

Title (en)
RADIATOR AND SUPERCRITICAL PRESSURE REFRIGERATION CYCLE USING THE SAME

Title (de)
HEIZKÖRPER UND KÄLTEKREISLAUF MIT ÜBERKRITISCHEM DRUCK

Title (fr)
RADIATEUR ET CYCLE FRIGORIFIQUE À PRESSION SUPERCRITIQUE L'UTILISANT

Publication
EP 3141857 A1 20170315 (EN)

Application
EP 16183460 A 20160809

Priority
JP 2015159916 A 20150813

Abstract (en)
An object is to provide a radiator capable of enhancing heat exchanging performance, and further reducing a refrigerant temperature at a refrigerant flow passage outlet, and a supercritical pressure refrigeration cycle using the same. A radiator 19 for radiating heat of a refrigerant whose pressure is supercritical pressure, including: multiple plate fins 31; and a plurality of refrigerant flow passages 34A to 34F formed by a heat transfer pipe group 33, wherein the refrigerant flow passages 34A to 34F include inlet heat transfer pipes 40A to 40C and outlet heat transfer pipes 42A1, 42A2, and intermediate heat transfer pipes 41A1 to 41C1, 41A2, 41B2, 41A3, 41B3, and a flow passage cross sectional area of the refrigerant flow passages 34A to 34F is gradually reduced from the inlet heat transfer pipes 40A to 40C to the outlet heat transfer pipes 42A1, 42A2.

IPC 8 full level
F28D 1/047 (2006.01); **F28D 1/053** (2006.01)

CPC (source: EP)
F25B 9/008 (2013.01); **F25B 39/04** (2013.01); **F28D 1/0475** (2013.01); **F28D 1/05341** (2013.01); **F25B 2309/061** (2013.01); **F28D 2021/0073** (2013.01); **F28F 2210/02** (2013.01)

Citation (applicant)
• JP 2007232365 A 20070913 - MITSUBISHI ELECTRIC CORP
• JP H07208822 A 19950811 - MITSUBISHI HEAVY IND LTD
• JP H08121915 A 19960517 - MITSUBISHI HEAVY IND LTD

Citation (search report)
• [Y] DE 10322165 A1 20041209 - VALEO KLIMASYSTEME GMBH [DE]
• [Y] WO 2008062771 A1 20080529 - DAIKIN IND LTD [JP], et al
• [A] JP 2005214525 A 20050811 - MITSUBISHI ELECTRIC CORP, et al
• [A] WO 2004061147 A1 20040722 - SHOWA DENKO KK [JP], et al
• [A] WO 2007083680 A1 20070726 - SHOWA DENKO KK [JP], et al

Cited by
US11892178B2

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

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