

Title (en)

HEAT EXCHANGER

Title (de)

WÄRMETAUSCHER

Title (fr)

ÉCHANGEUR THERMIQUE

Publication

**EP 1454106 B1 20160824 (DE)**

Application

**EP 02803775 A 20021116**

Priority

- DE 10158436 A 20011129
- EP 0212877 W 20021116

Abstract (en)

[origin: WO03046457A1] The invention relates to a heat exchanger, in particular for use in a motor vehicle, in addition to a circuit comprising a heat exchanger.

IPC 8 full level

**F28D 1/04** (2006.01); **F28F 9/02** (2006.01); **F25B 39/00** (2006.01); **F28D 1/053** (2006.01); **F01P 3/18** (2006.01)

CPC (source: EP US)

**F28D 1/0417** (2013.01 - EP US); **F28D 1/0443** (2013.01 - EP US); **F28D 1/05391** (2013.01 - EP US); **F28F 9/0204** (2013.01 - EP US);  
**F01P 2003/182** (2013.01 - EP US); **F01P 2003/185** (2013.01 - EP US); **F01P 2003/187** (2013.01 - EP US); **F28F 2009/0287** (2013.01 - EP US)

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

Designated extension state (EPC)

AL LT LV MK RO SI

DOCDB simple family (publication)

**WO 03046457 A1 20030605;** AU 2002356614 A1 20030610; BR 0214558 A 20041109; CN 100342195 C 20071010; CN 1618002 A 20050518;  
DE 10158436 A1 20030612; EP 1454106 A1 20040908; EP 1454106 B1 20160824; ES 2604580 T3 20170307; JP 2005510689 A 20050421;  
JP 4176642 B2 20081105; US 2005006067 A1 20050113; US 7111669 B2 20060926

DOCDB simple family (application)

**EP 0212877 W 20021116;** AU 2002356614 A 20021116; BR 0214558 A 20021116; CN 02827651 A 20021116; DE 10158436 A 20011129;  
EP 02803775 A 20021116; ES 02803775 T 20021116; JP 2003547856 A 20021116; US 49601304 A 20040628