

Title (en)

CAMSHAFT WITH VARIABLE VALVE OPENING DURATION

Title (de)

NOCKENWELLE MIT VARIIERBARER VENTILÖFFNUNGSDAUER

Title (fr)

ARBRE À CAMES À DURÉE VARIABLE D'OUVERTURE DE SOUPAE

Publication

**EP 2478191 B1 20150617 (DE)**

Application

**EP 10747593 A 20100824**

Priority

- DE 102009041426 A 20090916
- EP 2010005181 W 20100824

Abstract (en)

[origin: WO2011032632A1] The invention relates to a camshaft for an internal combustion engine, comprising a hollow outer shaft (2) and an inner shaft (4) which is concentrically mounted inside the outer shaft (2) to be rotatable about an angle (a) and a multi-part cam element (6) having a first cam section (61) that is mounted on the outer shaft (2) in a rotationally fixed manner and a second cam section (62) that is connected to the inner shaft (4) in a rotationally fixed manner and rotationally mounted on the outer shaft (2). The two cam sections (61, 62) have different cam contours, the relative movement of the two cam sections (61, 62) in opposite directions allowing the resulting cam contour of the cam element (6) interacting with a cam follower to be changed to adjust the variable valve opening period. According to the invention, the two cam sections (61, 62) have different maximum lifts (Hmax\_61, Hmax\_62), the cam top section (62a) of the cam section (62) having the smaller maximum lift (Hmax\_62) being substantially formed by an annular sector (K).

IPC 8 full level

**F01L 1/047** (2006.01)

CPC (source: EP US)

**F01L 1/08** (2013.01 - EP US); **F01L 1/34413** (2013.01 - EP US); **F01L 13/0036** (2013.01 - EP US); **F01L 13/0047** (2013.01 - EP US); **F01L 13/0057** (2013.01 - EP US); **F01L 2001/0473** (2013.01 - EP US); **F01L 2013/0089** (2013.01 - EP US)

Citation (examination)

- AT 8187 U1 20060315 - AVL LIST GMBH [AT]
- DE 10038916 A1 20020221 - FEV MOTORENTECH GMBH [DE]

Citation (opposition)

- Opponent : MAHLE International GmbH,
- DE 102005031241 A1 20070104 - FEV MOTORENTECH GMBH [DE]
- EP 1318280 A2 20030611 - DELPHI TECH INC [US]
- DE 3831642 C2 19910321
- DD 152832 A5 19811209 - SEMT

Cited by

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