

Title (en)  
A HEAT EXCHANGER

Title (de)  
WÄRMETAUSCHER

Title (fr)  
ÉCHANGEUR DE CHALEUR

Publication  
**EP 4317882 A1 20240207 (EN)**

Application  
**EP 22188221 A 20220802**

Priority  
EP 22188221 A 20220802

Abstract (en)  
A heat exchanger (100) for a motor vehicle includes at least one first manifold (10a, 10b), a first set of tubes (20), at least one second manifold (40a, 40b) and a second set of tubes (50). The at least one first manifold (10a, 10b) is for circulation of a first fluid within the first set of tubes (20) to define at least a portion of a first fluid circuit. The at least one second manifold (40a, 40b) is for circulation of a second fluid within the second set of tubes (50) to define at least a portion of a second fluid circuit. At least one second tube (50) includes a plurality of micro-channels (52) formed by at least one of extrusion and folding is received inside the first tube (20). The annular space between the first and second tubes (20) and (50) defines fluid flow passage for the first fluid.

IPC 8 full level  
**F28D 1/04** (2006.01); **F28D 7/00** (2006.01); **F28D 7/10** (2006.01)

CPC (source: EP)  
**F01P 3/18** (2013.01); **F28D 1/0391** (2013.01); **F28D 1/0426** (2013.01); **F28D 1/0443** (2013.01); **F28D 1/0461** (2013.01); **F28D 1/05391** (2013.01); **F28D 7/0066** (2013.01); **F28D 7/10** (2013.01); **F28D 7/103** (2013.01); **F28F 1/022** (2013.01); **F28F 9/0219** (2013.01); **F28F 9/0229** (2013.01); **F01P 2003/185** (2013.01); **F25B 39/04** (2013.01); **F28D 2021/008** (2013.01); **F28D 2021/0084** (2013.01); **F28D 2021/0094** (2013.01); **F28F 2009/0287** (2013.01)

Citation (search report)  
• [XII] WO 2020140882 A1 20200709 - ZHEJIANG JIZHI NEW ENERGY AUTOMOBILE TECH CO LTD [CN]  
• [XII] JP H0510694 A 19930119 - SHOWA ALUMINUM CORP  
• [X] EP 1788333 A1 20070523 - FORD GLOBAL TECH LLC [US]  
• [A] EP 3816541 A1 20210505 - VALEO AUTOSYSTEMY SP ZOO [PL]

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

Designated validation state (EPC)  
KH MA MD TN

DOCDB simple family (publication)  
**EP 4317882 A1 20240207**; WO 2024028052 A1 20240208

DOCDB simple family (application)  
**EP 22188221 A 20220802**; EP 2023069301 W 20230712