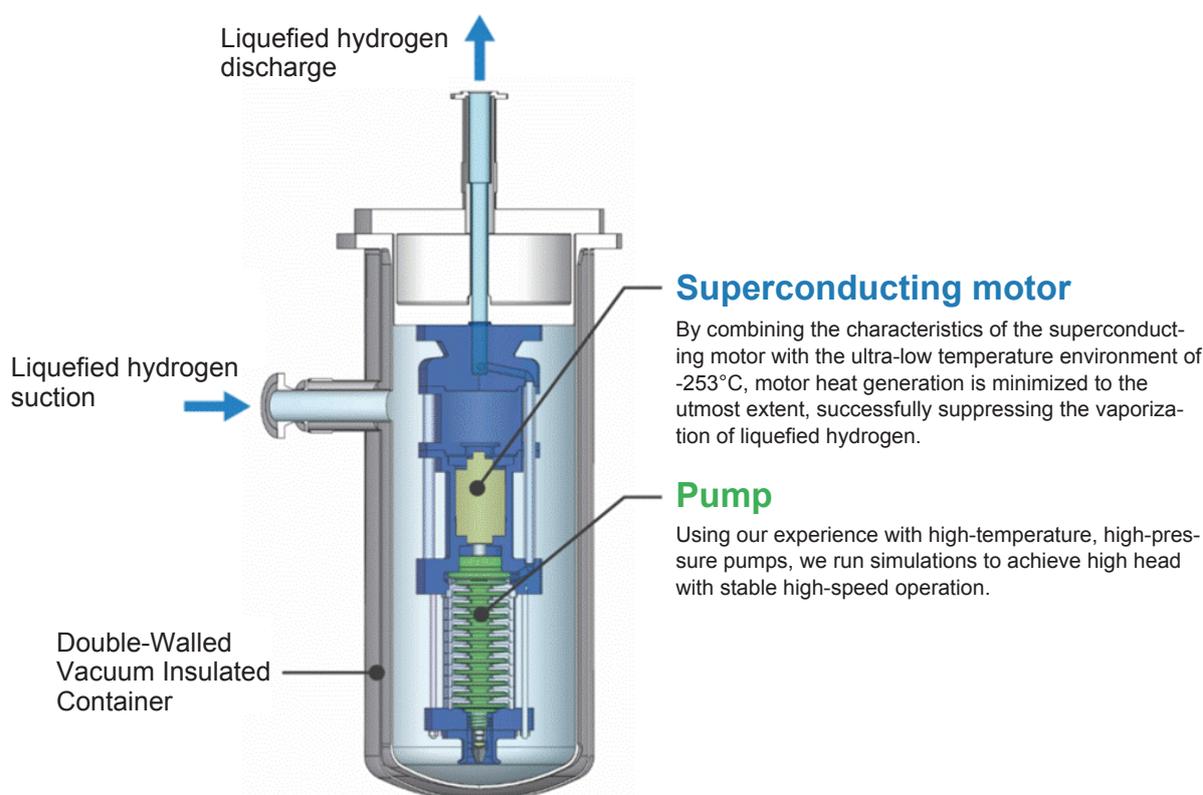


Liquefied Hydrogen Pump with High-Temperature Superconducting Motor

Features

- ◆ The high-speed rotational design ensures sufficient discharge pressure even for low-density liquefied hydrogen.
- ◆ The high-temperature superconducting motor minimizes heat generation to the utmost extent, suppressing the vaporization of liquefied hydrogen.
- ◆ Achieves large-scale transfer with our world-leading high-flow, high-pressure pump.
- ◆ Offers high durability and stability, enabling continuous operation in extremely low-temperature environments.



Overview & Principles

This pump is the world's first submersible motor pump equipped with a high-temperature superconducting motor, developed for large-scale transfer of liquefied hydrogen.*

By applying a highly efficient high-temperature superconducting motor, motor heat generation is minimized to the utmost extent, enabling pressurization and transfer of liquefied hydrogen while suppressing the generation of BOG (Boil-Off Gas).

This pump contributes to reducing supply costs and minimizing energy losses toward the practical realization of the hydrogen supply chain.

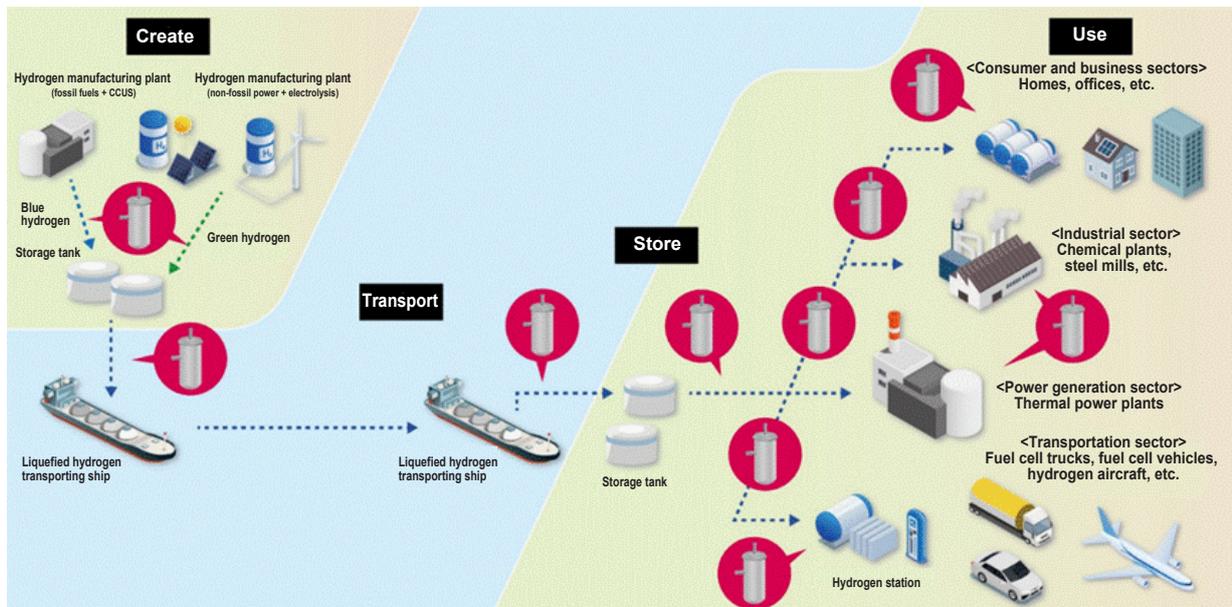
The pump was jointly developed by Torishima Pump Mfg. Co., Ltd. and Professor Taketsune Nakamura of the Graduate School of Engineering, Kyoto University.

[Basic performance]

The following performance has been verified through an operational test conducted with actual liquefied hydrogen at -253°C :

- Flow rate: 30.5 m^3/h
- Pressure: 1.6 MPa
- Rotation speed: 5,000 min^{-1}

*As of March 2024, according to Torishima Pump Mfg. Co., Ltd.



Energy-Saving Effects & Special Remarks

None

Track Record or Implementation Plans

Domestic / Overseas None to date

Contact: Torishima Pump Mfg. Co., Ltd.

Website URL <https://www.torishima.co.jp/> (Japanese)
<https://www.torishima.co.jp/en/> (English)