

Title (en)

An internal combustion engine including variable compression ratio

Title (de)

Verbrennungsmotor mit variabler Verdichtung

Title (fr)

Moteur à combustion interne comprenant un rapport de compression variable

Publication

EP 2902603 A1 20150805 (EN)

Application

EP 14153494 A 20140131

Priority

EP 14153494 A 20140131

Abstract (en)

An internal combustion engine (1) including variable compression ratio comprises a crankcase (3) and a crankshaft (4) including a crankshaft axis (5) and at least a central main portion (6), a crankpin (7) and a crankshaft web (8) located between the central main portion (6) and the crankpin (7). The crankshaft (4) is supported by the crankcase (3) and rotatable with respect thereto about the crankshaft axis (5). The engine has at least a connecting rod including a big end and a small end, a piston which is rotatably connected to the small end and a crank member (9) which is rotatably mounted on the crankpin (7). The crank member comprises at least a bearing portion which is eccentrically disposed with respect to the crankpin (7) and has an outer circumferential wall which bears the big end of the connecting rod such that the connecting rod is rotatably mounted on the bearing portion of the crank member (9) via the big end. The engine also comprises a driving mechanism (2) for rotating the crank member (9) at a rotation frequency with respect to the crankcase (3) which is substantially half of that of the crankshaft (4) as seen from the crankcase (3). The driving mechanism (2) comprises a drive shaft (10) that extends concentrically through the central main portion (6). The drive shaft (10) is drivably coupled to the crank member (9) via a transmission (11) at a side of the crankshaft web (8) where the crankpin (7) is located. At the opposite side of the crankshaft web (8) the drive shaft (10) is drivably coupled to the crankshaft (4) via a lockable coupling (22) for adjusting the mutual rotational position of the crank member (9) and the crankshaft (4) at any rotational position of the crank member (9) with respect to the crankcase (3). The engine includes a controller for controlling the coupling (22) such that in unlocked condition of the coupling (22) said mutual rotational position is adjustable.

IPC 8 full level

F02B 75/04 (2006.01)

CPC (source: EP)

F01B 9/042 (2013.01); **F02B 75/048** (2013.01)

Citation (applicant)

WO 2009018863 A1 20090212 - GOMECSYS BV [NL], et al

Citation (search report)

- [X] EP 2025893 A1 20090218 - GOMECSYS BV [NL]
- [A] WO 9627079 A1 19960906 - LEITHINGER SIEGFRIED FRANZ [CH]
- [A] WO 2013160501 A1 20131031 - GARCIA SANCHEZ EDUARDO [ES]
- [A] EP 0184042 A2 19860611 - POLITECHNIKA WARSZAWSKA [PL]
- [A] EP 2620614 A1 20130731 - SLEPER JOHANNES JACOBUS JOSEPHUS [NL], et al

Cited by

CN112639266A; FR3052188A1; US2018274458A1; US10378459B2; FR3058468A1; FR3049998A1; FR3052495A1; CN109312672A; FR3050234A1; WO2017207903A1; WO2020099056A1; WO2017211727A1; WO2017182731A1; US11401859B2; DE102018128524B4

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

DOCDB simple family (publication)

EP 2902603 A1 20150805; WO 2015114001 A1 20150806

DOCDB simple family (application)

EP 14153494 A 20140131; EP 2015051698 W 20150128