

Title (en)
Appliance including a heat pump

Title (de)
Anwendung mit Wärmepumpe

Title (fr)
Appareil comprenant une pompe à chaleur

Publication
EP 2690379 A1 20140129 (EN)

Application
EP 12177962 A 20120726

Priority
EP 12177962 A 20120726

Abstract (en)
The invention relates to an appliance (1) including a treating chamber (3) in which a process medium is introduced; a heat pump (6) having a refrigerant circuit (68) in which a refrigerant can flow, the refrigerant circuit including a first heat exchanger (61) where the refrigerant is cooled off and said process medium is warmed up, a second heat exchanger (62) where the refrigerant is heated up, a compressor (63) to pressurize and circulate the refrigerant through the refrigerant circuit, the compressor including a lubricant, and a pressure-lowering device (64). The first and second heat exchanger, compressor and pressure-lowering device are operatively connected through refrigerant circuit piping (65) into which the refrigerant is apt to flow. The refrigerant circuit piping (65) comprises at least a narrow piping portion having a narrow hydraulic diameter (D_{Hnarrow}), and the ratio between the narrow hydraulic diameter (D_{Hnarrow}) and the hydraulic diameter (D_H) of the remaining piping portions of the refrigerant circuit piping (65) is comprised between 0.4 and 0.95. The at least one narrow piping portion being located in at least one of:
- between an outlet of the second heat exchanger (62) and an inlet of the compressor (63a), or
- Between an outlet of the first heat exchanger (61) and an inlet of the pressure-lowering device (64), or
- Between an outlet of the pressure-lowering device (64) and an inlet of the second heat exchanger (62), or
- below or at the suction inlet level (L) of the compressor (63).

IPC 8 full level
F25B 31/00 (2006.01); **F25B 1/00** (2006.01); **F25B 30/02** (2006.01)

CPC (source: CN EP)
F25B 1/00 (2013.01 - EP); **F25B 30/02** (2013.01 - CN EP); **F25B 31/00** (2013.01 - EP); **F25B 31/002** (2013.01 - CN EP); **F28D 21/0014** (2013.01 - EP); **F25B 2500/16** (2013.01 - EP)

Citation (applicant)
• EP 1405946 A2 20040407 - SANYO ELECTRIC CO [JP]
• US 2005086827 A1 20050428 - NAGAE ETSUSHI [JP], et al

Citation (search report)
• [I] US 4800736 A 19890131 - WEBER RUSSELL L [US]
• [I] US 2002046570 A1 20020425 - ITOH SATOSHI [JP], et al
• [I] US 2007000262 A1 20070104 - IKEGAMI MAKOTO [JP], et al
• [A] US 2975613 A 19610321 - HEIDORN JOHN H
• [A] US 2023435 A 19351210 - DESNOYERS PELTIER FRANK, et al
• [AD] EP 1405946 A2 20040407 - SANYO ELECTRIC CO [JP]
• [AD] US 2005086827 A1 20050428 - NAGAE ETSUSHI [JP], et al

Cited by
EP3483529A1

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)
EP 2690379 A1 20140129; AU 2013295230 A1 20150129; CN 104508398 A 20150408; CN 104508398 B 20171121; EP 2877792 A1 20150603; WO 2014016140 A1 20140130

DOCDB simple family (application)
EP 12177962 A 20120726; AU 2013295230 A 20130712; CN 201380039671 A 20130712; EP 13740225 A 20130712; EP 2013064780 W 20130712