

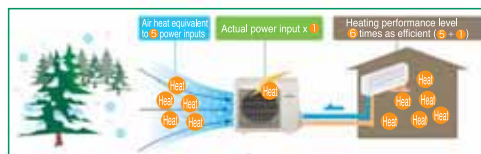
Drastic CO₂ reduction with heat pump hot-water supply and heating.

Heat Pump Hot-water Heater System

Features

About Heat Pump

Evaporation is a thermal separation process by which matter in a liquid state spontaneously becomes gaseous, when the gaseous matter will take heat from the circumference. Surrounding objects will be deprived of heat, and the objects will become cool. On the other hand, condensation is the change of the physical state of matter from a gaseous phase into a liquid phase. The matter radiates heat to the circumference when the matter changes to a liquid. Then surrounding objects will be heated. The gas and liquid are called refrigerants in that situation. The heat pump is a system that utilizes this mechanism to pump up and move the heat in the atmosphere efficiently with a compressor employed, thus cooling and heating objects. The heat pump driven by electric power does not use electricity as thermal energy. Instead, it uses electricity as the source of power to transfer heat. Therefore, it is said that the quantity of heat provided by the electric heat pump is approximately six times as large as the same power consumption converted into thermal energy. The efficiency of the heat pump is higher than that of conventional systems that obtain heat by burning fossil fuels, such as oil. Therefore, the heat pump imposes a lighter load on the environment. The heat pump is used for a large number of heating applications, such as air conditioners and hot-water supply machines.



Utilization of Air Heat for Room Heating

Overview

(Technical principles, actions, etc.)

Increase in Efficiency of Heat Pump System

① Development of New-type Swing Compressor

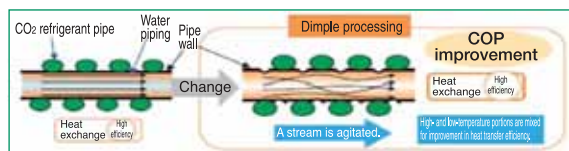
The heat pump incorporates a new-type compressor. This compressor increases the motor efficiency as well as the compression efficiency of the heat pump, thus contributing to an improvement in the energy-saving performance of the heat pump while suppressing the operating sound.



New-type swing compressor

② Development of Dimple Water Heat Exchanger

Employs a dimple-processed heat transfer tube on the water side for an improvement in heat exchanger effectiveness.



New-type swing compressor

Product Outline

In order to contribute to the prevention of global warming, Daikin offers heat pump systems that include water heaters and room heaters besides high-efficiency air conditioners.

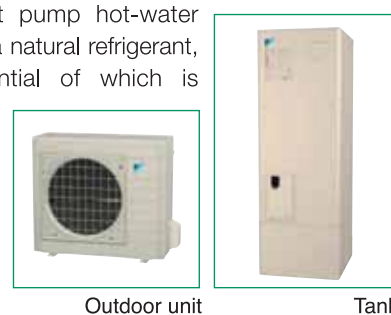
Heat Pump Hot-water Supply Heater for Home Use

This product developed in Europe provides hot water and room heating in places at temperatures below zero outdoors. Therefore, the product is used in extremely cold regions, such as Northern Europe.



ECO CUTE

The ECO CUTE is a heat pump hot-water supply that adopts CO₂ as a natural refrigerant, the global warming potential of which is approximately 2,000 times as low as that of chlorofluorocarbon. Furthermore, CO₂ has no ozone depletion potential.



Effects

◎ Reduction Potential of Japan

With the introduction of heat pump systems for building heating, a CO₂ reduction of 16 billion tons will be possible, and with the introduction of heat pump systems for industrial use, a CO₂ reduction of 200 million tons will be possible. This is 8% of CO₂ emissions across the world. (Source: "Heat pumps can cut global CO₂ emissions by nearly 8%", IEA Heat Pump Center)

Daikin Industries, Ltd.

CSR & Global Environment Center Umeda Center Bldg. 4-12 Nakazaki-nishi 2-chome, Kita-ku, Osaka-shi, Osaka, 530-8323

● TEL / +81-6-6374-9304 ● FAX / +81-6-6373-4380 ● E-Mail / kankyo@daikin.co.jp ● http://www.daikin.co.jp

※Note: This publication introduces examples of technologies and products believed useful towards solving environmental and energy issues. In no way does it constitute guarantees concerning their transfer or sale.

Applicable field
Offices and Homes

Water

Energy saving/Energy recovery

Energy storage/Energy creation

New energy

Waste disposal/
Recovering/
Resource saving

Air

Soil

Other