

Title (en)  
Vapor Compression Refrigeration Cycle

Title (de)  
Dampf-Kompressionskältezyklus

Title (fr)  
Cycle frigorifique à compression de vapeur

Publication  
**EP 1862749 A2 20071205 (EN)**

Application  
**EP 07108423 A 20070517**

Priority  
JP 2006149628 A 20060530

Abstract (en)  
A vapor compression refrigerating cycle (10) has a compressor (1), a radiator (2), an oil separator (3) for separating the refrigerant radiated by the radiator (2) into refrigerant and oil containing a small amount of refrigerant, a first pressure reducer (6), an evaporator (7), and an accumulator (8), wherein a second pressure reducer (5) for reducing a pressure of the oil containing a small amount of refrigerant separated by the oil separator (3) and an inside heat exchanger (4) for exchanging heat between the refrigerant separated by the oil separator (3) and the oil containing a small amount of refrigerant reduced in pressure by the second pressure reducer (5) are provided, and the oil containing a small amount of refrigerant is injected into a midway of the compression step of the compressor (1) after being passed through the inside heat exchanger (4). Utilizing the oil containing a small amount of refrigerant separated by the oil separator, the performance of the refrigerating cycle is improved, and it becomes possible to integrate respective equipment with each other, and while the refrigeration ability can be increased, problems on space and weight can be solved.

IPC 8 full level  
**F25B 9/00** (2006.01); **F25B 31/00** (2006.01); **F25B 40/00** (2006.01); **F25B 43/02** (2006.01)

CPC (source: EP)  
**F25B 9/008** (2013.01); **F25B 40/00** (2013.01); **F25B 43/02** (2013.01); **F28D 1/0443** (2013.01); **F28D 7/0008** (2013.01); **F28D 7/0025** (2013.01); **F28D 7/103** (2013.01); **F25B 31/004** (2013.01); **F25B 2309/061** (2013.01); **F25B 2400/13** (2013.01); **F25B 2500/18** (2013.01); **F28D 2021/0073** (2013.01); **F28F 2009/0287** (2013.01)

Cited by  
EP2314955A4; EP2568247A3; FR2960632A1; EP4242551A4; EP2309208A4; EP3217115A4; US9683758B2; EP3742069A1; WO2009105601A1

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

Designated extension state (EPC)  
AL BA HR MK YU

DOCDB simple family (publication)  
**EP 1862749 A2 20071205**; **EP 1862749 A3 20081224**; JP 2007322009 A 20071213; JP 4787070 B2 20111005

DOCDB simple family (application)  
**EP 07108423 A 20070517**; JP 2006149628 A 20060530