

ORV

OPEN RACK VAPORIZER

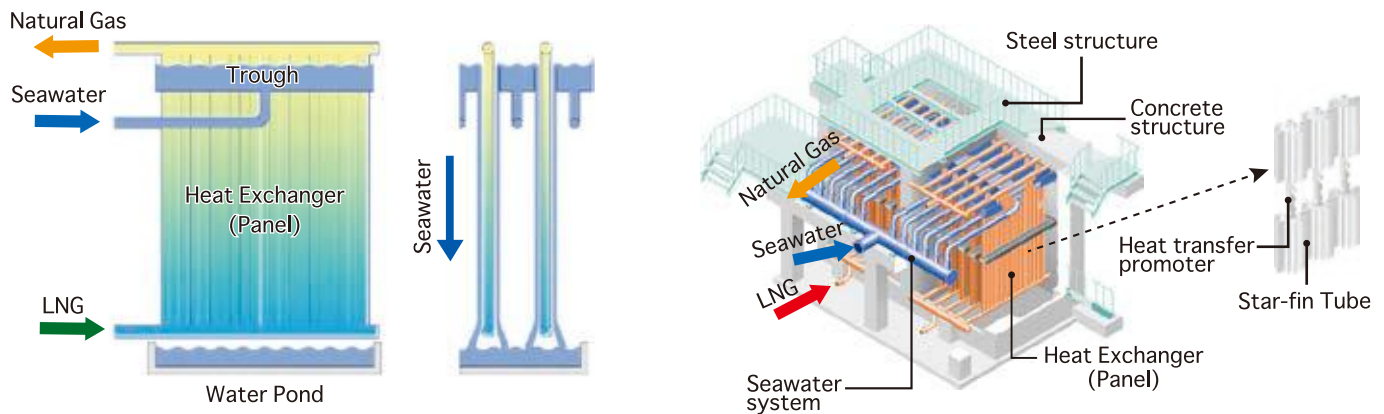
Ensuring high safety and reliability for long-term continuous operation at a low operating cost

Outline

In the Open Rack Vaporizer, seawater flows on the surface of panels with many heat exchanger tubes (star-fin tubes) to vaporize the internal LNG. Seawater used as a heat source can reduce the operating cost, and the simple open-rack structure brings easy operation monitoring, maintenance, and inspection. This is the safest and the most reliable vaporizer of its kind. ORV (Open Rack Vaporizer) is a mainstream vaporizer for base-load operations throughout the world.



ORV system



Features

HiPer V (Optimum design of ORV)

The heat transfer phenomenon is complicated in the LNG vaporizer, because the multi-component LNG vaporizes inside, while seawater freezes outside deteriorating heat transfer coefficient. The large star-fin of the heat exchanger tubes of the latest HiPer V, as well as optimization of the shapes of the internal/external fins and the heat transfer promoter, prevents the fin grooves from getting clogged by icing and greatly improves the vaporizing performance.

Low Operation Cost

Seawater used as a heat source saves the operating cost and the quantity of seawater can be reduced by the optimum design of the HiPer V. Furthermore, the high-performance uniform distribution open channel trough permits effective use of seawater as a heat source.

High Reliability

All parts in contact with LNG are made of aluminum alloy with excellent strength for cryogenic use. The ORV panels are coated with an aluminum-zinc alloy to provide corrosion resistance against seawater. Aluminum-zinc alloy coating not only prevents direct contact between the base metal and seawater but also prevents corrosion of the base of metal as the sacrificial anode. The aluminum-zinc alloy clad tube (option) made by extrusion process has longer life than the thermal spray coating reducing the maintenance cost.

Easy Operation

Quick start and operation under rapid load fluctuation within a range from 0 to 100% according to the change in demand are possible. The explosion-bonded dissimilar metal joint (transition joint) between the ORV panel and the LNG inlet piping prevents leakage due to a sudden temperature change and secures the safety.

Flexible Design

ORV is comprised of panel blocks, and the number of tubes, panels and manifolds are flexible. According to the operating conditions (LNG load capacity and the flow rate and temperature of seawater) the installation space can be minimized.

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