

Title (en)
HEAT PUMP SYSTEM, AND HEAT PUMP WATER HEATER

Title (de)
WÄRMEPUMPENSYSYSTEM UND WÄRMEPUMPENWASSERERHITZER

Title (fr)
SYSTÈME DE POMPE À CHALEUR, ET CHAUFFE-EAU À POMPE À CHALEUR

Publication
EP 3040643 A4 20161214 (EN)

Application
EP 14847548 A 20140731

Priority
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• JP 2013243573 A 20131126
• JP 2014004029 W 20140731

Abstract (en)
[origin: EP3040643A1] Provided is a two-stage compression heat pump with which the amount of refrigerant oil in the two compressors is easily kept uniform. The system is provided with: a compression mechanism (10) provided with a lower stage-side compressor (10a) and a higher stage-side compressor (10b), for compressing and discharging a refrigerant; a water-refrigerant heat exchanger (11) for heat exchange between a target to undergo heat exchange and the refrigerant compressed by the compression mechanism (10); an expansion valve (12) for decompression and expansion of the refrigerant outflowing from the water-refrigerant heat exchanger (11); a heat source-side heat exchanger (13) for heat exchange between a target to undergo heat exchange and the refrigerant decompressed and expanded by the expansion valve (12); an oil equalizing mechanism (20) connecting the lower stage-side compressor (10a) and the higher stage-side compressor (10b), through which a refrigerant oil flows; and a four-way switching valve (14) for selectively switching between a two-stage compression path in which the refrigerant flows in order to the lower stage-side compressor (10a) and the higher stage-side compressor (10b), and a one-stage compression path in which it flows either to the lower stage-side compressor (10a) or the higher stage-side compressor (10b) only.

IPC 8 full level
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CPC (source: CN EP US)
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Citation (search report)
• [A] JP 2001349629 A 20011221 - DAIKIN IND LTD
• [A] JP 2013139902 A 20130718 - DAIKIN IND LTD
• [A] JP 2008111585 A 20080515 - DAIKIN IND LTD
• [A] EP 2221559 A1 20100825 - AIRWELL IND FRANCE SAS [FR]
• See references of WO 2015045247A1

Cited by
EP4215845A4; US11953246B2; US11460224B2; WO2020092744A3

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