

Title (en)

Internal combustion engine with separate circuits for coolant as well as lube oil and/or transmission oil

Title (de)

Brennkraftmaschine mit gesonderten Kreisläufen für Kühlwasser sowie Schmier- und/oder Getriebeöl

Title (fr)

Moteur a combustion interne avec des circuits séparées pour l'eau de refroidissement ainsi que des lubrifiant et/ou d'huile de transmission

Publication

EP 0870911 B1 20040602 (DE)

Application

EP 98103583 A 19980302

Priority

DE 19715324 A 19970412

Abstract (en)

[origin: EP0870911A2] The vehicle coolant system has a main exchanger (2) through which the main engine coolant flow and the oil coolant flow can pass. A thermostat (18,19) switches the input of the main coolant to the heat exchanger or from the heater system to the heat exchanger. The thermostat has a wax element. It operates the control valve (3) for the main heat exchanger to set up the optimum temperature difference during the cold starting phase and to regulate the relative inlet flow rates for cooler and hotter water i.e. direct from the engine or via the heating heat exchanger.

IPC 1-7

F01P 3/20; **F01P 7/16**

IPC 8 full level

F01M 5/00 (2006.01); **F01P 3/20** (2006.01); **F01P 7/16** (2006.01)

CPC (source: EP US)

F01M 5/007 (2013.01 - EP US); **F01P 3/20** (2013.01 - EP US); **F01P 7/16** (2013.01 - EP US); **F01P 2025/30** (2013.01 - EP US); **F01P 2060/04** (2013.01 - EP US); **F01P 2060/045** (2013.01 - EP US)

Cited by

EP1083308A3; EP3460213A4; FR3059610A1; ES2199017A1; EP3404229A1; FR3066535A1; WO2004022940A1; WO2011005553A1

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EP 0870911 A2 19981014; **EP 0870911 A3 19990707**; **EP 0870911 B1 20040602**; DE 19715324 A1 19981015; DE 59811491 D1 20040708; ES 2218724 T3 20041116; US 6053131 A 20000425

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