

Title (en)

Heat exchanger and heat exchanger assembly for vehicles

Title (de)

Wärmeübertrager sowie Wärmeübertrageranordnung für ein Kraftfahrzeug

Title (fr)

Echangeur de chaleur et ensemble échangeur de chaleur pour véhicules automobiles

Publication

EP 1435503 A3 20051026 (DE)

Application

EP 04008664 A 19980423

Priority

- DE 19722097 A 19970527
- EP 98107377 A 19980423

Abstract (en)

[origin: EP0881447A2] The heat transfer assembly (2-19) is designed for use in a vehicle. It consists of a rib or tube block with flat tubes and expanded tube ends at opposite sides. The adjacent lateral wall sections of the tube ends lie against each other in a positive fit. The longitudinal wall sections of the tube ends, against the flow boxes, are in a positive fit against their facing flow box wall sections.

IPC 1-7

F28D 1/04; **F28F 9/02**; **F28F 9/16**

IPC 8 full level

B60K 11/04 (2006.01); **F28D 1/04** (2006.01); **F28D 1/053** (2006.01); **F28F 1/00** (2006.01); **F28F 1/02** (2006.01); **F28F 9/02** (2006.01); **F28F 9/16** (2006.01)

CPC (source: EP US)

F28D 1/0435 (2013.01 - EP US); **F28F 1/025** (2013.01 - EP US); **F28F 9/0221** (2013.01 - EP US); **F28F 9/16** (2013.01 - EP US); **F28D 2021/0082** (2013.01 - EP US); **F28D 2021/0084** (2013.01 - EP US); **F28D 2021/0094** (2013.01 - EP US); **F28F 2009/004** (2013.01 - EP US); **F28F 2275/16** (2013.01 - EP US)

Citation (search report)

- [XY] DE 1277282 B 19680912 - BORG WARNER
- [Y] US 4183402 A 19800115 - COTTER RAY W [US]
- [X] DE 527341 C 19310617 - FRIEDRICH EMIL KRAUSS
- [PDX] DE 19543986 A1 19970528 - BEHR GMBH & CO [DE]
- [A] EP 0541805 A1 19930519 - NIPPON DENSO CO [JP]

Designated contracting state (EPC)

DE ES FR GB IT SE

DOCDB simple family (publication)

EP 0881447 A2 19981202; **EP 0881447 A3 19990623**; **EP 0881447 B1 20040818**; DE 19722097 A1 19981203; DE 59811818 D1 20040923; DE 59814344 D1 20090326; EP 1435503 A2 20040707; EP 1435503 A3 20051026; EP 1435503 B1 20090211; ES 2226025 T3 20050316; JP H1114271 A 19990122; US 6012512 A 20000111

DOCDB simple family (application)

EP 98107377 A 19980423; DE 19722097 A 19970527; DE 59811818 T 19980423; DE 59814344 T 19980423; EP 04008664 A 19980423; ES 98107377 T 19980423; JP 13557798 A 19980518; US 8575798 A 19980527