

Title (en)

An internal combustion engine including variable compression ratio and a method of operating the engine

Title (de)

Verbrennungsmotor mit variablem Verdichtungsverhältnis und Betriebsverfahren des Motors

Title (fr)

Moteur à combustion interne comprenant un rapport de compression variable et procédé de fonctionnement du moteur

Publication

EP 2905449 B1 20180509 (EN)

Application

EP 14154745 A 20140211

Priority

EP 14154745 A 20140211

Abstract (en)

[origin: EP2905449A1] An internal combustion engine (1) including variable compression ratio comprises a crankcase (2) and a crankshaft (3) including a crankshaft axis (4). The crankshaft (3) has at least a central main portion (5), a crankpin (6) and a crankshaft web (7) located between the central main portion (5) and the crankpin (6). The crankshaft (3) is supported by the crankcase (2) and rotatable with respect thereto about the crankshaft axis (4). The engine (1) comprises at least a connecting rod (11) including a big end (10) and a small end (12), a piston (13) which is rotatably connected to the small end (12) and a crank member (8) that is rotatably mounted on the crankpin (6), and comprises at least a bearing portion (9) which is eccentrically disposed with respect to the crankpin (6). The bearing portion (9) has an outer circumferential wall which bears the big end (10) of the connecting rod (11) such that the connecting rod (11) is rotatably mounted on the bearing portion (9) of the crank member (8) via the big end (10). The engine (1) comprises a driving mechanism for driving the crank member (8) at half speed of the crankshaft (3) as seen from the crankcase (2). The driving mechanism comprises a control member (17) for varying the compression ratio, which is rotatable with respect to the crankcase (2) and drivably coupled to the crank member (8), but has a fixed position with respect to the crankcase (2) under operating conditions at fixed compression ratio. The rotational position of the control member (17) with respect to the crankcase (2) is adjustable by means of a hydraulic actuator (18), which comprises a hydraulic piston (20) that is drivably connected to the control member (17), a working chamber (21), a pump (23) and an oil supply line (25) through which the pump (23) and the working chamber (21) communicate.

IPC 8 full level

F02B 75/04 (2006.01)

CPC (source: EP)

F02B 75/048 (2013.01)

Cited by

DE102021103790A1; US10100726B2; WO2022187881A1; EP2907986A1

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

DOCDB simple family (publication)

EP 2905449 A1 20150812; EP 2905449 B1 20180509; WO 2015121254 A1 20150820

DOCDB simple family (application)

EP 14154745 A 20140211; EP 2015052760 W 20150210