FILTERSAFE BOLSTERS BWMS THROUGH ADDITIONAL FILTER INSTALLATION

Filtersafe Case Study

BACKGROUND

Filtersafe is constantly engaging with the maritime industry to better understand pain points and perspectives on ballast water management implementation. As a result, our team plays an active role in solving key challenges. For example by researching and publishing informative, scientific whitepapers or, more directly, when shipowners turn to us for consultation on their ballast water management systems' (BWMS) filter performance.

Filtersafe has seen increasing reports from shipowners and operators experiencing problems with their BWMS in sediment-rich waters. The root cause is often a low-quality filter that's not fit for the vessel's operating profile or route.

To address this, owners and operators are opting to install a high-quality filter upstream of a ship's existing BWMS filter. This protects the existing filter and management system and increases the vessel's ability to function in challenging conditions. As a result, regulatory compliance is assured while disruption to operations is eliminated.

INDUSTRY

Maritime

APPLICATION

Pre-Filtration for Disinfection System

FILTERSAFE

- 20+ years filtration experience
- 3,500+ installations
- 10 micros upwards filtration
- 50-6,870 m^3/h flow rates
- Modular configuration

Replacing the existing filter entirely is not an option as it would void the BWMS's type approval and re-certification would be required. Under type approval regulations, the component of a certified BWMS is not allowed to be replaced by a different technology serving the same function.

Adding a high-quality filter before the BWMS is much cheaper than replacing the entire BWMS too. However, it is sometimes not possible due to space or logistical constraints. This approach is also no substitute for fitting an appropriate BWMS with a high-performance filter from the outset, which remains the most efficient option.

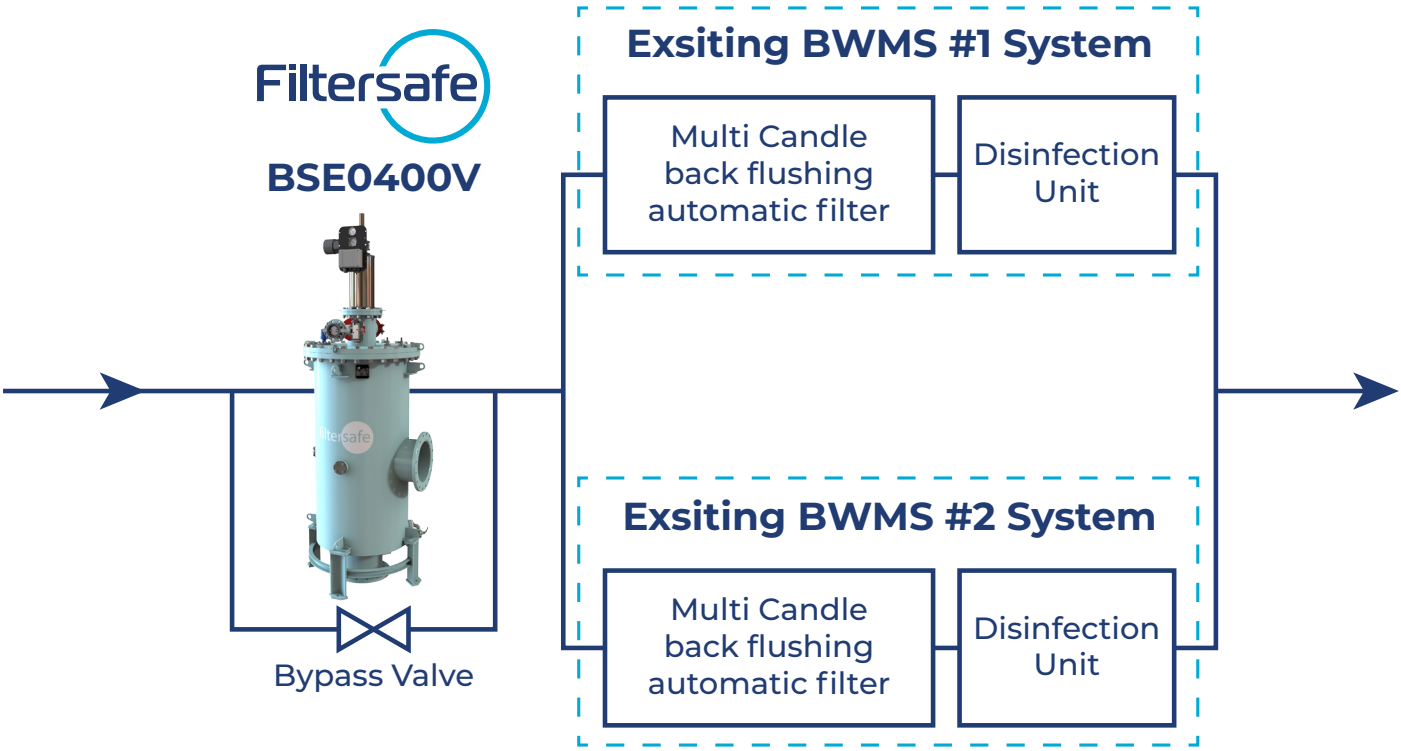
marine@filtersafe.net

FILTERSAFE BOLSTERS BWMS THROUGH ADDITIONAL FILTER INSTALLATION

Filtersafe Case Study

CHALLENGE

The world's second largest container vessel operator came to **Filtersafe** with an underperforming BWMS onboard one of its container ships; the installed filter (a multi candles and back flushing automatic filter) was constantly clogging in sediment-rich waters, which the vessel regularly encountered. The sediment build-up in the installed filter regularly required manual cleaning, which was causing repeated operational delays, consuming crew work time, and was damaging both the filter and BWMS. These challenges also meant that the vessel was not reliably treating invasive aquatic species.



As a result, the Chief Engineer onboard the Danish company's vessel decided they needed to have a higher-quality filter installed as a pre-filtration system to protect the BWMS. **Filtersafe**'s BSE0400 (BS-400), Bureau Veritas type-approved filter, was a clear choice. **Filtersafe**'s experienced team made light work of this engineering challenge. Meanwhile, **Filtersafe**'s scalable self-cleaning filter technology and high-quality filter mesh made it the obvious choice for the leading shipowner and operator.

At the heart of every **Filtersafe** filter lies the advanced automated filter cleaning sequence, **EVER**CLEAR™, which uses two pioneering technologies. **smart**weave™ is a unique, exclusive weave-wire mesh screen specifically designed for ballast water filters, offering unparalleled zooplankton, phytoplankton and sediment removal rates. Meanwhile, nozzlex™ is a class-leading patented nozzle design that efficiently and effectively removes 100% of matter from the filter screen without halting system operation. By utilizing its full proximity to the screen, with minimal force applied, regardless of system pressure, it effectively cleans the screen with zero risk of wear.

marine@filtersafe.net

FILTERSAFE BOLSTERS BWMS THROUGH ADDITIONAL FILTER INSTALLATION

Filtersafe Case Study

FILTERSAFE SOLUTION

The first step that **Filtersafe** took to overcome the ballast water management challenge was to conceptualise a solution and then test if it would work in practice. The objective was to test if its BSE0400 (BS-400) filter could be installed upstream of the current filtration system for both of the vessel's BWMSs, which could not handle the average dirt load at the vessel destinations. This was necessary as overall hydraulic, system pressure, and ballast pump constraints need to be taken into consideration. Having successfully validated the solution, the team moved onto installation and operational tests.

The filter was installed onboard the vessel and operational tests went smoothly. The **Filtersafe** filter was installed with a bypass that was left open and slowly closed during the testing to see how the filter and system performed. After the testing was completed, the bypass stayed closed as part of the completion of the project. The chief engineer requested a treatment capacity of 1,000 m^3/hr. During the operational test, the system ran for 2.5 hours at approximately 950 m^3/hr with no alarms. At 950 m^3/hr, **Filtersafe**'s filter would initiate flushing roughly every one minute. Meanwhile, the existing filter entered continuous flushing at 500 m^3/hr.

Both the chief engineer and his second in command noted that thanks to the BSE0400 filter the BWMS operation was now 'extremely improved'. Both were trained in the filter's operation, maintenance and service as part of **Filtersafe**'s robust support and training infrastructure.

"Thanks to the BSE0400 serving as the filtration unit, the operation of the BWT system has now been extremely improved, comparing to the use of the Original filtration system."

*Reach out to the **Filtersafe** team to discuss what system and filter you need to avoid costly clogging.*

marine@filtersafe.net