

Title (en)
A method for thermally managing an internal combustion engine

Title (de)
Verfahren zur Wärmeverwaltung eines Verbrennungsmotors

Title (fr)
Procédé de gestion thermique d'un moteur à combustion interne

Publication
EP 2014889 A1 20090114 (EN)

Application
EP 07110663 A 20070620

Priority
EP 07110663 A 20070620

Abstract (en)
Methods for thermally managing an internal combustion engine (101, 401) during engine warm-up or during warmed-up conditions of the engine, which internal combustion engine (101, 401) comprises an engine block (101, 402) with a fluid coolant flow passage (104, 404) therein, a cylinder head (106, 406) secured to the engine block 102, 402) and provided with a fluid coolant flow passage (108, 408) therein, and a first fluid coolant circuit (109, 409) comprising the fluid coolant flow passages (104, 108, 404, 408), the internal combustion engine (101, 401) being provided with a second fluid coolant circuit (111) connected to the first fluid coolant circuit (109, 409) and comprising a coolant pump (112) for producing coolant flow in the first fluid coolant circuit, temperature sensing means (115) and valve means (117), which methods comprise the step of preventing (202) the coolant pump (112) from pumping the fluid coolant and thus providing a stagnation of the fluid coolant in the first fluid coolant circuit (109, 409), and/or the step of controlling (205, 209) the coolant pump (112) to produce such a coolant flow so that the temperature (T in) of the fluid coolant supplied to the first fluid coolant circuit (109, 409) from the second fluid coolant (111) circuit is at least 10 °C lower than the temperature (T out) of the fluid coolant discharged from the first fluid coolant circuit (109, 409) to the second fluid coolant circuit (111).

IPC 8 full level
F01P 3/02 (2006.01); **F01P 7/16** (2006.01); **F02N 19/10** (2010.01)

CPC (source: EP)
F01P 3/02 (2013.01); **F01P 7/162** (2013.01); **F01P 7/164** (2013.01); **F01P 2060/08** (2013.01)

Citation (search report)

- [X] EP 0557113 A2 19930825 - HONDA MOTOR CO LTD [JP]
- [XY] GB 2420847 A 20060607 - FORD GLOBAL TECH LLC [US]
- [YA] JP S56148677 A 19811118 - TOYOTA MOTOR CO LTD
- [X] JP 2006214280 A 20060817 - MAZDA MOTOR
- [A] FR 2571431 A1 19860411 - RENAULT VEHICULES IND [FR]
- [A] DE 19803884 A1 19990805 - BAYERISCHE MOTOREN WERKE AG [DE]
- [A] US 4559907 A 19851224 - HAYASHI YOSHIMASA [JP]
- [A] EP 0442489 A1 19910821 - NIPPON DENSO CO [JP]
- [A] EP 1239129 A2 20020911 - CALSONIC KANSEI CORP [JP]

Cited by
CN112127985A; US11549765B2; US9416720B2; US10119453B2; US10914227B2

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC MT NL PL PT RO SE SI SK TR

Designated extension state (EPC)
AL BA HR MK RS

DOCDB simple family (publication)
EP 2014889 A1 20090114; CN 101328830 A 20081224; JP 2009002346 A 20090108

DOCDB simple family (application)
EP 07110663 A 20070620; CN 200810124954 A 20080618; JP 2008162206 A 20080620