

Title (en)

Refrigeration cycle using a non-azeotrope refrigerant

Title (de)

Kältekreislauf mit nicht-azeotropem Kältemittel

Title (fr)

Cycle frigorifique utilisant un frigorigène non-azéotropique

Publication

**EP 0838643 B1 20030409 (EN)**

Application

**EP 98101094 A 19940621**

Priority

- EP 94109583 A 19940621
- JP 15324693 A 19930624

Abstract (en)

[origin: EP0631095A2] The composition of a refrigerant within the refrigeration cycle in which a non-azeotrope refrigerant is used is controlled to a predetermined composition. Further, the amount of the refrigerant is detected, and the composition and amount of the refrigerant within the refrigeration cycle are displayed, facilitating the maintenance of the refrigerant. The refrigeration cycle includes a compressor (1), a heat-source-side heat exchanger (2), use-side heat exchangers (20a,20b), and a pressure reducing apparatus (7,21a,21b), in which cycle a non-azeotrope refrigerant is used as a refrigerant. The refrigeration cycle further includes a sensor (8), disposed in a pipe portion where a liquid phase is formed, for detecting the composition of the non-azeotrope refrigerant circulating within the refrigeration cycle, and devices (5,6,10) for controlling the composition to a predetermined composition, a sensor for detecting the amount of refrigerant and a device for displaying the amount of the refrigerant. Since the composition of the refrigerant circulating within the refrigeration cycle is detected and control appropriate for the detected composition is performed, it becomes possible to perform a stable operation even when the refrigerant leaks outside and the composition of the refrigerant varies.

IPC 1-7

**F25B 49/02**

IPC 8 full level

**F25B 1/00** (2006.01); **F25B 5/00** (2006.01); **F25B 9/00** (2006.01); **F25B 13/00** (2006.01)

CPC (source: EP)

**F25B 9/006** (2013.01); **F25B 13/00** (2013.01); **F25B 2400/13** (2013.01); **F25B 2400/16** (2013.01)

Cited by

EP1186839A3; US6467304B2; US6516629B2; EP3919839A1; FR3111193A1

Designated contracting state (EPC)

DE GB

DOCDB simple family (publication)

**EP 0631095 A2 19941228**; **EP 0631095 A3 19950301**; **EP 0631095 B1 20000112**; DE 69422551 D1 20000217; DE 69422551 T2 20000803; DE 69432489 D1 20030515; DE 69432489 T2 20040212; EP 0838643 A2 19980429; EP 0838643 A3 20001115; EP 0838643 B1 20030409; JP H0712411 A 19950117

DOCDB simple family (application)

**EP 94109583 A 19940621**; DE 69422551 T 19940621; DE 69432489 T 19940621; EP 98101094 A 19940621; JP 15324693 A 19930624