



HURTIGRUTEN ASA continue to invest in proven water treatment technology.



“ After 110 000 hours of operation our recent service and inspection has shown no corrosion, we are very satisfied with the performance of the EnwaMatic® units”. Pål Åsheim, Chief Engineer, Hurtigruten ASA.

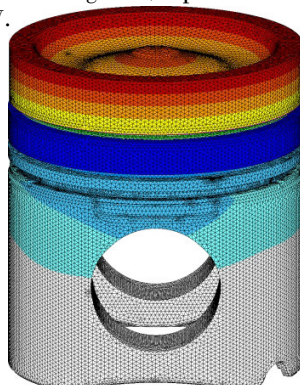
Hurtigruten ASA have operated the patented EnwaMatic® Maritime technology for over 12 years across their fleet. During this time their HVAC systems have been protected against corrosion, scaling and general fouling by a unique combination of side stream filtration and water treatment.

EnwaMatic® Maritime (EMM) removes microbubbles and particulates to < 5 microns (regardless of particle density or buoyancy), and the resultant turbidity and suspended solid load in treated water is equivalent to that for potable water. This means reduced impingement and excessive wear of all internal components. Their longevity is increased and the long term service and maintenance costs are reduced.

Polishing the water to this level ensures the energy transfer medium is kept in its optimal state. This means, that it is inherent in the EMM design to provide efficiencies where there is the potential to achieve them. Contaminated systems can be cleaned and pulled back to their design efficiencies, which has a direct impact on vessel operating costs. In documented case studies this has yielded significant reductions in energy consumption. Crystal Harmony, Crystal Cruises, realised a 25% reduction in cooling load, represented by a reduction from 8MW to 6MW.

Piston Head thermal stress analysis by Technomot Limited.

Engine optimisation is essential for achieving reduced fuel consumption and engine cooling water plays a vital role in ensuring design efficiencies can be realised.



Piston heads are constantly cooled and the dissipated heat is ejected from the cooling system. Heat stress impacts greatly on piston head lifespan and if the energy carrier is heavily laden with contaminants it will be insulating and less effective at transferring heat away. This leads to reduced performance and impacts negatively on design efficiency.

Filtration and removal of microbubbles are not enough on their own, they must be combined with a reliable and reproducible chemistry to stop the processes of corrosion and scaling generating by-products in solution and suspension. The conventional approach has been to add toxic, aggressive chemicals to protect against corrosion and scaling. These additives need to be dosed at their effective dose and are prone to dilution through water exchange, or overdosing. The reliance of these treatments on human intervention often leads to poor performance.

The EMM establishes a 'self-regulating', chemical equilibrium which is more reliable than conventional dosing and requires less maintenance. It is more complimentary to Clean Ship Design, as it is a Green Technology, plus there is no mandatory labelling, no requirement for storage of hazardous chemicals on board and any spillage of the treated water will have zero environmental impact.

Wärtsilä recently approved EMM after an extensive trial, 16 378 hours on the engine cooling water, on board Color Fantasy, Color Line Cruises. Even though there was considerable water exchange inspections showed satisfactory performance. Color Line, like Hurtigruten ASA have continued to invest in EnwaMatic® Maritime for existing vessels and their new builds. Visit www.enwa.co.uk or www.enwa.com for more details.