

Title (en)

ELECTROMAGNETIC ACTUATOR WITH TWO ELECTROMAGNETS COMPRISING MAGNETS HAVING DIFFERENT FORCES AND METHOD OF CONTROLLING AN INTERNAL COMBUSTION ENGINE VALVE USING SAME

Title (de)

ELEKTROMAGNETISCHER AKTOR MIT ZWEI ELEKTROMAGNETEN MIT UNTERSCHIEDLICH STARKEN MAGNETEN UND VERFAHREN ZUR STEUERUNG EINES VERBRENNUNGSMOTORVENTILS DAMIT

Title (fr)

ACTIONNEUR ELECTROMAGNETIQUE AVEC DEUX ELECTROAIMANTS COMPORTANT DES AIMANTS DE FORCES DIFFERENTES, ET PROCEDE DE GESTION D'UNE SOUPEPE DE MOTEUR A COMBUSTION INTERNE FAISANT APPLICATION.

Publication

**EP 1955338 B1 20150701 (FR)**

Application

**EP 06841832 A 20061130**

Priority

- FR 2006002622 W 20061130
- FR 0512235 A 20051202

Abstract (en)

[origin: WO2007063222A1] The invention relates to an electromagnetic actuator comprising: an actuation member which is associated with a vane (4) and which can move between two end positions under the action of an elastic member; and two electromagnets which are designed to attract the vane to one of the end positions respectively, each electromagnet comprising a coil (3), a core (2) which is designed to channel the magnetic flux such that it is contained within the vane and one or more permanent magnets (13) which are associated with the core. According to the invention, the permanent magnet(s) (13) of one of the electromagnets (1) are designed to exert a force on the vane (4) that is sufficient to retain the vane in the end position, while the permanent magnet(s) (113) of the other electromagnet (101) are designed to exert a force on the vane (4) that is not sufficient to retain the vane in the end position.

IPC 8 full level

**H01F 7/16** (2006.01); **F01L 9/20** (2021.01)

CPC (source: EP KR US)

**F01L 9/20** (2021.01 - EP US); **H01F 7/122** (2013.01 - KR); **H01F 7/1646** (2013.01 - EP US); **F01L 2009/2148** (2021.01 - EP US); **H01F 2007/1692** (2013.01 - EP US)

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)

**WO 2007063222 A1 20070607**; EP 1955338 A1 20080813; EP 1955338 B1 20150701; FR 2894377 A1 20070608; FR 2894377 B1 20080516; JP 2009517995 A 20090430; JP 5208760 B2 20130612; KR 101291416 B1 20130807; KR 20080073696 A 20080811; US 2008276889 A1 20081113; US 7946261 B2 20110524

DOCDB simple family (application)

**FR 2006002622 W 20061130**; EP 06841832 A 20061130; FR 0512235 A 20051202; JP 2008542797 A 20061130; KR 20087003357 A 20061130; US 9176606 A 20061130