

Title (en)
Cooling cycle

Title (de)
Kühlkreislauf

Title (fr)
Cycle de refroidissement

Publication
EP 1519127 A1 20050330 (EN)

Application
EP 04022914 A 20040927

Priority
JP 2003334770 A 20030926

Abstract (en)

Theme : To provide a cooling cycle having a structure such that rises in the coolant discharge temperature of a compressor are prevented, increases in pressure losses in the internal heat exchanger are avoided, and reductions in size, weight and cost of the necessary components are enabled.

<??>Means of Resolution : A Cooling cycle 1, comprising compressor 2 which increases the pressure of the coolant, radiator 3 which cools the coolant compressed by the compressor, expansion device 4 which reduces the pressure of the coolant cooled by radiator 3, evaporator 5 which evaporates the coolant whose pressure is reduced in expansion device 4, accumulator 6 which in addition to separating out the gas and liquid in the coolant passing through evaporator 5 separates out the oil mixed in with the coolant, and internal heat exchanger 7 which exchanges heat between the low-pressure coolant conducted from accumulator 6 to compressor 2 and the high-pressure coolant conducted from radiator 3 to expansion device 4, is provided with recovery path 10 which bypasses internal heat exchanger 7 enabling recovery of the liquid coolant or oil in accumulator 6 between said internal heat exchanger 7 and compressor 2, and regulator valve 11 which regulates the quantity recovered via this recovery path 10.

<IMAGE>

IPC 1-7
F25B 40/00; F25B 9/00

IPC 8 full level
F25B 1/00 (2006.01); **F25B 9/00** (2006.01); **F25B 13/00** (2006.01); **F25B 40/00** (2006.01)

CPC (source: EP)
F25B 9/008 (2013.01); **F25B 40/00** (2013.01); **F25B 2309/061** (2013.01); **F25B 2600/2501** (2013.01); **F25B 2700/21152** (2013.01)

Citation (search report)

- [PX] EP 1367344 A2 20031203 - PRAXAIR TECHNOLOGY INC [US]
- [Y] WO 9007683 A1 19900712 - SINVENT AS [NO], et al
- [Y] EP 1043550 A1 20001011 - ZEXEL CORP [JP]
- [A] US 6370896 B1 20020416 - SAKAKIBARA HISAYOSHI [JP], et al
- [A] US 2002078698 A1 20020627 - LEISENHEIMER BERT [DE], et al
- [A] EP 0915306 A2 19990512 - DENSO CORP [JP]
- [AD] PATENT ABSTRACTS OF JAPAN vol. 2002, no. 12 12 December 2002 (2002-12-12)
- [A] PATENT ABSTRACTS OF JAPAN vol. 2000, no. 25 12 April 2001 (2001-04-12)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 05 30 April 1998 (1998-04-30)
- [A] NEKSA P ET AL: "CO₂-heat pump water heater: characteristics, system design and experimental results", INTERNATIONAL JOURNAL OF REFRIGERATION, OXFORD, GB, vol. 21, no. 3, May 1998 (1998-05-01), pages 172 - 179, XP004287240, ISSN: 0140-7007

Cited by
CN104075493A; GB2539911A; US2021010733A1; US11828507B2; DE102020126579A1; WO2022073556A1

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)
EP 1519127 A1 20050330; JP 2005098635 A 20050414

DOCDB simple family (application)
EP 04022914 A 20040927; JP 2003334770 A 20030926