

Hybrid Cooling and Heating System Based on Solar Heat and Natural Chiller

Stable and comfortable air-conditioning system based on clean, solar heat and environmentally friendly natural refrigerant chiller

Kawasaki Thermal Engineering commercialized the natural refrigerant chiller (absorption chilled/hot water supplier) in 1968 for the first time in the world.

In June 2010, it started the sales of a solar and natural refrigerant chiller specialized for solar heat use.

《Special features of the system》

Environmentally friendly natural refrigerant

Instead of using CFC, HCFC, or HFC, which have high GWP, this air-conditioning system uses naturally-occurring “water” as the natural refrigerant.

Stable and comfortable air-conditioning despite the use of variable solar heat

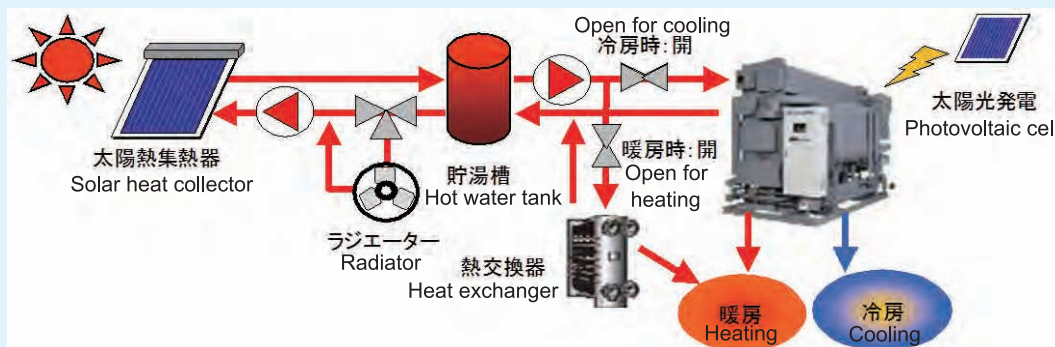
This natural refrigerant chiller is a convenient machine that can utilize variable heat sources such as solar heat, equipped with a back-up heat source based on clean, natural gas. While solar heat is utilized as the primary heat source, efficient back-up is provided when sufficient heat is not available due to the weather condition. No compromise with comfort and convenience in pursuit of environmental benefits.

Contribution to the leveling of electricity load

Because this natural refrigerant chiller uses natural gas, it is possible to reduce dependence on electricity, which contributes to avoiding power shortage at electricity consumption peaks.



Solar and Natural Refrigerant Chiller



Place: Kawasaki Thermal Engineering. Shiga factory.

Manufacturer: Kawasaki Thermal Engineering.

Location: 1000 Aojicho, Kusatsu City, Shiga Pref., Japan

Scale: Cooling and heating of a factory (4,600 m²) and a two-story office building (1,000 m²)

Facility: Cooling and heating air-conditioning system that uses solar heat

Equipment: Vacuum tube heat collector: 160 sheets (260 m²)
natural gas-fired, solar, and natural refrigerant chiller (capacity: 739 kW)
control system ("e-CopSaver")

《Energy-saving》

○Energy consumption reduction: 27% (the total amount of electricity and natural gas)

○CO₂ emission reduction: 19 tCO₂/year

* The total consumption of electricity and natural gas of the entire system, including the control system, as compared with the conventional system.