Title (en)

Cooling device for a liquid-cooled internal combustion engine of a motor vehicle

Title (de)

Kühlvorrichtung für einen flüssigkeitsgekühlten Verbrennungsmotor eines Kraftfahrzeuges

Title (fr)

Dispositif de refroidissement pour moteur à combustion interne refroidi par liquide d'un véhicule automobile

Publication

EP 0688942 B1 19981014 (DE)

Application

EP 95107227 A 19950512

Priority

DE 4422272 A 19940624

Abstract (en)

[origin: EP0688942A1] The IC engine (10) is cooled by a liquid circuit with a thermostat valve (16) to shunt all or part of the coolant flow and to direct a controlled amount through the radiator (11). The thermostat is electrically heated during a preset initial distance after cold starting when the coolant temperature is maintained below boiling to allow any air to be displaced and to prevent boiling over. The preset distance is computed from the vehicle speed and the elapsed time. The programmed distance is a function of the initial temperature of the coolant ie. the temperature rise required to reach the ultimate operating temperature. The radiator is linked to an expansion chamber (12). <IMAGE>

IPC 1-7

F01P 11/02; F01P 7/16

IPC 8 full level

F02D 45/00 (2006.01); **F01P 7/16** (2006.01); **F01P 11/02** (2006.01); **F01P 11/16** (2006.01); **F01P 11/20** (2006.01)

CPC (source: EP US)

F01P 7/167 (2013.01 - EP US); **F01P 11/0285** (2013.01 - EP US); F01P 11/0204 (2013.01 - EP US); F01P 2023/08 (2013.01 - EP US); F01P 2025/08 (2013.01 - EP US); F01P 2025/60 (2013.01 - EP US); F01P 2025/66 (2013.01 - EP US)

Cited by

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Designated contracting state (EPC)

DE ES FR GB IT SE

DOCDB simple family (publication)

EP 0688942 A1 19951227; **EP 0688942 B1 19981014**; DE 4422272 A1 19960104; DE 59503903 D1 19981119; ES 2123854 T3 19990116; JP 2642085 B2 19970820; JP H0814042 A 19960116; US 5572958 A 19961112

DOCDB simple family (application)

EP 95107227 A 19950512; DE 4422272 A 19940624; DE 59503903 T 19950512; ES 95107227 T 19950512; JP 15328995 A 19950620; US 49281195 A 19950620