

Developed GHP XAIR IV,
the Latest Model of a Gas-Powered Air Conditioning System
Compatible with Low-Global-Warming-Potential (GWP) Refrigerant R32
*A new type of gas engine-driven heat pump (GHP)
for reduced environmental impact, power conservation, and energy saving*

Tokyo Gas Engineering Solutions Corporation
Osaka Gas Co., Ltd.
Toho Gas Co., Ltd.

Tokyo Gas Engineering Solutions Corporation (President: Yasuhiro Konishi), Osaka Gas Co., Ltd. (President: Masataka Fujiwara), and Toho Gas Co., Ltd. (President: Satoshi Yamazaki) (the "Three Companies") have jointly developed GHP XAIR IV (the "Product") with Aisin Corporation (President: Moritaka Yoshida, "Aisin"), Heating & Ventilation A/C Company, Panasonic Corporation (President: Eiichi Katayama, "Panasonic"), and Yanmar Energy System Co., Ltd. (President: Koji Yamashita, "Yanmar"). The Product is a next-generation model of the super-efficient GHP XAIR series of gas-powered heat pumps (GHPs),^{*1} or gas-powered air conditioning systems, that is compatible with low-GWP^{*2} refrigerant R32 and achieves reduced environmental impact, power conservation, and energy saving simultaneously. The Product will be launched beginning in April 2026 by gas companies and manufacturers on a nationwide basis.

Under the Act on Rational Use and Proper Management of Fluorocarbons, the use of refrigerants with low GWP gradually became mandatory for commercial air conditioning equipment from 2021 onwards, and regulations on GHPs will also begin in 2027. The Product uses R32, which is a low GWP refrigerant with a GWP of less than one-third (GWP = 675) of conventional refrigerants and complies with the new standards established under the Act on Rational Use and Proper Management of Fluorocarbons.

Furthermore, with the widespread use of generative AI and the increase in data centers, electricity demand is expected to grow further in the future, and there is a growing social demand for *power conservation and energy saving*. The Product achieves even greater energy savings by improving operating efficiency by approximately 5% compared to previous models while maintaining the power saving capability of GHPs—their greatest feature—that is, their power consumption is only approximately one-tenth^{*3} of that of electric heat pump air conditioners (EHPs).

The Three Companies will propose and sell the Product to a wide range of customers, including office buildings, commercial facilities, schools, hospitals, and factories.

As a measure to combat global warming, the city gas industry is taking steps, such as using low GWP refrigerants and increasing efficiency, on the consumer equipment side, as described in this article. On the energy source side, the industry is also accelerating efforts to shift from coal and heavy oil to natural gas as a fuel and to make city gas carbon-neutral through the use of e-methane^{*4} and other technologies. E-methane is the same compound as methane, the main component of ordinary city gas, and allows existing infrastructure and consumer equipment to be used in the same way as

before. Therefore, as e-methane becomes more widespread in the future, the Product will also be able to smoothly promote initiatives for carbon neutrality while reducing additional infrastructure construction costs.

At HVAC&R JAPAN 2026, the Product will be exhibited in the booths of the Japan Gas Association and GHP manufacturers. This exhibition (sponsored by the Japan Refrigeration and Air Conditioning Industry Association) will be held at Tokyo Big Sight from Tuesday, January 27 to Friday, January 30, 2026.

*1: Refers to an air conditioning system that uses a gas engine to drive the compressor in the outdoor unit and heats and cools air by operating a heat pump.

*2: Global warming potential is an index that shows how much greenhouse gases affect global warming, with carbon dioxide as the standard (GWP = 1).

*3: The value was determined by comparing outdoor units of the same capacity.

*4: E-methane is methane synthesized from collected CO₂ and renewable energy-based hydrogen and other raw materials. Burning e-methane does not actually cause the amount of CO₂ in the atmosphere to increase; therefore, it is attracting attention as a next-generation energy source that can contribute to achieving carbon neutrality.

[Major Product features*5]

Environmental performance	Uses a refrigerant with a low environmental impact	- The Product uses new refrigerant R32, which has a low GWP (= 675) and complies with the newly enforced standards, contributing to the mitigation of global warming.
Energy savings	Improves APFp,*6 energy consumption efficiency	- Operating efficiency has improved by approximately 5% compared to previous models, and all standard models achieve APFp 2.20 or higher. The Product thus contributes to further energy savings.
Power savings	Power-saving capabilities maintained	- The Product maintains the power-saving effect distinctive of GHPs, reducing power consumption to about one-tenth that of electric heat pump air conditioners (EHPs), thereby reducing peak power consumption and contributing to power savings.
User comfort	Continued operation even in severe weather conditions	- The Product inherits features of previous models, continuing cooling operation even when the outside air temperature reaches 50°C (122°F) and heating operation even when the outdoor unit is covered with snow.*7,8

[Product logo]



[Product photos*9]

Manufactured by Aisin



Manufactured by Panasonic



Manufactured by Yanmar



[Product models]

Specifications		Standard type/Replacement type			
Capacity		Equivalent to 16 hp (45 kW)	Equivalent to 20 hp (56 kW)	Equivalent to 25 hp (71 kW)	Equivalent to 30 hp (85 kW)
Manufactured and distributed by	Aisin*10	○	○	○	○
	Panasonic	○	○	○	○
	Yanmar	○	○	○	○

*5: The specific technologies that provide these features vary from manufacturer to manufacturer.

*6: Refers to annual energy efficiency. Larger numbers indicate higher efficiency.

*7: Depends on installation and operating conditions. Also, some models are excluded.

*8: The function of continuing operation when the outdoor unit is covered with snow (automatic operation of the fan in the outdoor unit to blow snow off the fan) is optional for the Products manufactured by Panasonic and Yanmar.

*9: Product photos are for reference only. The actual appearance is subject to change.

*10: The replacement type manufactured by Aisin is not included.

[Reference: Outline of Product manufacturers/distributors]

(1) Aisin Corporation

Established	August 31, 1965
Capital	45 billion yen
Representative Director and President	Moritaka Yoshida
Business description	Manufacture and sale of automotive parts and energy solution-related equipment
Head Office	2-1 Asahi-machi, Kariya, Aichi Prefecture

(2) Heating & Ventilation A/C Company, Panasonic Corporation

Established	October 1, 2021
Capital	-
President	Eiichi Katayama
Business description	<p>Development, manufacture, and sale of air conditioning-related products such as residential air conditioners, commercial air conditioners, heat pump water heaters, and hot water heaters</p> <p>Development, manufacture, and sale of ventilation systems, air purifiers, dehumidifiers, and other air quality-related equipment, as well as the design, installation, management, and maintenance of environmental equipment such as ventilation and air conditioning systems.</p> <p>Development, manufacture and sale of air conditioning devices and optical devices</p>
Head Office	Panasonic Tokyo Shiodome Building, 1-5-1 Higashi-Shinbashi, Minato-ku, Tokyo

(3) Yanmar Energy System Co., Ltd.

Founded	March 3, 2003
Capital	90 million yen
Representative Director and President	Koji Yamashita
Business description	Development, manufacture, sale, installation, maintenance, operation, and support of air conditioning systems, power generation systems, drive systems, biogas power systems, photovoltaic power systems, and remote monitoring systems
Headquarters	Yanmar Synergy Square, 1-1-4 Jokoji, Amagasaki, Hyogo Prefecture