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## **GEA at SMM: Chemical-free ballast water treatment with the GEA BallastMaster marineX**

Düsseldorf, September 4, 2018 - The BallastMaster marineX, which GEA presented at SMM, the world's leading trade fair for the maritime industry in Hamburg, makes chemical-free ballast water treatment possible. The plant was developed by Trojan Technologies (London, Ontario, Canada).

The BallastMaster marineX is a highly efficient mechanical and physical treatment system for ballast water treatment of different ship sizes. The GEA BallastMaster marineX is designed for a throughput of 150 - 1500 m<sup>3</sup>/h and is available as explosion-proof version. The 2-stage system combines mechanical pre-filtration with subsequent disinfection of the ballast water by UV-C light. The system effectively disinfects organisms with a UV transmission value (UVT) of 44 percent and gets by completely without chemicals. It combines effective 32-µm filtration with subsequent UV irradiation for disinfection in one housing. This prevents germs or organisms from entering foreign ecosystems when the ballast water is drained. The effective differential pressure-controlled filter backwash (Full Flow) and the integrated, automated cleaning of the quartz tubes enable stable disinfection and the achievement of the IMO-D2 limits. The GEA BallastMaster marineX provides excellent process values especially in turbid water conditions, for example in rivers. Due to its compact design, it requires up to 50 percent less space than conventional systems. Its low power consumption and effective operating principle make it one of the best options for all types of ships.

### **Initial cleaning by mechanical filtration**

In ballasting, the majority of organisms and sediment particles are removed by a mechanical filtration process. This prevents the deposit of particles in the ballast water tanks and improves the results of the second stage, the disinfection of the ballast water. The automatic backwash ensures thorough cleaning of the filters and thus enables effective treatment and a long period of use.

### **Disinfection by UV-C**

In the second stage, the pre-filtered ballast water is disinfected by UV-C radiation from TrojanUV Solo Lamps™. During deballasting, the water bypasses the filtration (bypass) and is passed through the UV chamber again for treatment.

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## **Type approval G8**

The GEA BallastMaster marineX is approved by the International Maritime Organization (IMO) with the type Approval G8 and has the approval of the Alternate Management System (AMS) of USCG for all water qualities: fresh water, brackish water and sea water.

The advantages and customer benefits at a glance:

- Physical process, no use of chemicals
- No by-product formation
- Use of corrosion-resistant materials
- TrojanUV Solo Lamp™ technology
- High UV output, suitable for poor water quality
- Automatic cleaning of the lamp sleeve
- Low power consumption
- Continuous operation
- Explosion-proof version available
- Compact footprint with installation flexibility for new buildings and retrofits

## **USCG type-approval procedure**

- The tests were performed according to the Environmental Technology Verification (ETV) Ballast Water Protocol of the United States Environmental Protection Agency (USEPA).
- The UTP protocol is a basic test requirement for systems to obtain USCG type approval.

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Picture1: The GEA BallastMaster marineX is one of the best options for all types of vessels thanks to its low power consumption and the effective principle. (Source: GEA)

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Photo 2: Its low power consumption and effective operating principle make the GEA BallastMaster marineX one of the best options for all types of ships. (Source: GEA)

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GEA is one of the largest suppliers for the food processing industry and a wide range of other industries that generated consolidated revenues of approximately EUR 4.6 billion in 2017. The international technology group focuses on process technology, components and sustainable energy solutions for sophisticated production processes in various end-user markets. The group generates around 70 percent of its revenue in the food and beverages sector that enjoys long-term sustainable growth. As of December 31, 2017, the company employed almost 18,000 people worldwide. GEA is a market and technology leader in its business areas. The company is listed on the German MDAX (G1A, WKN 660 200). In addition, GEA's stock is included in the MSCI Global Sustainability Indexes. Further information is available on the Internet at [gea.com](http://gea.com).

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