

Title (en)

Cooling device for engine and/or gearbox oil, in particular of a combustion engine

Title (de)

KÜHLVORRICHTUNG FÜR MOTOR- UND/ODER GETRIEBEÖL, INSBESONDERE EINER BRENNKRAFTMASCHINE

Title (fr)

Dispositif de refroidissement pour huile de moteur et/ou d'entraînement, notamment un moteur à combustion interne

Publication

EP 2252775 A1 20101124 (DE)

Application

EP 10705808 A 20100219

Priority

- EP 2010001053 W 20100219
- DE 102009010486 A 20090225
- EP 09014979 A 20091203
- EP 10705808 A 20100219

Abstract (en)

[origin: EP2224107A1] The device (1) has an oil pan (2) and an oil cooler formed by a plate heat exchanger (3) that includes multiple coolant-carrying plate intermediate spaces (5) and oil-carrying plate intermediate spaces (6). The coolant-carrying and oil-carrying plate intermediate spaces have an opening (24) formed in the oil pan permitting oil to directly flow out of the oil pan through the opening into the coolant-carrying and oil-carrying plate intermediate spaces. The plate heat exchanger is formed by a plate assembly that includes a set of flat plates (4).

IPC 8 full level

F01M 5/00 (2006.01); **F01M 11/00** (2006.01); **F01P 11/08** (2006.01)

CPC (source: EP US)

F01M 5/002 (2013.01 - EP US); **F01M 11/0004** (2013.01 - EP US); **F01P 11/08** (2013.01 - EP US); **F01M 2011/0025** (2013.01 - EP US); **Y10S 165/916** (2013.01 - EP US)

Citation (search report)

See references of WO 2010097183A1

Cited by

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Designated extension state (EPC)

AL BA RS

DOCDB simple family (publication)

EP 2224107 A1 20100901; **EP 2224107 B1 20130227**; BR PI1000033 A2 20180605; BR PI1000033 B1 20210112; BR PI1000440 A2 20110322; BR PI1000440 B1 20200526; CN 101813016 A 20100825; CN 101813016 B 20120905; CN 101952561 A 20110119; CN 101952561 B 20150429; DE 102009010486 A1 20100916; EP 2252775 A1 20101124; EP 2252775 B1 20140101; RU 2010106485 A 20110827; RU 2010132850 A 20120210; RU 2454551 C2 20120627; RU 2519117 C2 20140610; US 2010212867 A1 20100826; US 2010319638 A1 20101223; US 9016356 B2 20150428; WO 2010097183 A1 20100902

DOCDB simple family (application)

EP 09014979 A 20091203; BR PI1000033 A 20100219; BR PI1000440 A 20100224; CN 201010125802 A 20100225; CN 201080001006 A 20100219; DE 102009010486 A 20090225; EP 10705808 A 20100219; EP 2010001053 W 20100219; RU 2010106485 A 20100224; RU 2010132850 A 20100219; US 70677510 A 20100217; US 86832810 A 20100825