

Title (en)  
Heat exchanger

Title (de)  
Wärmetauscher

Title (fr)  
Echangeur de chaleur

Publication  
**EP 0694747 A3 19961227 (EN)**

Application  
**EP 95305169 A 19950724**

Priority  
JP 17284794 A 19940725

Abstract (en)  
[origin: EP0694747A2] A heat exchanger, such as a condenser (10) or an evaporator (20) for an automotive air conditioning refrigerant circuit includes a plurality of tube elements (11,21) each having a first planar portion and a second planar portion opposing the first planar portion. A plurality of projections (501,214) are formed at an interior surface of the first and second planar portions. At least one hole (501c,214c) is formed on a flat projecting end surface of the projection by piercing. The projections of the first and second planar portions are aligned with and face each other, and are fixedly connected to each other at their flat projecting end surfaces so that the at least one hole of the first and second projections face each other. This construction effectively increases the internal pressure resistance characteristics of the heat exchanger without causing an increase in a manufacturing cost thereof.

IPC 1-7  
**F28D 1/03**; **F28F 3/04**

IPC 8 full level  
**F28D 1/03** (2006.01); **F28F 3/04** (2006.01)

CPC (source: EP)  
**F28D 1/035** (2013.01); **F28D 1/0391** (2013.01); **F28F 3/044** (2013.01); **F28F 2001/027** (2013.01)

Citation (search report)

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- [DA] PATENT ABSTRACTS OF JAPAN vol. 016, no. 181 (M - 1242) 30 April 1992 (1992-04-30)
- [A] PATENT ABSTRACTS OF JAPAN vol. 005, no. 105 (M - 077) 8 July 1981 (1981-07-08)
- [A] PATENT ABSTRACTS OF JAPAN vol. 014, no. 420 (M - 1023) 11 September 1990 (1990-09-11)
- [PX] PATENT ABSTRACTS OF JAPAN vol. 95, no. 001

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Designated contracting state (EPC)  
DE FR GB IT SE

DOCDB simple family (publication)  
**EP 0694747 A2 19960131**; **EP 0694747 A3 19961227**; **EP 0694747 B1 19990317**; CN 1084872 C 20020515; CN 1133430 A 19961016; DE 69508320 D1 19990422; DE 69508320 T2 19990909; MY 133902 A 20071130; TW 319824 B 19971111

DOCDB simple family (application)  
**EP 95305169 A 19950724**; CN 95115819 A 19950725; DE 69508320 T 19950724; MY PI9502110 A 19950724; TW 84107928 A 19950731