

Title (en)

Heat exchanger for an EGR system with an integrated by-pass duct.

Title (de)

Wärmeaustauscher für ein EGR System mit integrierter Bypassleitung

Title (fr)

Echangeur de chaleur pour un système EGR avec un conduit de dérivation intégré

Publication

**EP 1367253 B2 20100616 (EN)**

Application

**EP 03380127 A 20030528**

Priority

ES 200201218 A 20020528

Abstract (en)

[origin: EP1367253A1] A heat exchanger (1) for an EGR system with an integrated by-pass duct (9). A heat exchanger for recirculated exhaust gases of an internal combustion engine is proposed with an integrated by-pass duct (9) through which the exhaust gases can recirculate during the engine starting and/or in low temperature or load conditions. <??>The exchanger is formed by a cylindrical casing (2) inside of which the typical refrigeration chamber (3) in this type of devices is assembled, as well as the by-pass duct (9) . As a coupling means to the gas intake device of the EGR system, a flange (15,16) is used with a housing for the refrigerating tubes of the refrigeration chamber and another housing (22) for the by-pass duct; with a separation area (23) between said housings. <??>The by-pass duct can be a double-walled duct with an intermediate air chamber to prevent the cooling of the gases circulating through it. <IMAGE>

IPC 8 full level

**F02M 25/07** (2006.01); **F28D 7/16** (2006.01); **F28F 27/02** (2006.01)

CPC (source: EP ES)

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**F28D 21/0003** (2013.01 - EP)

Citation (opposition)

Opponent :

- DE 914450 C 19540701 - HANS WINDHOFF APP UND MASCHINE
- JP 2000291455 A 20001017 - ISUZU CERAMICS RES INST
- DE 4430648 A1 19960307 - FLUCORREX AG FLAWIL [CH]
- EP 0356648 B1 19920325
- US 4147141 A 19790403 - NAGANO TETSURO
- US 5203311 A 19930420 - HITOMI MITSUO [US], et al
- US 5617726 A 19970408 - SHERIDAN TODD A [US], et al
- WO 0210574 A1 20020207 - SERCK HEAT TRANSFER LTD [GB], et al
- EP 1288603 A2 20030305 - BEHR GMBH & CO [DE]
- EP 1293742 A2 20030319 - BEHR GMBH & CO [DE]
- EP 1277945 B1 20060913 - COOPER STANDARD AUTOMOTIVE D [DE]
- DE 19962863 A1 20010628 - BEHR GMBH & CO [DE]
- AT 2744 U2 19990325 - AVL LIST GMBH [AT]
- EP 0930429 A2 19990721 - STEYR NUTZFAHRZEUGE [AT]
- DE 19750588 A1 19990520 - BEHR GMBH & CO [DE], et al
- DE 19930416 A1 20010104 - IAV GMBH [DE]
- DE 19857577 A1 19990701 - AVL LIST GMBH [AT]
- EP 0942156 A1 19990915 - ECIA EQUIP COMPOSANTS IND AUTO [FR]
- US 1772067 A 19300805 - BOVEY SIDNEY J V
- US 6330919 B1 20011218 - MCGARIAN BRUCE [GB]
- US 5970960 A 19991026 - AZUMA SATOSHI [JP]
- US 4498524 A 19850212 - JACOBSEN ORVAL E [US]
- US 2670933 A 19540302 - BAY THOMAS J
- JP 2002030994 A 20020131 - TOYOTA IND CORP
- JP H11132112 A 19990518 - MITSUBISHI MOTORS CORP
- JP S6388212 A 19880419 - AISIN SEIKI
- JP H01173320 A 19890710 - SONY CORP
- JP 2000213426 A 20000802 - MITSUBISHI MOTORS CORP
- JP 2000220977 A 20000808 - USUI INTERNATIONAL INDUSTRY

Cited by

JP2015025604A; EP2743488A1; DE102005040612A1; CN104500282A; ES2321783A1; EP2295921A3; ES2322728A1; EP2944913A1;  
US2015330712A1; CN105089860A; EP2025913A1; US7721792B2; US9169756B2; DE102012019254A1; WO2008003486A1; WO2014090792A1;  
WO2012143462A3; WO2007060172A1; WO2005111385A3; US7931013B2; US8118082B2; US8464778B2; US9803544B2; EP2295921B1

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DE 60306717 T2 20070802; DE 60306717 T3 20110105; ES 2209618 A1 20040616; ES 2209618 B1 20050816; ES 2268306 T3 20070316;  
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