

Title (en)  
Exhaust gas heat exchanger

Title (de)  
Abgaswärmetauscher

Title (fr)  
Échangeur thermique à gaz d'échappement

Publication  
**EP 2096294 A3 20091104 (EN)**

Application  
**EP 09008132 A 20020725**

Priority  
• EP 02751694 A 20020725  
• JP 2001224651 A 20010725  
• JP 2001350437 A 20011115

Abstract (en)  
[origin: EP1411315A1] An exhaust gas heat exchanger, comprising first wings (111c) projected in a first direction orthogonal to the circulating direction of EGR gas and second wings projected in a direction orthogonal to the circulating direction of the EGR gas and different from the first direction provided on the inside of an inner fin (111), wherein, since the EGR gas flows macroscopically in an exhaust gas passage (110a) while meandering in the direction (D1) orthogonal to the longitudinal direction (D0) of the exhaust gas passage after colliding with the wing.

IPC 8 full level  
**F02M 25/07** (2006.01); **F28D 1/06** (2006.01); **F28D 7/16** (2006.01); **F28F 3/02** (2006.01); **F28F 3/06** (2006.01); **F28F 3/08** (2006.01); **F28F 13/12** (2006.01); **F28F 19/01** (2006.01)

CPC (source: EP)  
**F02M 26/32** (2016.02); **F28D 7/16** (2013.01); **F28D 7/1684** (2013.01); **F28F 3/027** (2013.01); **F28F 13/12** (2013.01); **F28D 21/0003** (2013.01)

Citation (search report)  
• [Y] US 5803162 A 19980908 - KARBACH THOMAS [DE], et al  
• [Y] JP S6239183 U 19870309  
• [Y] DE 3739619 A1 19880407 - FIEBIG MARTIN PROF DR ING [DE]  
• [A] JP H08271167 A 19961018 - SHOWA ALUMINUM CORP  
• [A] EP 1072783 A1 20010131 - DENSO CORP [JP]  
• [A] US 4984626 A 19910115 - ESFORMES JACK L [US], et al  
• [A] US 3363682 A 19680116 - EDWARD HARTLEY DONALD  
• [A] US 5107922 A 19920428 - SO ALLAN K [CA]

Cited by  
CN110603420A; US2014151004A1; US9581107B2; US11262142B2; US11768040B2

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

DOCDB simple family (publication)  
**EP 1411315 A1 20040421**; **EP 1411315 A4 20091028**; **EP 1411315 B1 20150422**; EP 2096294 A2 20090902; EP 2096294 A3 20091104; EP 2096294 B1 20150708; JP 2003106785 A 20030409; JP 3912080 B2 20070509; WO 03010481 A1 20030206

DOCDB simple family (application)  
**EP 02751694 A 20020725**; EP 09008132 A 20020725; JP 0207566 W 20020725; JP 2001350437 A 20011115