

COMBI-CHILLER SYSTEM FOR AIR-CONDITIONING

Description

Field of the Invention

The present invention relates to an air-conditioning chiller system. Specifically by combining a conventional chiller and an adsorption chiller. With the combination, the energy efficiency is improved by up till 60%.

Background of the Invention

Traditional, air conditioning chiller has been throwing away heat energy in the condenser (air cooled or water cooled). This energy is about 4 times the compressor electrical energy. There is little use for this energy because the condenser water temperature is low.

On the other hand, adsorption chillers have not been able have not been able to be commonly used due to lack of energy source.

By increasing the condensing temperature and using R134a or equivalent refrigerant, the energy in a conventional chiller can be used in the adsorption chiller. Both the chillers contribute to the final cooling requirement.

Summary of the Invention

The combi chiller system for air conditioning comprises of a conventional chiller system and an adsorption chiller system. The compression pressure in the conventional chiller system is increased to allow for higher condensing temperature. This allows the condenser water to be circulating at a higher temperature which can be used as a heat source in the adsorption chiller. The main idea of this invention is to reuse the waste heat in the condenser of conventional chillers. By using this invention, the energy savings can be up to 60%. This invention saves energy and has lower operation costs in the long run.

Brief description of the drawings and depiction of the preferred embodiment.

Fig.1 shows a conventional chiller system.

Fig.2 shows an adsorption chiller system.

Fig.3 shows a combi chiller system.

Fig.4 shows a Refrigerant pressure vs. temperature chart

Claims

1. The initiative of operating the compressor at a higher pressure and using of R134a to have the condensing temperature at a temperature of 70 deg C is a new invention. .
2. The using of heat from condenser cooling water in a conventional chiller to further generate more cooling is a new invention...
3. The using of a chiller's discharged heat as an energy source for de-sorption in an adsorption chiller is a new invention.