

Title (en)

Exhaust gas re-circulation device for an internal combustion engine

Title (de)

Abgasrückführvorrichtung für eine Brennkraftmaschine

Title (fr)

Dispositif de recirculation de gaz d'échappement pour un moteur à combustion interne

Publication

EP 1136688 A3 20020612 (EN)

Application

EP 01104948 A 20010228

Priority

LU 90551 A 20000322

Abstract (en)

[origin: EP1136688A2] An exhaust gas re-circulation device for an internal combustion engine comprises an intake air channel (2), an intake air control valve (18), an exhaust gas re-circulation valve (12) and an actuator (22), a first motion transmission mechanism between the actuator (22) and the exhaust gas re-circulation valve (12) and a second motion transmission mechanism between the actuator (22) and the intake air control valve (18). A first uncoupling means (26) is included in the first motion transmission mechanism and a first pull-back spring (34) biases the exhaust gas re-circulation valve (12) in a closed position. The device enables to control exhaust gas re-circulation rates by simultaneously driving the two valves in opposite senses and to obtain a smooth engine shut-off, by simultaneously closing the two valves. In a preferred embodiment, with a second uncoupling means (50) in the second motion transmission mechanism and a second pull-back spring (52) biasing the intake air control valve (18) in an open position, low exhaust gas re-circulation rates can be controlled with the intake air control valve (18) fully open. <IMAGE>

IPC 1-7

F02M 25/07

IPC 8 full level

F02M 25/07 (2006.01); **F02D 9/02** (2006.01)

CPC (source: EP)

F02M 26/21 (2016.02); **F02M 26/54** (2016.02); **F02M 26/60** (2016.02); **F02M 26/63** (2016.02); **F02M 26/64** (2016.02); **F02M 26/67** (2016.02); **F02D 2009/0276** (2013.01); **F02M 26/51** (2016.02)

Citation (search report)

- [DA] EP 0900930 A2 19990310 - GEN MOTORS CORP [US]
- [A] EP 0349729 A1 19900110 - PIERBURG GMBH [DE]
- [A] US 2741233 A 19560410 - MCKINLEY FRED E
- [A] US 4171689 A 19791023 - EHEIM FRANZ [DE]
- [A] DE 2315432 A1 19741010 - VOLKSWAGENWERK AG
- [A] EP 0780565 A2 19970625 - DENSO CORP [JP]
- [A] DE 3237337 A1 19830428 - LIST HANS [AT]
- [A] EP 0363021 A1 19900411 - FORD MOTOR CO [GB], et al

Cited by

JP2013515193A; FR3007071A1; FR2845732A1; FR3076863A1; FR2954408A1; CN102770655A; FR2954407A1; CN102822493A; JP2017009032A; US8862369B2; US9145854B2; WO2011076901A1; WO2011076876A1; JP2013515194A

Designated contracting state (EPC)

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

DOCDB simple family (publication)

EP 1136688 A2 20010926; **EP 1136688 A3 20020612**; **EP 1136688 B1 20030917**; DE 60100768 D1 20031023; DE 60100768 T2 20040805

DOCDB simple family (application)

EP 01104948 A 20010228; DE 60100768 T 20010228