

Title (en)  
Exhaust gas heat exchanger

Title (de)  
Abgaswärmetauscher

Title (fr)  
Échangeur thermique à gaz d'échappement

Publication  
**EP 2096294 A2 20090902 (EN)**

Application  
**EP 09008132 A 20020725**

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

Abstract (en)  
First wings (111c) projecting in a first direction perpendicular to the flow direction of EGR gas and second wings (111c) projecting in a second direction perpendicular to the flow direction of the EGR gas and different from the first direction are provided on an inner fin (111). From a macroscopic viewpoint, the EGR gas collides with the wings (111c) and passes through the exhaust gas passage (110a) while meandering in the direction (D1) perpendicular to a longitudinal direction (D0) of the exhaust gas passage. Accordingly, the tendency that the EGR gas passes only along the portion that has no projection (111c) and that has a small flow resistance does not occur. Therefore, from the viewpoint of the entirety of the exhaust gas passage (110a), it can be considered that the EGR gas substantially uniformly collides with the projections (111c) to thereby enhance the heat transmissibility and prevent the deposition of particulate matters.

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)

Cited by  
CN110603420A; US2014151004A1; US9581107B2; US11262142B2; US11768040B2

Designated contracting state (EPC)  
DE FR

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; EP 0207566 W 20020725; JP 2001350437 A 20011115