EBARA

Ahead > Beyond

Environmentally Friendly Canned Motor Pumps for Ammonia

Model VPCC/VPCR

* "Model○○○" in this catalog is our model code.

The products listed in this catalog fall under the category of “goods indicated in Export Trade Control Order Appended Table 1, item 16.” Therefore, when exporting them it will be necessary to confirm information such as their “Application” and “User,” and in some cases permission from the Minister of Economy, Trade and Industry will be required. (These requirements should be confirmed by the exporter.)

Contact for inquiries:
Email:ebara-custom-ammonia@ebara.com

The listed products fall under the category of “goods indicated in Export Trade Control Order Appended Table 1, item 16.” Therefore, when exporting them it will be necessary to confirm information such as their “Application” and “User,” and in some cases permission from the Minister of Economy, Trade and Industry will be required.
(These requirements should be confirmed by the exporter.)

EBARA CORPORATION
Head Office: 11-1, Haneda Asahi-cho, Ota-ku, Tokyo 144-8510, Japan
https://www.ebara.co.jp/en/

10-084-E01
2022.8

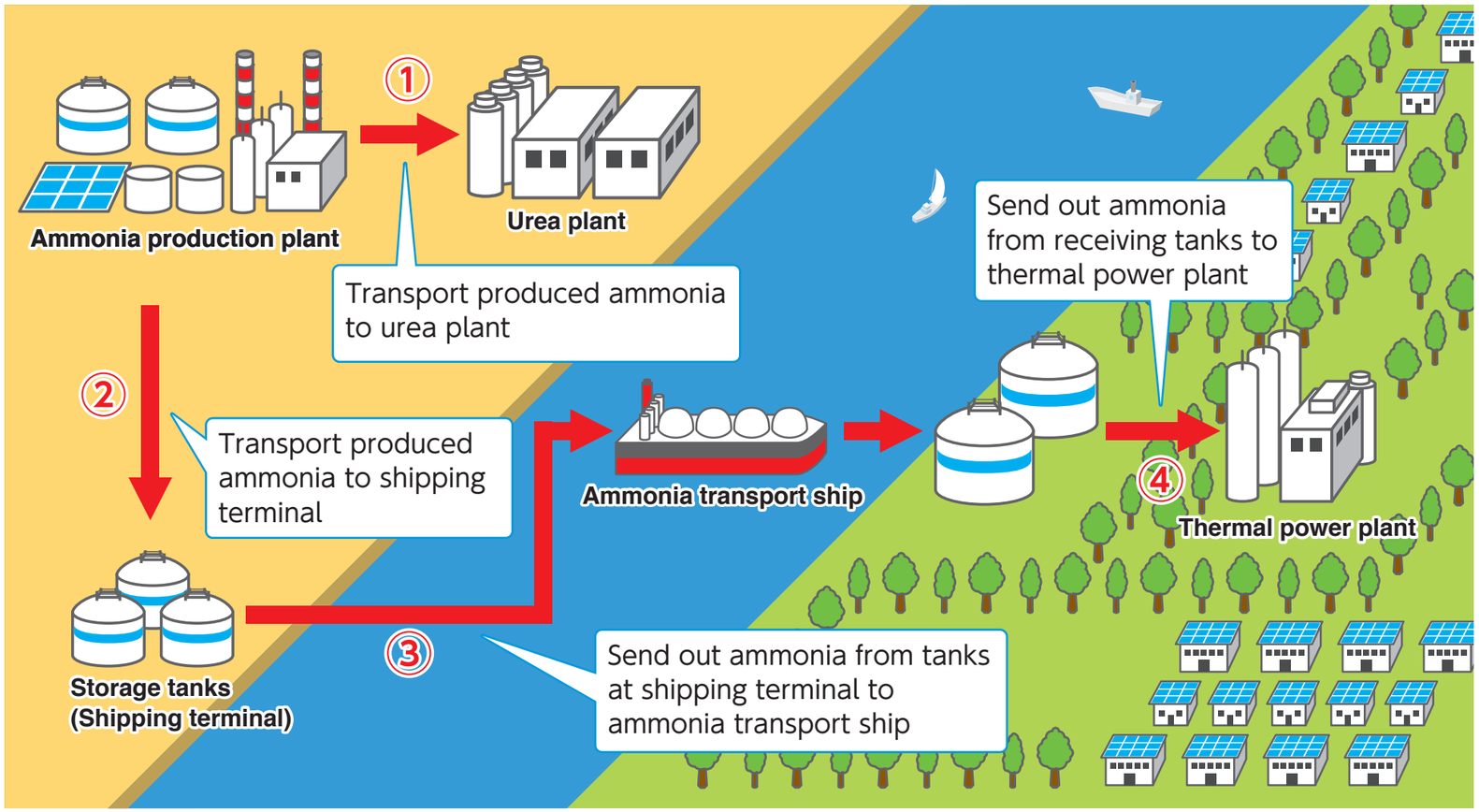
EBARA's contributions to the ammonia supply chain

Up to this point, ammonia has been used as a raw material for fertilizers and as a basic chemical, but its applications are now expanding as a new carbon-free fuel since it has the property of not emitting CO2 when burned, and as a hydrogen carrier. Since the strong odor and toxicity of ammonia make it difficult to handle, it is important to prevent its leakage to outside locations. By utilizing the experience and technologies in liquid ammonia transport which we have cultivated in the past, we will contribute to the creation of a sustainable society with leak-free pumps that can safely support the expanding ammonia supply chain.

Fusion of three proven technologies

Our environmentally friendly canned motor pumps for ammonia are products that combine our cryogenic submerged pumps, API VS6 type pumps, and canned motor pumps, which incorporate the abundant experience we have accumulated and the technology we have established over many years. The structure was designed in consideration for low-temperature fluid, and it allows optimal hydro-models to be selected to accommodate a wide range of flow volumes. In addition, our fully sealed canned motors are capable of handling large volumes of ammonia, which is highly corrosive, and will play an active role in each stage of production, transport, and usage in the ammonia supply chain.

Our products can be used in various applications



(1): The transfer pumps for liquid ammonia used as a raw material for urea can be leak-free seal-less pumps instead of mechanical seal type pumps,so they can contribute to the improvement of plant environments.

(2): Ammonia emits no CO2 when burned, so it can support next-generation power generation infrastructure as a clean fuel. We can provide transfer pumps to transport ammonia to shipping terminals for use as fuel.

(3): Ammonia as fuel is sent out from shipping terminals to ammonia transport ships and delivered to each location where it will be used. We can provide send-out pumps to transport ammonia from tanks at shipping terminals to transport ships. We will provide suitable pumps in accordance with tank types.

(4): Ammonia received from transport ships at the location of use is stored in tanks and sent to thermal power plants for use as fuel. We can provide send-out pumps to transport ammonia from receiving storage tanks to power plants. In the same manner as at shipping terminals, we will provide suitable pumps in accordance with tank types.

Pot Type:
Model VPCC

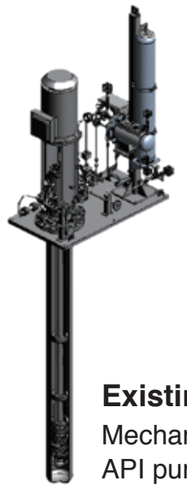
Contributes to the reduction of impacts to the surrounding environment with leak-free transport of liquid ammonia

Pot Type: Model VPCC

- Space saving
- Oil-free
- Low environmental impacts
- Improved safety

Comparison with Existing Model

Pot Type:
Model VPCC



Existing model
Mechanical seal type
API pump (VS6)

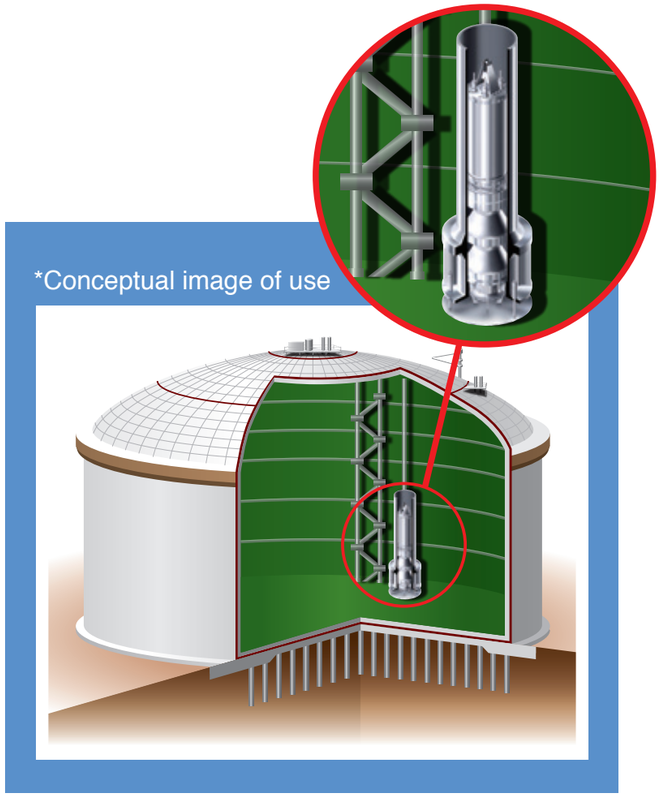
Features of the Model VPCC

- Seal-less structure (no shaft seal required) achieved by conversion to canned motor, for reduced odors and leakage
- Use of self-lubrication system eliminates the need for auxiliary equipment such as oil supply equipment and cooling equipment
- Suitable materials have been selected, based on our abundant experience in numerous projects handling liquid ammonia
- The above-ground section only consists of piping, for a space saving design
- No complex shaft seal structures, contributing to reductions in maintenance load and costs

In-tank Type:
Model VPCR

In-tank type which can be adapted to use with PC tanks

In-tank Type: Model VPCR

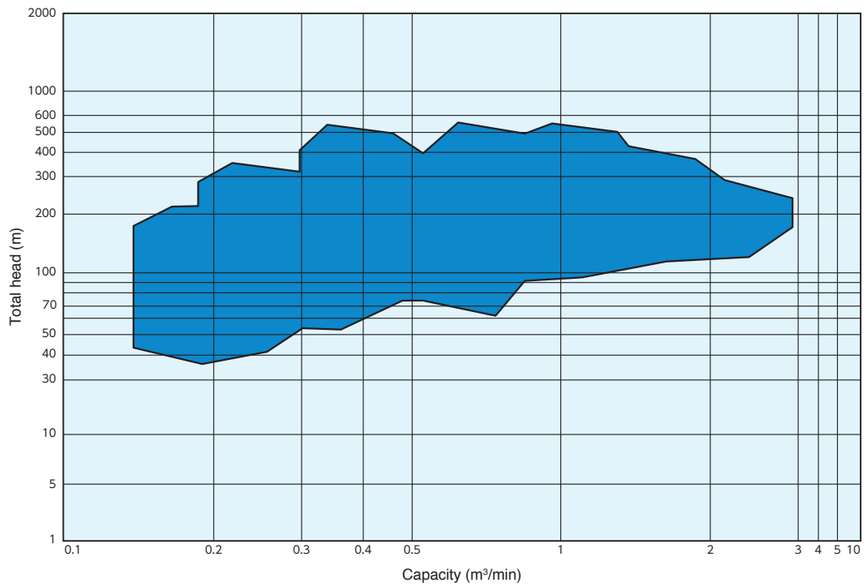


Features of the Model VPCR

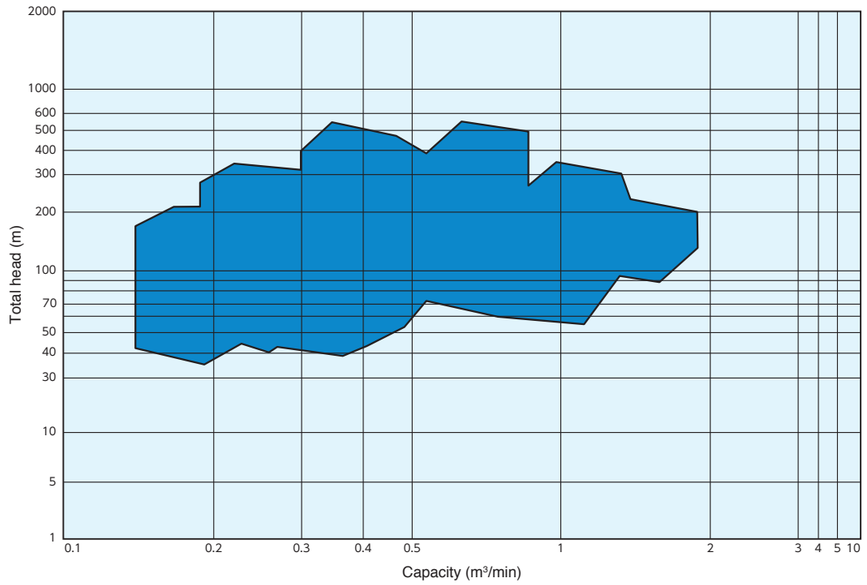
- In-tank structure which can be adapted to use with PC tanks
- Designed for high structural stability, while considering that the pump discharge pressure is applied to the entire apparatus
- Canned motor structure provides upsizing potential
- High reliability which fully applies the technology and experience we have obtained in LNG pumps
- High suction performance allows the minimum liquid level in the tank to be kept low

Selection Charts

■50Hz



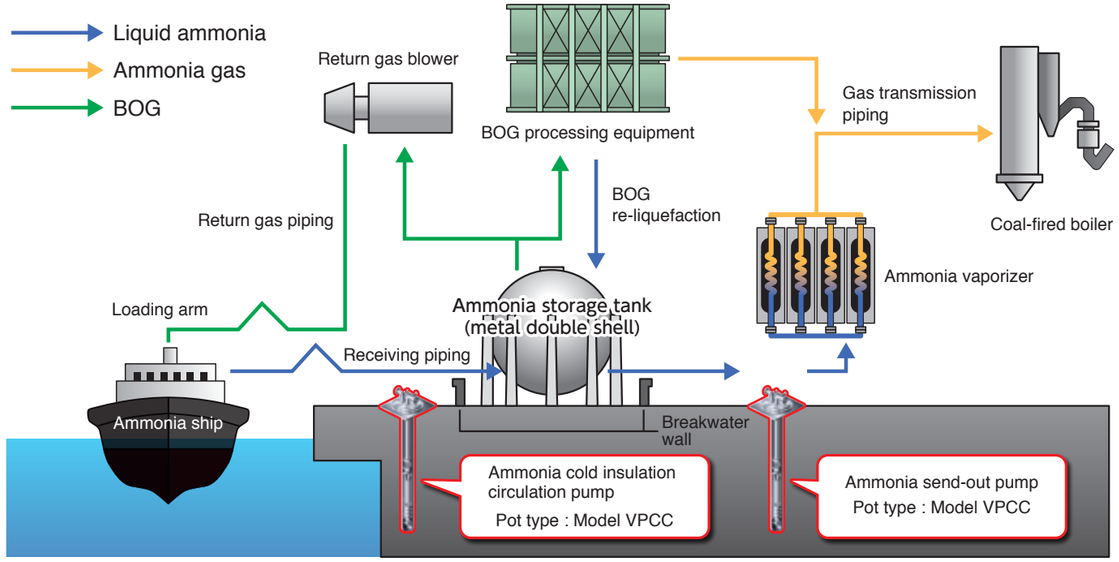
■60Hz



Consultation is also available for conditions other than those in the above Selection Charts.

Example of Use in Fuel Ammonia Power Generation

Metal double shell tank case



PC tank case