



YANMAR

News Release

June 4, 2020

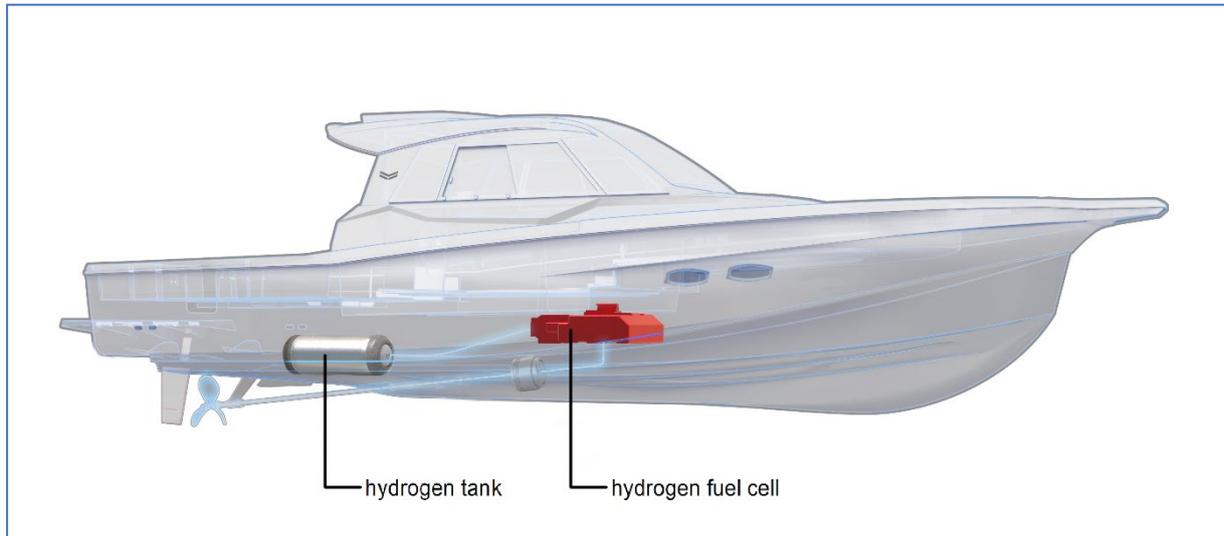
YANMAR HOLDINGS CO., LTD.

Yanmar to Develop Hydrogen Fuel Cell System for Maritime Applications

Osaka, Japan (May 12, 2020) - Yanmar Holdings Co., Ltd. and its subsidiary Yanmar Power Technology Co., Ltd. have announced the development of a hydrogen fuel cell system for maritime applications based on fuel cell technology for automobiles, as part of efforts to offer environment-friendly powertrain solutions.

With the International Maritime Organization announcing a strategy to reduce greenhouse gas (GHG) emissions to zero by the end of this century, marine environmental regulations have been tightened worldwide and the implementation of emission control areas has begun to have an effect on ship operations. To date, Yanmar has successfully addressed the various regional demands for emission control regulations by developing dual-fuel engines^{*1} and ever cleaner diesel engine technologies. The next challenge is to develop non-fossil fuel powertrains.

As a part of this challenge, Yanmar has been working on development of future powertrains using hydrogen as fuel. The company has signed a memorandum of understanding with Toyota Motor Corporation to develop a hydrogen fuel cell system for maritime applications based on hydrogen fuel cell system components including high pressure hydrogen tanks on MIRAI, a hydrogen fuel cell automobile manufactured by Toyota. With a view to realizing an easily installable module with superior cruising range, Yanmar aims to install the maritime fuel cell system on its own boat and start a field demonstration test by the end of FY2020. Furthermore, the company plans to expand the technology for a variety of applications and deployments.



The hydrogen fuel cell unit and high-pressure tank

*1 Dual-fuel engine: Engine that can be used with both environment-friendly Liquefied Natural Gas (LNG) and diesel fuel

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. Moving on, with industrial diesel engines as the cornerstone of the enterprise, Yanmar has continued to expand its product range, services, and expertise to deliver total solutions as an industrial equipment manufacturer. As a provider of small and large engines, agricultural machinery and facilities, construction equipment, energy systems, marine, machine tools, and components — Yanmar's global business operations span seven domains.

On land, at sea, and in the city, Yanmar's Mission of "providing sustainable solutions focused on the challenges customers face, in food production and harnessing power, thereby enriching people's lives for all our tomorrows," stands testament to Yanmar's determination to provide us with "A Sustainable Future".

For more details, please check out the official website of Yanmar Co., Ltd.

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