

Title (en)  
HEAT PUMP SYSTEM

Title (de)  
WÄRMEPUMPENSYSTEM

Title (fr)  
SYSTÈME DE POMPE À CHALEUR

Publication  
**EP 2320158 A4 20140507 (EN)**

Application  
**EP 09802833 A 20090708**

Priority  
• JP 2009062469 W 20090708  
• US 8406508 P 20080728

Abstract (en)  
[origin: EP2320158A1] Disclosed is a heat pump system comprising a heat source cycle (A) and an NH<sub>3</sub> secondary coolant cycle (B). The heat cycle (A) includes a compressor (1), a condenser (2), an expansion means (3) and a cascade condenser (endothermic unit) (4), and employs an NH<sub>3</sub> coolant as a heat source. The NH<sub>3</sub> secondary coolant cycle (B) is connected to the heat source cycle (A), and cools an object load with an NH<sub>3</sub> secondary coolant, which is heat-absorbed by the cascade condenser (4) of the heat source cycle (A) so that the coolant is condensed. The NH<sub>3</sub> secondary coolant cycle (B) includes the cascade condenser (4), which is heat-absorbed by the cascade condenser (4) of the heat source cycle (A) so that the NH<sub>3</sub> secondary coolant is condensed, an evaporator (8) for cooling the object coolant with the NH<sub>3</sub> secondary coolant condensed in the cascade condenser (4), a head difference unit (H) and a circulating pump (6) arranged between the cascade condenser (4) and the evaporator (8) so as to circulate the NH<sub>3</sub> secondary coolant, a bypass conduit for bypassing the circulating pump (6), and a flow control valve (5) arranged in the bypass conduit.

IPC 8 full level  
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Citation (search report)  
• [Y] JP 2005030622 A 20050203 - MAEKAWA SEISAKUSHO KK  
• [Y] WO 2006038354 A1 20060413 - MAEKAWA SEISAKUSHO KK [JP], et al  
• [A] JP 2006214611 A 20060817 - NISSIN KOGYO KK  
• [A] JP H0539963 A 19930219 - SANKI ENG CO LTD  
• See references of WO 2010013590A1

Designated contracting state (EPC)  
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