



## Smart planning and design of PureBallast 3 retrofits

Höegh Autoliners, Norway

Case story



Image: Lucien Van Horn

Based in Norway, Höegh Autoliners specializes in the ocean transport of cars, trucks, trailers and breakbulk cargo. As a ship owner that strives to stay ahead of rules and requirements – and to be a forerunner in protecting the marine environment – the company was an early mover in ballast water treatment.

Starting in 2014, Höegh Autoliners began installing Alfa Laval PureBallast on newbuilds, well ahead of the IMO implementation date. Eight vessels were equipped with second-generation PureBallast systems, which today are being updated to provide U.S. Coast Guard (USCG) as well as IMO type approval.

In addition, the company has begun the task of equipping its existing fleet. Under a comprehensive fleet agreement, Höegh Autoliners will retrofit PureBallast 3 Compact Flex on at least 14 vessels – a process that is well underway.

### A choice of system and supplier

Höegh Autoliners' original choice of PureBallast was based on several factors, including an insistence on UV treatment technology. "Smaller size and easier installation are typical for UV systems," says Jan Rune Mørken, Head of Technical Development and Newbuilding. "It had to be a UV system, and Alfa Laval was the leading company in UV technology."

Technology, however, was only one reason for confidence in Alfa Laval. Another was Alfa Laval's 100-year presence in the marine industry – assurance that service and support will remain in easy reach. "We're in a global business, which makes presence and know-how around the world very important," Mørken says. "Having a supplier like Alfa Laval is crucial for long-term operation."

### An ideal fit for retrofit needs

When it came to the current wave of retrofits, Mørken and his team were keen to continue working with PureBallast – but were wary of the challenges a retrofit can present. “We had investigated the market and had already started working with our newbuildings, so for us it was an easy choice to go back to Alfa Laval,” he relates. “Having said that, the focus is on the technical functionality and the practical installation of the new equipment. Getting it on board, designing it into the existing ballast piping system and so on. It’s a challenging task.”

Here the latest generation of PureBallast – and PureBallast 3 Compact Flex in particular – has made a tremendous difference. “PureBallast 3 Compact Flex is a very good solution for retrofit jobs,” Mørken explains. “The principle is the same, but as the name says, it’s a more compact version that doesn’t need as much space. You can fit it more easily into the vessel.”

### Simpler engineering with 3D scans

Delivered as loose components, PureBallast 3 Compact Flex offers a great deal of flexibility. But the retrofit design and engineering have also been simplified by 3D scanning. The engine room and existing piping of each vessel have been scanned by Alfa Laval partner Goltens, who has performed the engineering and finalized the design in close cooperation with Alfa Laval and Höegh Autoliners.

“The 3D scanning is helping us a lot. Without it, we would have to relocate equipment and tie up the piping by relying on shipyard drawings, which aren’t that accurate,” Mørken explains. “Now we can prepare in a completely different way. We can pre-make pipes

and other accessories an early stage and bring them on board ready. That’s of course a time and money savings.”

### Confident with Alfa Laval commissioning

To date, three PureBallast 3 Compact Flex systems have been retrofitted at sea, with the vessels in service. The installations have been performed by a specially trained team of Höegh Autoliners personnel, with an Alfa Laval service engineer coming on board to commission the systems prior to class approval. On other vessels, the retrofits will take place at a shipyard during regular dry docking.

Although the retrofits at sea have been an exception, the commissioning by an Alfa Laval engineer has not. The process, which normally takes around one day, provides valuable peace of mind for Mørken and his team. “I think most owners would want commissioning by an Alfa Laval service engineer,” he says. “It’s partly about the guarantee, but you also want to know that the installation on board is approved by the maker. It’s important.”

### Integration and training for smooth operations

With the first retrofits now in operation, Mørken says Höegh Autoliners is satisfied not only with the installations, but also with their integration. Though the vessel automation systems may be 10 years older or more, crews are able to steer the ballast water functions exactly as they would expect, starting

and stopping the ballast water treatment system from the deck office and other control stations on board.

To further ensure smooth and compliant operations, the company has made Alfa Laval training a part of its fleet agreement. An initial onboard training is provided by the commissioning engineer, while subsequent crews are instructed through PureBallast 3 Computer-Based Training (CBT). “We can do the computer-based training from our office in Manila, so that our crews are ready and certified for PureBallast operation,” says Mørken. “When they go on board, they’ll have been through the course and have the knowledge necessary.”

### Potential in connectivity

In the years to come, Höegh Autoliners may be doing even more digital work with ballast water treatment. Currently, the company is considering the addition of connectivity to its PureBallast 3 Compact systems.

“I think this is the future for a lot of functions on the ship, that we’ll connect to the vessel from shore, do our readings and take out the information we need,” Mørken reflects. “Alfa Laval, with their organization and knowledge, could also follow along, and that’s probably the most important part of it. It’s better to have advice from those who really know the system, so this is an idea we absolutely like – and we can see that system stability is better cared for by doing it.”

*“We were looking for a system and a supplier that would be with us for the lifetime of the vessel. The final solution has turned out very well.”*

Jan Rune Mørken, Head of Technical Development and Newbuilding Höegh Autoliners

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### How to contact Alfa Laval

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