

Title (en)

Reinforcement plate for multiple row heat exchanger

Title (de)

Verstärkungsplatte für einen Mehrreihenwärmetauscher

Title (fr)

Plaque de renfort pour échangeur thermique à plusieurs rangs

Publication

EP 2413082 A3 20150304 (EN)

Application

EP 11174437 A 20110719

Priority

US 84513710 A 20100728

Abstract (en)

[origin: EP2413082A2] A heat exchanger includes a pair of manifolds 20 each extending between manifold ends 22 and defining a plurality of slits 30 disposed in a plurality of parallel slit rows R and each slit having a center axis C. The center axes C of the slits in each of the slit rows R are aligned in a row plane P. Reinforcement members 38 extend between reinforcement ends 40 each of which have at least one tab 48 for connection thereof to one of the manifold ends 22. Each of the manifolds 20 has at least one retainer 42 for clamping one of the reinforcement members 38 thereto. Each of the tabs 48 include at least one connector 50 extending toward the adjacent manifold end 22. One of the connectors 50 is centered on each of the row planes P to define row isolating openings 52 between adjacent connectors 50 to isolate each of the row planes P from differential forces of adjacent row planes P.

IPC 8 full level

F28F 9/00 (2006.01); **F28D 1/053** (2006.01); **F28F 9/02** (2006.01)

CPC (source: EP US)

F28F 9/001 (2013.01 - EP US); **F28F 9/0224** (2013.01 - EP US); **F28D 1/05383** (2013.01 - EP US); **F28F 2225/00** (2013.01 - EP US); **F28F 2275/08** (2013.01 - EP US); **F28F 2275/122** (2013.01 - EP US)

Citation (search report)

- [A] DE 102007052888 A1 20090507 - BEHR GMBH & CO KG [DE]
- [A] KR 100667701 B1 20070112 - DOOWON CLIMATE CONTROL CO LTD [KR]
- [A] EP 1978325 A1 20081008 - VALEO SYSTEMES THERMIQUES [FR]
- [A] JP H09210591 A 19970812 - DENSO CORP

Cited by

FR3056724A1; WO2018060623A3

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 2413082 A2 20120201; **EP 2413082 A3 20150304**; **EP 2413082 B1 20160713**; US 2012024508 A1 20120202

DOCDB simple family (application)

EP 11174437 A 20110719; US 84513710 A 20100728