

Title (en)  
ENGINE

Title (de)  
MOTOR

Title (fr)  
MOTEUR

Publication  
**EP 3130778 B1 20230802 (EN)**

Application  
**EP 16175283 A 20131030**

Priority  
• JP 2013136581 A 20130628  
• EP 13190931 A 20131030

Abstract (en)  
[origin: EP2860381A1] A first head section is arranged between a first cylinder side wall and a second head section in the axial direction of a cam shaft. The second head section is arranged between a second cylinder side wall and the first head section in the axial direction of the cam shaft. The distance between the first cylinder side wall and the first head section in the axial direction of the cam shaft is shorter than the distance between the second cylinder side wall and the second head section in the axial direction of the cam shaft. The distance to the first head section in a cylinder axial direction from a third virtual plane, which includes the axis of a crank shaft and is perpendicular to a cylinder axis, is shorter than the distance to the second head section in the cylinder axial direction from the third virtual plane.

IPC 8 full level  
**F02B 1/00** (2006.01); **F02F 7/00** (2006.01)

CPC (source: EP)  
**F01L 1/267** (2013.01); **F01L 13/0036** (2013.01); **F02B 75/16** (2013.01); **F02F 7/006** (2013.01); **F01L 2001/0535** (2013.01); **F02F 2007/0063** (2013.01)

Citation (examination)  
• JP H03217646 A 19910925 - NISSAN MOTOR  
• JP S608450 A 19850117 - HINO MOTORS LTD

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 2860381 A1 20150415; EP 2860381 B1 20170531**; BR 102013026549 A2 20171107; BR 102013026549 B1 20220208; CN 104251164 A 20141231; CN 104251164 B 20170118; CO 7260134 A1 20150508; EP 3130778 A1 20170215; EP 3130778 B1 20230802; ES 2628364 T3 20170802; JP 2015010552 A 20150119; JP 6105410 B2 20170329; PH 12013000317 A1 20150427; PH 12013000317 B1 20150427; TW 201500636 A 20150101; TW 201706495 A 20170216; TW I558909 B 20161121; TW I605189 B 20171111

DOCDB simple family (application)  
**EP 13190931 A 20131030**; BR 102013026549 A 20131015; CN 201310515889 A 20131028; CO 13258873 A 20131031; EP 16175283 A 20131030; ES 13190931 T 20131030; JP 2013136581 A 20130628; PH 12013000317 A 20131021; TW 102137375 A 20131016; TW 105131392 A 20131016