



YANMAR

News Release

November 9, 2023

Yanmar Holdings Co., Ltd.

Yanmar Makes First Delivery of Maritime Hydrogen Fuel Cell System to Hybrid Passenger Ship



The 240kW maritime hydrogen fuel cell system.

Osaka, Japan (November 9, 2023) - Yanmar Power Technology Co., Ltd. (Yanmar PT), a subsidiary of Yanmar Holdings Co., Ltd, has made its first delivery of its newly commercialized maritime hydrogen fuel cell system, introduced in August 2023. This system was supplied to the passenger ship HANARIA, operated by MOTENA-Sea, a company backed by Mitsui O.S.K. Lines, Ltd. and other investors.

The HANARIA, Japan's first hybrid passenger ship to use both hydrogen and biodiesel, represents a significant breakthrough in achieving carbon neutrality. This innovative vessel operates with an onboard electric propulsion system that powers the ship's drive using generated electricity. Yanmar PT took charge of the ship's comprehensive power system design, incorporating two hydrogen fuel cells, batteries, biodiesel generators, power management system, propulsion equipment, remote monitoring, and other elements.

In addition, when running solely on the hydrogen fuel cell system and batteries, the ship creates zero emissions, with notable reductions in power source vibrations and noise, and the elimination of exhaust gas odors, contributing towards a pleasant onboard environment.

The Yanmar Group is advancing the YANMAR GREEN CHALLENGE 2050 to realize a

sustainable society. Yanmar PT will continue to provide environmentally friendly solutions to support its customers' decarbonization efforts.

■ Equipment Specifications

Model	GH240FC (hydrogen fuel cell system)
Rated output	240 kW x 2 units
Dimensions	W2,700 x D1,100 x H1,700 mm
Weight	2,400 kg
Fuel	Hydrogen (ISO14687 type I, Grade D)
Emissions	Zero emissions (CO2, NOx, SOx, PM emissions)



The launching ceremony of the HANARIA (provided by MOTENA-Sea) on September 13, 2023.

About Yanmar

With beginnings in Osaka, Japan, in 1912, Yanmar was the first ever to succeed in making a compact diesel engine of a practical size in 1933. A pioneer in diesel engine technology, Yanmar is a global innovator in a wide range of industrial equipment, from small and large engines, agricultural machinery and facilities, construction equipment, energy systems, marine, to machine tools, and components — Yanmar’s global business operations span seven domains. On land, at sea, and in the city, Yanmar provides advanced solutions to the challenges customers face, towards realizing A Sustainable Future. For more details, please visit the official website of Yanmar Holdings Co., Ltd.

<https://www.yanmar.com/global/about/>

Note: Information contained in the news release is valid at the time of publication and may differ from the most recently available information.

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