

Title (en)

OPERATIONAL METHOD FOR AN INTERNAL COMBUSTION ENGINE HAVING LOW NOX COMBUSTION

Title (de)

BETRIEBSVERFAHREN FÜR EINE BRENNKRAFTMASCHINE MIT NOX-ARMER VERBRENNUNG

Title (fr)

PROCÉDÉ POUR FAIRE FONCTIONNER UN MOTEUR À COMBUSTION INTERNE AVEC UNE COMBUSTION PAUVRE EN NOX (NAV)

Publication

**EP 2635786 A2 20130911 (DE)**

Application

**EP 11776695 A 20111007**

Priority

- DE 102011015627 A 20110331
- DE 102010047797 A 20101007
- EP 2011005000 W 20111007

Abstract (en)

[origin: WO2012045460A2] The invention relates to an operational method for, in particular, a direct injection internal combustion engine having a plurality of combustion chambers, in particular for a direct- injection spark-ignition engine, for example, a motor vehicle with at least partial low NOx-combustion (NAV) and several operational sub-methods. Said method alternates between a charge compression combustion sub-method with pure charge compression combustion (RZV) and a low NOx operation sub-method. In the event of the low NOx- combustion sub-method being ignited at an ignition time point (ZZP), a predominately homogeneous, lean fuel/exhaust gas/air mixture having a combustion air ratio  $\phi = 1$  is spark ignited in the respective combustion chamber by means of an ignition device and a flame front combustion (FFV) that has been ignited by the spark ignition, are converted into a charge compression combustion (RZV). By combining the low NOx- sub-method with the charge compression combustion sub-method, the engine load range, in which charge compression combustion (RZV) can be carried out, is increased, and consequently, the fuel consumption and the NOx-emission values are also reduced in said widened engine load range.

IPC 8 full level

**F02D 41/30** (2006.01); **F02D 1/12** (2006.01)

CPC (source: EP US)

**F02D 41/3041** (2013.01 - EP US); **F02D 41/3064** (2013.01 - EP US); **F02P 9/00** (2013.01 - US); **F02D 41/005** (2013.01 - EP US); **F02D 41/0057** (2013.01 - EP US); **F02D 41/006** (2013.01 - EP US); **F02D 41/402** (2013.01 - EP US); **Y02T 10/12** (2013.01 - EP US)

Citation (search report)

See references of WO 2012045460A2

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)

**DE 102011015627 A1 20120412**; **DE 102011015627 B4 20230202**; EP 2635786 A2 20130911; JP 2013538984 A 20131017; US 2013327293 A1 20131212; WO 2012045460 A2 20120412; WO 2012045460 A3 20120823

DOCDB simple family (application)

**DE 102011015627 A 20110331**; EP 11776695 A 20111007; EP 2011005000 W 20111007; JP 2013532075 A 20111007; US 201313858014 A 20130406