

Title (en)  
Refrigerating circuit

Title (de)  
Kaeltekreislauf

Title (fr)  
Circuit de réfrigération

Publication  
**EP 2754980 A1 20140716 (EN)**

Application  
**EP 13425114 A 20130809**

Priority  
IT TV20120169 A 20120822

Abstract (en)  
The refrigerant circuit proposed, designed for refrigeration systems with throttling in two stages (3, 5) and a liquid/vapor separator (4) at intermediate pressure, comprises at least one compressor (1), one heat exchanger (2) of high pressure and at least one evaporator (6) fed through a further throttling valve (5). The circuit described includes a simple and innovative method for the separation of oil and its distribution to the at least one compressor. It is described also a type of circuit that provides the use of at least one auxiliary compressor (7) for the suction of flash vapor from the liquid/vapor separator (4) at intermediate pressure, therefore the refrigerant system which employs the circuit arrangement described can operate according to a so-called economizer cycle without any particular device for distributing oil to the suction compressor at different pressures. It also describes the insertion in the circuit of an ejector (16) for recovering expansion energy in order to increase the overall energy efficiency of a refrigerating system adopting the circuit configuration described.

IPC 8 full level  
**F25B 31/00** (2006.01); **F25B 40/00** (2006.01); **F25B 41/00** (2006.01)

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**F25B 31/004** (2013.01); **F25B 40/00** (2013.01); **F25B 41/00** (2013.01); **F25B 41/39** (2021.01); **F25B 2309/06** (2013.01);  
**F25B 2341/0016** (2013.01); **F25B 2400/075** (2013.01); **F25B 2400/13** (2013.01); **F25B 2400/23** (2013.01); **F25B 2500/01** (2013.01)

Citation (search report)  
• [A] DE 19747985 A1 19990527 - UNIV DRESDEN TECH [DE]  
• [A] US 2012006041 A1 20120112 - IKEDA TAKASHI [JP], et al  
• [A] EP 1813887 A1 20070801 - SANYO ELECTRIC CO [JP]  
• [A] DD 123967 A1 19770126  
• [A] US 2012180510 A1 20120719 - OKAZAKI TAKASHI [JP], et al

Cited by  
CN107795973A; FR3087001A1; CN112611121A; CN110388762A; CN105042953A; CN105157270A; EP3693685A1; US11435116B2;  
US11421681B2; US11085681B2; US11808500B2

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
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