



## **MARELCO**<sup>™</sup> EXCHANGER

An EMCS Industries Ltd. Product

The MARELCO<sup>™</sup> Exchanger is your solution to the marine biofouling of your box cooler.

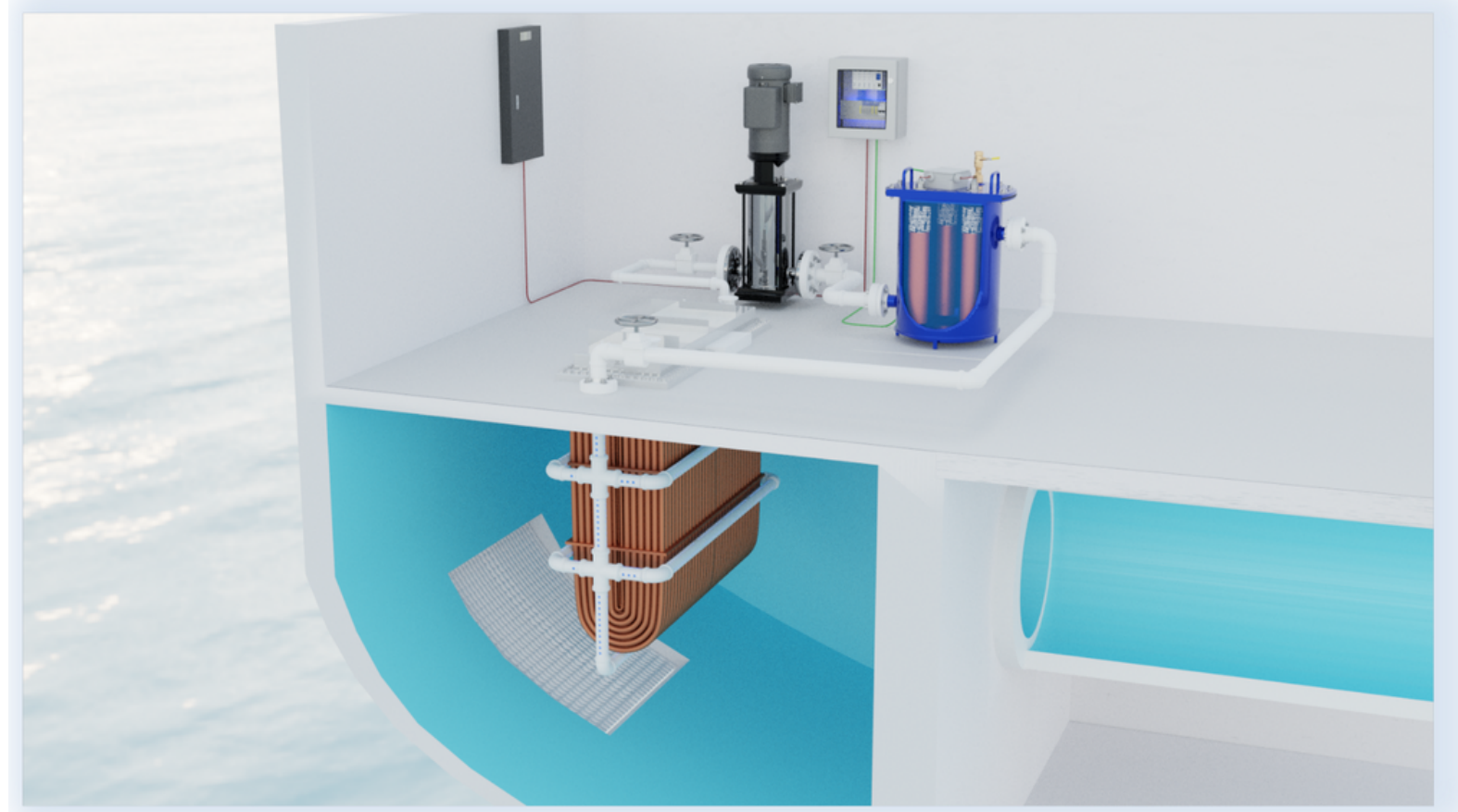
As the vessel water cooling system the box cooler is equipped with inlet and outlet grids, and forms part of the internal piping system of a vessel. With seawater as part of the cooling system, the box cooler is subject to marine biofouling, which can severely compromise its capability. Traditionally box coolers are protected by placing electrolytic copper anodes horizontally in the sea chest, allowing the ions from the copper anodes to then disperse into the sea chest to reach the tiny crevices between the elements to prevent fouling.

EMCS Industries is excited to introduce our innovative new design, the MARELCO<sup>™</sup> Exchanger! Using anodes on the inboard side of the vessel located in our above-deck tank- the Liberator. The Liberator tank pulls seawater from the sea chest into the tank. The anodes in the tank treat the sea chest water in the internal piping system with copper and aluminum ions, acting like anodes in the sea chest, and delivers the treated water back through a custom-designed cage of perforated CPVC pipe to provide a focused dose of copper ions right into the crevices of the box cooler where it is required. The Liberator is designed to protect sea chests, scrubber systems, box coolers and piping systems. It can provide fleet standardization regarding anode size and allows you to avoid additional welding, cutting, potential leaks in watertight anode connections, and additional shipyard labour.

This innovative and unique design removes the uncertainty of whether or not sufficient ions are reaching critical areas, keeping you biofouling free.

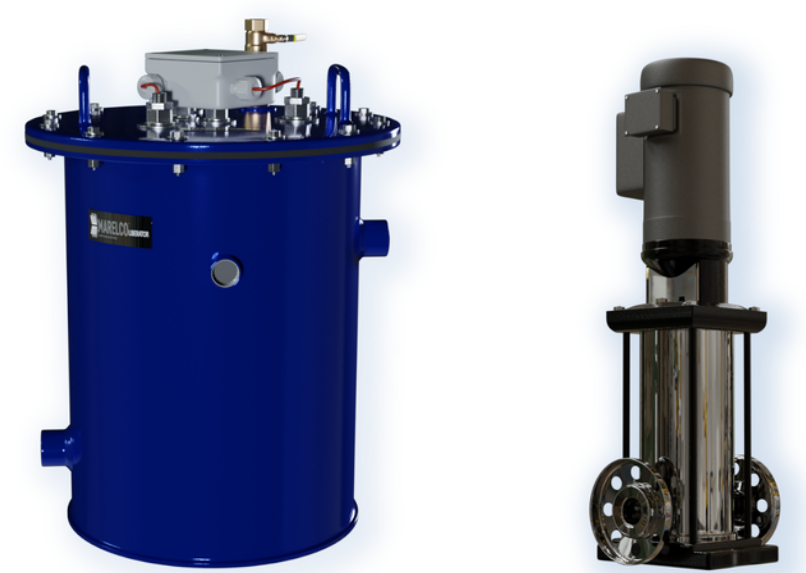
## Applications

- Freighters
- Container Ships
- Ro Ro Ferries
- Workboats
- Fishing Vessels
- HVAC



## Benefits

- Marine growth protection of box cooler/heat exchanger
- Focused fouling protection of critical areas around elements
- Maintains efficiency of the cooling requirements
- Reduces fuel consumption and energy usage
- No additional welding, cutting, potential leaks in traditional watertight anode connections
- Can be retrofitted
- Can be specified in the design
- Reduced install time
- Reduced labor costs



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Protecting internal seawater systems and hull from biofouling and corrosion is key to improving vessels' fuel consumption, energy efficiency reducing carbon emissions. These key benefits will help vessel owners/operators help to achieve EEXI + CII regulations.

