

Title (en)

Combustion engine with pump for transporting engine oil and method for heating the engine oil of such a combustion engine

Title (de)

Brennkraftmaschine mit Pumpe zur Förderung von Motoröl und Verfahren zur Erwärmung des Motoröls einer derartigen Brennkraftmaschine

Title (fr)

Moteur à combustion interne équipé d'une pompe d'alimentation en huile moteur et procédé de chauffage de l'huile moteur d'un tel moteur à combustion interne

Publication

EP 2305975 B1 20180912 (DE)

Application

EP 10154681 A 20100225

Priority

DE 102009045320 A 20091005

Abstract (en)

[origin: EP2305975A2] The engine has a cylinder block connected to a cylinder head (1) and serving as an upper crank case portion, for holding a crankshaft in two bearings. A pump feeds supplies engine oil (3) originating from an oil pan to a main oil gallery via a supply duct (2) from a channel and feeds engine oil to the bearings. The supply duct extends in upstream of the main oil gallery through the cylinder head. The oil pan is mounted on the upper crankcase portion and serves as a lower crankcase portion for collecting the engine oil. An independent claim is also included for a method for heating an engine oil by using an internal combustion engine.

IPC 8 full level

F01M 11/02 (2006.01); **F01M 5/00** (2006.01); **F01M 5/02** (2006.01); **F01M 9/10** (2006.01); **F01N 13/00** (2010.01); **F02B 39/00** (2006.01)

CPC (source: EP US)

F01L 1/022 (2013.01 - EP US); **F01L 1/053** (2013.01 - EP US); **F01M 5/001** (2013.01 - EP US); **F01M 5/02** (2013.01 - EP US); **F01M 9/102** (2013.01 - EP US); **F01M 11/02** (2013.01 - EP US); **F02B 39/005** (2013.01 - EP US); **F02B 39/14** (2013.01 - EP US); **F02F 1/243** (2013.01 - EP US); **F02F 1/40** (2013.01 - EP US); **F01L 2001/0476** (2013.01 - EP US); **F01L 2001/0537** (2013.01 - EP US); **F01L 2810/02** (2013.01 - EP US)

Citation (examination)

JP H0640305 U 19940527

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

DOCDB simple family (publication)

EP 2305975 A2 20110406; **EP 2305975 A3 20110511**; **EP 2305975 B1 20180912**; CN 201924987 U 20110810; DE 102009045320 A1 20110428; US 2011079187 A1 20110407; US 7992535 B2 20110809

DOCDB simple family (application)

EP 10154681 A 20100225; CN 201020554394 U 20101008; DE 102009045320 A 20091005; US 89218410 A 20100928