

CASE STUDY: Retrofit of ejectors for Ballast water treatment systems



RE-EQUIPPING VESSELS OF THE ROYAL WAGENBORG FLEET WITH EJECTORS FOR BWTS.

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IRON Pump supplies a complete range of both SLIMPOWER and B-type ejectors. This has enabled us to select a replacement ejector that fits each individual vessel design, and which requires the least changes to the existing pipework.

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EXECUTIVE SUMMARY

Introducing the required UV-based BWTS has forced logistics conglomerate Royal Wagenborg to revise the system set-up. By replacing the existing ejectors with the Ellehammer SLIMPOWER ejectors, the retrofit is made more simple.

ABOUT WAGENBORG

Royal Wagenborg is an international maritime logistics conglomerate founded in 1898. Under Dutch flag, Wagenborg administrates a fleet of 180+ multipurpose vessels with a size ranging from 1.700 to 23.000 tons and offer a variety of maritime services including shipping, offshore services, towage services, maritime management services, warehousing and transshipment, crane rental and special and heavy transport.



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A part of IRON Pump A/S

THE CHALLENGE

Like all shipowners, Wagenborg must adhere to the new laws regarding ballast water management. The Ballast Water Management Convention stipulates that all ships are required to disinfect their ballast water on board before discharging it overboard. A popular way to clean ballast water is by using UV-based ballast water treatment systems.

Introducing a UV-based BWTS has an impact on the performance of an existing ballast ejector as any additional pressure drops to the existing system may result in the ejector operating at reduced capacity or no longer working at all.

Another challenge is that for UV-based BWTS, a minimum flow is required to maintain the system's functionality. The existing ballast ejector does not necessarily meet the minimum flow requirement. Therefore, either the ejector or parts hereof must be replaced and in some cases, the driving pump of the ejector, must to be replaced as well.



THE SOLUTION

A technical dialogue with Wagenborg's technicians was commenced in close cooperation with our representative company A. de Jong.

After a careful evaluation it was determined that the existing ejectors did not meet the revised system requirements in regards to minimum flow and increased pressure drop.

The solution was to replace the ejectors not complying to the new requirements caused by the new BWTS. In this case, replacement of the driving pumps was not necessary.



THE RESULT

Wagenborg has chosen IRON Pump to supply ejectors for new installations of BWTS for 57 vessels. Retrofit of these ejectors will take place over the next three years. The replacement of ejectors is simple and easy due to the SLIMPOWER ejectors' flanged connections complying to DIN, JIS and ANSI standards.

