

Title (en)

Device for altering the valve timing in an internal combustion engine

Title (de)

Vorrichtung zur Veränderung der Steuerzeiten von Gaswechselventilen einer Brennkraftmaschine

Title (fr)

Dispositif de variation de calage des soupapes de moteur à combustion interne

Publication

EP 1653056 B1 20131016 (DE)

Application

EP 05018649 A 20050827

Priority

DE 102004049124 A 20041007

Abstract (en)

[origin: EP1653056A2] The device for the changing of the timing of gas exchange valves of an internal combustion engine comprises a hydraulic adjusting device with two opposite acting pressure chambers, and a control valve (103) consisting of a valve component (114) and operating unit by which the control valve can be brought into several control positions. In a first position of the control valve which corresponds to the control position of a non-activated operating unit, neither the first working connection (A) nor the second working connection (B) of the control valve communicates with its feed connection (P).

IPC 8 full level

F01L 1/344 (2006.01)

CPC (source: EP KR)

F01L 1/34 (2013.01 - KR); **F01L 1/344** (2013.01 - KR); **F01L 1/3442** (2013.01 - EP); **F02D 13/02** (2013.01 - KR); **F01L 2001/34426** (2013.01 - EP); **F01L 2001/3443** (2013.01 - EP); **F01L 2001/34463** (2013.01 - EP); **F01L 2001/34466** (2013.01 - EP); **F01L 2001/34469** (2013.01 - EP); **F01L 2303/00** (2020.05 - EP); **F01L 2800/00** (2013.01 - EP); **F01L 2800/01** (2013.01 - EP); **F01L 2800/03** (2013.01 - EP)

Cited by

US9410453B2; US9840943B2

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)

EP 1653056 A2 20060503; **EP 1653056 A3 20090527**; **EP 1653056 B1 20131016**; CN 1757884 A 20060412; CN 1757884 B 20111221; DE 102004049124 A1 20060420; JP 2006105154 A 20060420; KR 101299749 B1 20130823; KR 20060052053 A 20060519

DOCDB simple family (application)

EP 05018649 A 20050827; CN 200510113433 A 20051008; DE 102004049124 A 20041007; JP 2005293641 A 20051006; KR 20050093650 A 20051006