

Title (en)

AN INTERNAL COMBUSTION ENGINE AND A METHOD OF OPERATING THE INTERNAL COMBUSTION ENGINE

Title (de)

VERBRENNUNGSMOTOR UND BETRIEBSVERFAHREN FÜR DEN VERBRENNUNGSMOTOR

Title (fr)

MOTEUR À COMBUSTION INTERNE ET PROCÉDÉ DE FONCTIONNEMENT DU MOTEUR À COMBUSTION INTERNE

Publication

EP 4086443 A1 20221109 (EN)

Application

EP 21172304 A 20210505

Priority

EP 21172304 A 20210505

Abstract (en)

An internal combustion engine (1) comprises an oil pump (35), an oil line (22) being fluidly connected to the oil pump (35) and engine parts to be lubricated and a hydraulic actuator (18) including an actuator housing which accommodates a movable plunger (19) and an oil chamber (20). The plunger (19) is drivably coupled to an adjusting element (17) for adjusting an engine operating mode. The engine (1) is provided with a control system (CS) including a first control mode for moving the plunger (19) in a first direction (X), a second control mode for moving the plunger (19) in a second direction (Y) which is opposite to the first direction (X) and a third control mode for maintaining the plunger (19) at a fixed position within the actuator housing. The engine (1) is provided with a first passage (27) in the oil line (22) and a second passage (28) between the oil line (22) at an upstream side of the first passage (27) and the oil chamber (20). The first passage (27) is closable by the control system (CS), wherein the control system (CS) is configured such that under operating conditions in the first control mode the first passage (27) is closed such that the oil pump (35) communicates with the oil chamber (20) only.

IPC 8 full level

F02B 75/04 (2006.01); **F01M 11/02** (2006.01); **F02D 15/02** (2006.01)

CPC (source: EP)

F01B 31/14 (2013.01); **F01M 11/02** (2013.01); **F02B 75/048** (2013.01); **F02D 15/02** (2013.01)

Citation (applicant)

- WO 2015121254 A1 20150820 - GOMECSYS BV [NL]
- WO 2013110700 A1 20130801 - SLEPER JOANNES JACOBUS JOSEPHUS [NL], et al

Citation (search report)

- [XDY] WO 2015121254 A1 20150820 - GOMECSYS BV [NL]
- [XY] EP 1431559 A2 20040623 - NISSAN MOTOR [JP]
- [X] EP 1418322 A2 20040512 - NISSAN MOTOR [JP]

Designated contracting state (EPC)

AL 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 RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

EP 4086443 A1 20221109; WO 2022233690 A1 20221110

DOCDB simple family (application)

EP 21172304 A 20210505; EP 2022061294 W 20220428