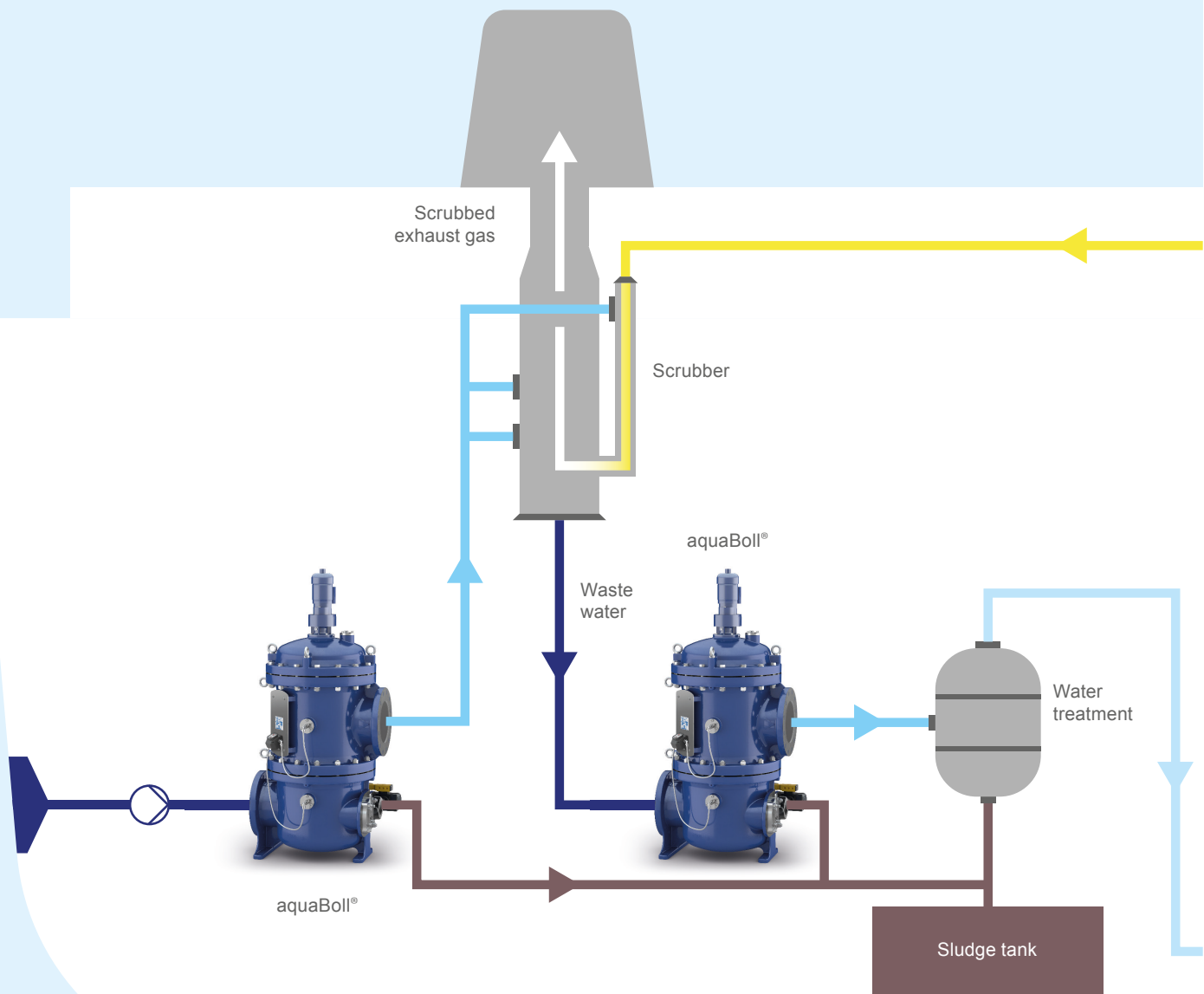




Exhaust gas cleaning systems

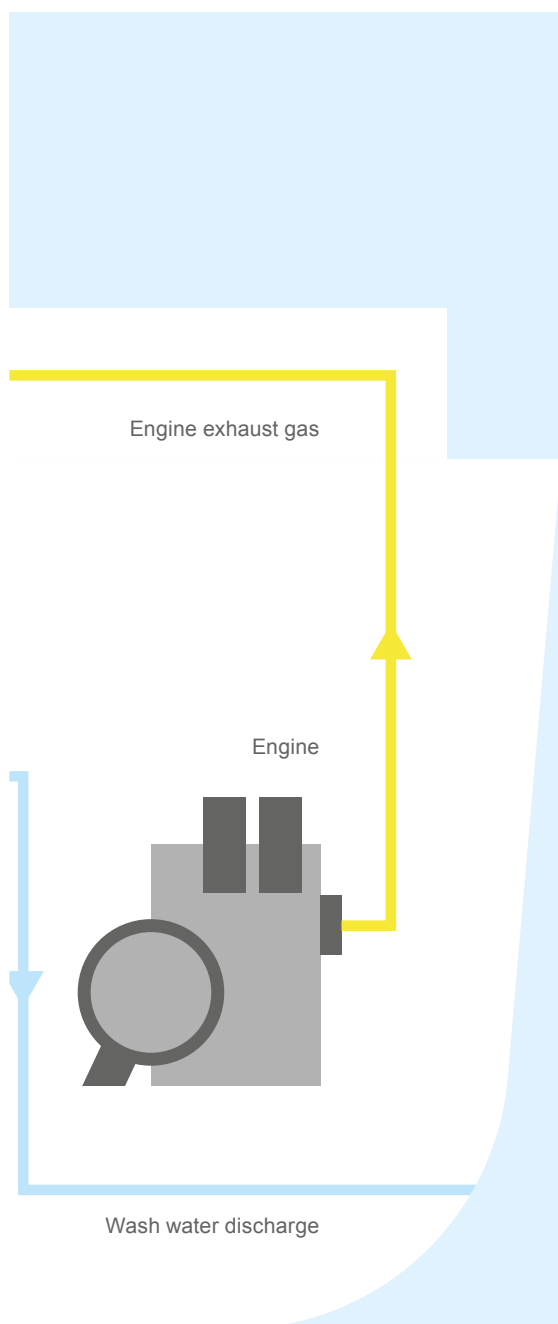
In order to comply with emission standards, the sulphur dioxide content of exhaust gases in ship propulsion systems is, by default, reduced using a wet scrubber. Saline water is sprayed into the gas

scrubber by means of nozzles and, entering into a chemical reaction with the sulphur dioxide contained in the gas, thereby neutralising it. This saline water is supplied directly from the ocean, or in the case of



fresh water, is generated by adding sodium hydroxide (i.e. caustic soda). In both cases, permanent nozzle protection is required to continue the exhaust gas cleaning process.

To this end, aquaBoll® efficiently removes organic and inorganic particles from the input medium while also ensuring fully automated filtration of the waste water generated during this process.

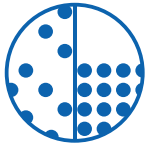


Our expertise

Best possible nozzle protection for scrubbers

Guaranteed protection for water treatment systems

Automatic filters by BOLL & KIRCH are installed in a wide range of exhaust gas cleaning systems made by various manufacturers in order to maintain complex systems and ensure proper functioning thereof.



LNG regasification systems

Liquefying and regasifying natural gas is a demanding and comprehensive application field in every respect. By means of the aquaBoll®, seawater is filtered with great efficiency to protect

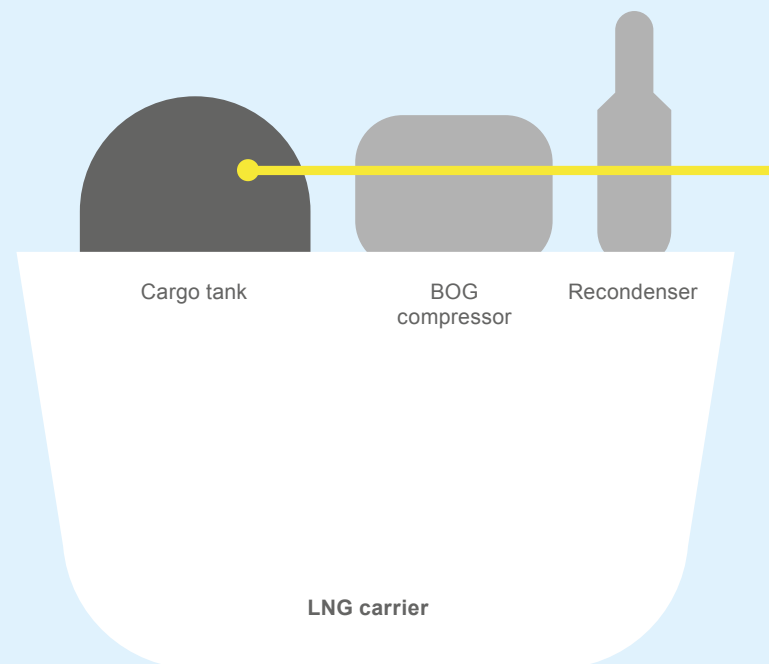
high-performance heat exchangers and the various nozzles used during cooling processes. The removal of organic particles and sediments to a consistently high level of quality is of

Our expertise

Most adaptable, compact and light-weight design

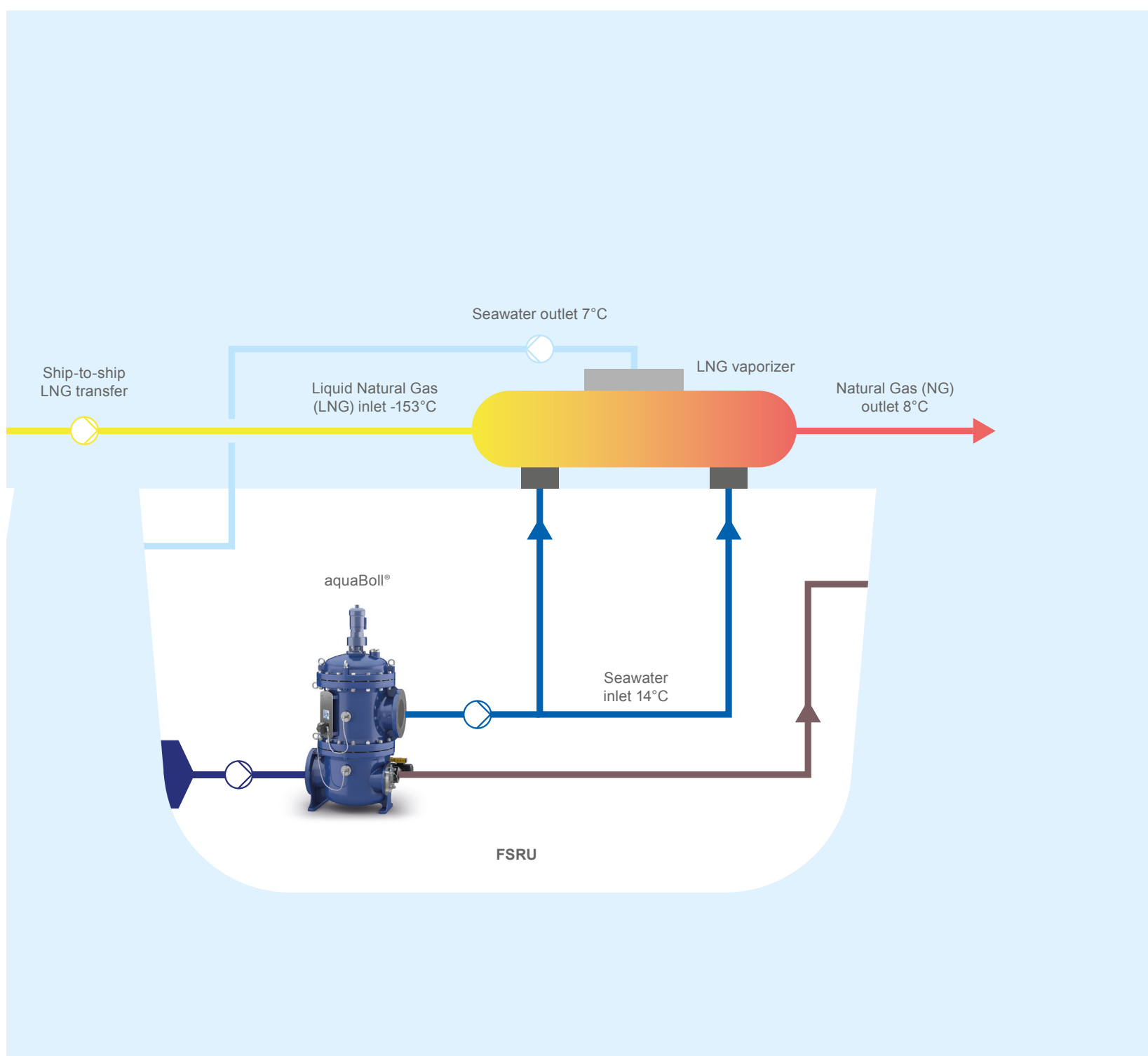
To protect the heat exchangers, automatic filters by BOLL & KIRCH are used to efficiently remove impurities in the seawater up to a particle size of 500 µm. The following features of our filters matter the most:

- Backflushing stage with low pressure drop
- Easy maintenance tasks
- High-quality components



utmost priority, and the aquaBoll® makes sure of it. The aquaBoll® effortlessly achieves the flow rates required for extremely demanding thermal applications. In contrast to alternative filtration

concepts, it stands out with its minimal space requirement, low weight and fully automated self-cleaning action.

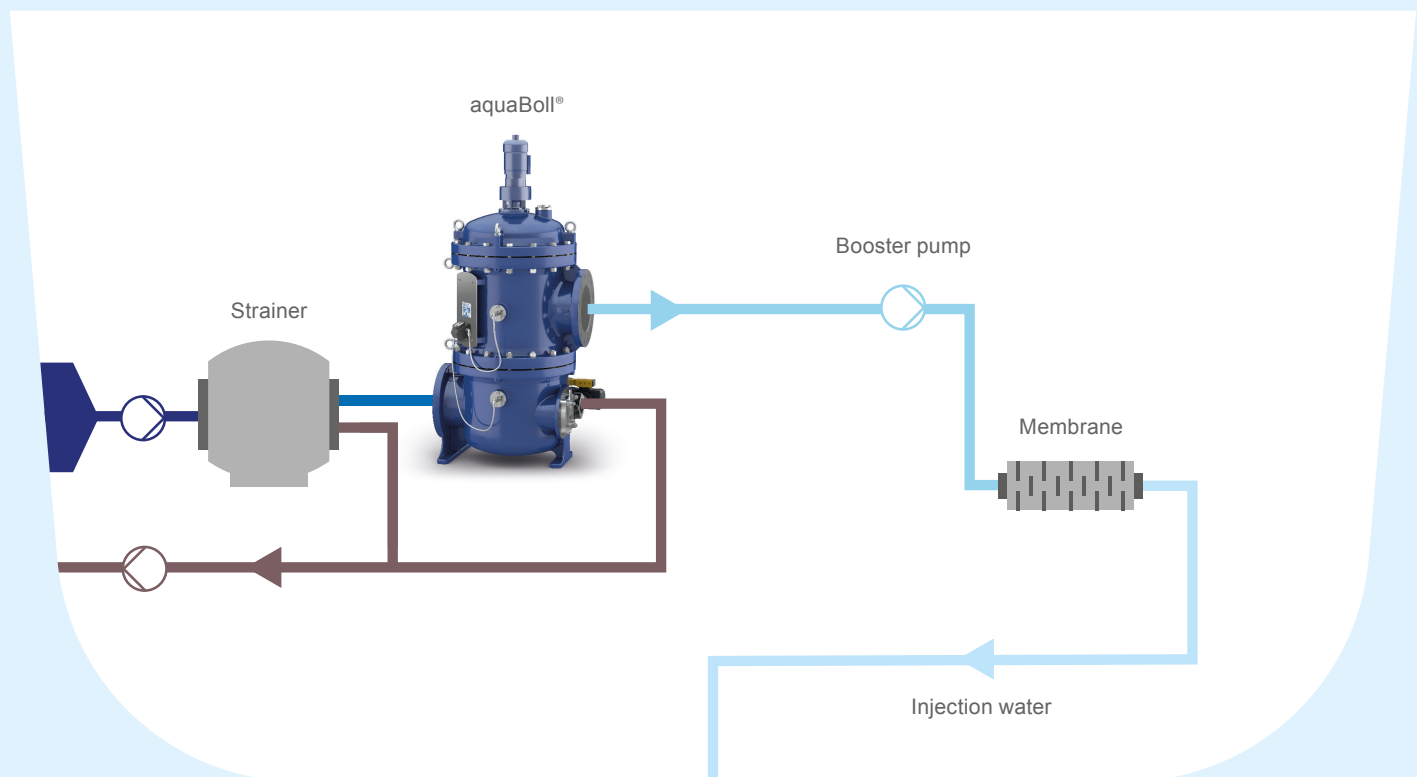




Offshore water injection systems

Offshore natural gas and oil production systems use seawater during the production process to compensate for pressure differences in the reservoir, and to increase system efficiency. Before this water is injected

into the oil and gas reservoir by means of high-pressure pumps, the aquaBoll® removes organic particles and sediments fully automatically, and ensures that the entire system keeps running continuously.



Our expertise

Robustness, and material selection appropriate to the application

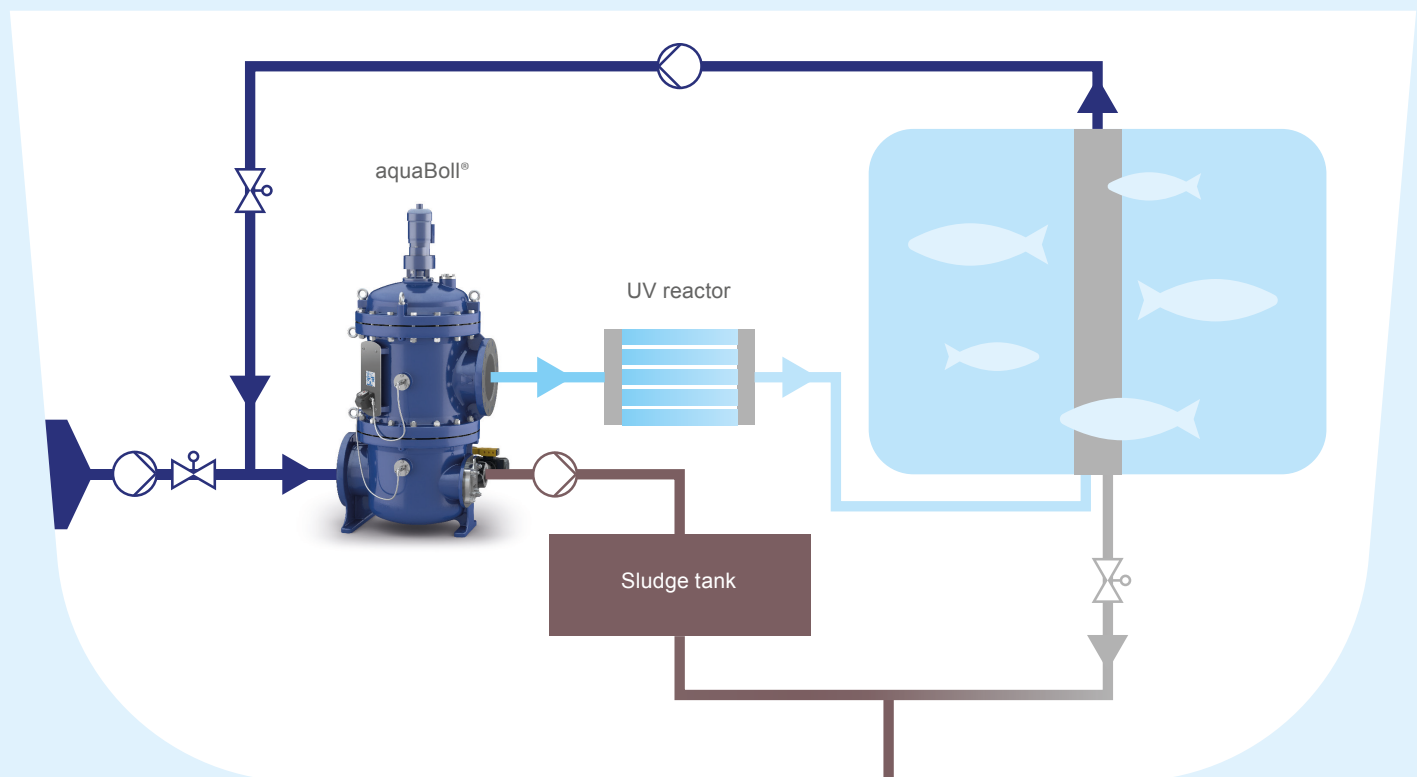


Disinfection systems



On live fish transport vessels, the water in the fish tanks needs to be kept free of external contamination as well as contamination arising from within the cycle on a permanent basis. This is a task the

aquaBoll® reliably tackles by means of a downstream disinfection unit. This automatic and continuously running pre-filtration process enables optimal functioning of the disinfection unit.



Our expertise

Fine filtration down to 20 µm

Custom connection options

Make use of our expertise in complex filtration processes and increase the efficiency of your specific application process! Our self-cleaning automatic filters ensure efficient system protection and a significant reduction in running costs. In addition to the implementation of application-optimised filtration solutions, customers rely on the flexibility of our processes and appreciate our individual support and guaranteed worldwide service.

Reasons for choosing BOLL & KIRCH

- Comprehensive application expertise in the maritime area
- Fastest product availability
- Wide range of retrofitting and modification options
- Highest level of technological reliability
- Minimal operating costs



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