

## ABSTRACT

## REFRIGERATION SYSTEM

A refrigeration system includes an internal heat exchanger (23) capable of controlling the temperature of refrigerant flowing towards an expander (12). Upon change  
5 of the operating conditions, the internal heat exchanger (23) controls the temperature of the refrigerant to control the specific volume or the flow rate of the refrigerant, thereby eliminating imbalance between the flow rate through a compressor (11) and the flow rate through the expander (12). In a cooling operation in which the refrigerant circulation amount is larger than in a heating operation, the cooling capacity of the internal heat  
10 exchanger (23) is enhanced as compared to that in the heating operation, thereby increasing the flow rate of refrigerant into the expander (12) without part of the refrigerant bypassing the expander (12). This prevents the COP of the refrigeration system from being deteriorated.