

Title (en)

Heat exchanger having flat tubes

Title (de)

Wärmetauscher, bestehend aus Flachrohren

Title (fr)

Echangeur de chaleur avec tubes plats

Publication

**EP 1626238 A1 20060215 (DE)**

Application

**EP 04019339 A 20040814**

Priority

EP 04019339 A 20040814

Abstract (en)

An automotive exhaust system has a heat exchanger for recovery of effluent heat. The heat exchanger has an array of flat tubes (3) forming ducts (10) for hot exhaust gases and separated by a further array of ducts for a coolant. The flat tubes have a by-pass allowing for the passage of hot exhaust gases. Some of the flat tubes (3) are sub-divided into a cooled zone (11) and a non-cooled zone (12). The bypass is located in the non-cooled zone. Each pair of flat tubes (3) is separated by a duct (10).

IPC 8 full level

**F28D 7/16** (2006.01); **F28D 9/00** (2006.01); **F28F 27/02** (2006.01)

CPC (source: EP US)

**F02M 26/12** (2016.02 - EP US); **F02M 26/26** (2016.02 - EP US); **F02M 26/32** (2016.02 - EP US); **F02M 26/57** (2016.02 - EP US);  
**F28D 7/1684** (2013.01 - EP US); **F28D 9/0037** (2013.01 - EP US); **F28D 9/0043** (2013.01 - EP US); **F28F 27/02** (2013.01 - EP US);  
**F28D 21/0003** (2013.01 - EP US); **F28D 2021/0082** (2013.01 - EP US); **F28F 2250/06** (2013.01 - EP US); **F28F 2250/104** (2013.01 - EP US);  
**Y10S 165/11** (2013.01 - EP US)

Citation (applicant)

- DE 10326638 A 20030611
- EP 04009615 A 20040423
- EP 0916837 A2 19990519 - BEHR GMBH & CO [DE], et al
- EP 0987427 A1 20000322 - MODINE MFG CO [US]
- DE 19733964 A1 19990211 - VOLKSWAGEN AG [DE]
- DE 19906401 C1 200000831 - RANCO INC OF DELAWARE WILMINGT [US]
- EP 0942156 A1 19990915 - ECIA EQUIP COMPOSANTS IND AUTO [FR]
- DE 10142539 A1 20030320 - BEHR GMBH & CO [DE]
- DE 19962863 A1 20010628 - BEHR GMBH & CO [DE]
- EP 0992756 B1 20021127 - MODINE MFG CO [US]
- EP 03007724 A 20030404

Citation (search report)

- [DA] EP 0992756 A2 20000412 - MODINE MFG CO [US]
- [DA] DE 10142539 A1 20030320 - BEHR GMBH & CO [DE]

Cited by

EP2936040A4; CN110081743A; EP1801407A4; US2021215072A1; US11603782B2; US8403031B2; WO2007104595A1; WO2008006604A1;  
US7631688B2; WO2008049761A1; EP1657512B2

Designated contracting state (EPC)

DE ES FR GB IT SE

DOCDB simple family (publication)

**EP 1626238 A1 20060215; EP 1626238 B1 20061220;** DE 502004002379 D1 20070201; ES 2279264 T3 20070816;  
US 2006032613 A1 20060216; US 7243707 B2 20070717

DOCDB simple family (application)

**EP 04019339 A 20040814;** DE 502004002379 T 20040814; ES 04019339 T 20040814; US 20178305 A 20050811