

Title (en)

ELECTROMAGNETIC ACTUATING APPRATUS AND CAMSHAFT ADJUSTMENT DEVICE

Title (de)

ELEKTROMAGNETISCHE STELLVORRICHTUNG SOWIE NOCKENWELLENVERSTELLVORRICHTUNG

Title (fr)

DISPOSITIF DE POSITIONNEMENT ÉLECTROMAGNÉTIQUE ET DISPOSITIF DE RÉGLAGE D'ARBRE À CAMES

Publication

EP 2724354 A1 20140430 (DE)

Application

EP 12733618 A 20120615

Priority

- DE 102011051268 A 20110622
- EP 2012061437 W 20120615

Abstract (en)

[origin: WO2012175421A1] The invention relates to an electromagnetic actuating device (1), in particular for a camshaft adjuster of an internal combustion engine of a motor vehicle, comprising an elongate actuating element (2) that at the end forms an engagement region, can be moved by the force of a coil unit (29) provided in a stationary manner and preferably has a cylindrical enveloping contour in sections. Said control element penetrates a cut-out (8) in permanent magnet means (6) arranged on the jacket side, the means being designed for the cooperation with a stationary core region (5) enclosing a core body (15), and with a contact surface (11) on the end face side and control element side is seated against a contact surface (10) on the core region side in a switch position. According to the invention, the contact surface (11) on the core region side is formed at least in some sections by a contact element (16) that is fixed in the core body (15) and composed of a material of higher hardness than the material of the core body (15).

IPC 8 full level

F01L 13/00 (2006.01); **F01L 1/34** (2006.01); **H01F 7/16** (2006.01)

CPC (source: EP US)

F01L 1/34 (2013.01 - EP US); **F01L 1/46** (2013.01 - EP US); **F01L 13/0036** (2013.01 - EP US); **F01L 25/08** (2013.01 - EP US); **H01F 7/1646** (2013.01 - EP US); **H01H 50/54** (2013.01 - US); **F01L 2009/2128** (2021.01 - EP US); **F01L 2013/0052** (2013.01 - EP US)

Citation (search report)

See references of WO 2012175421A1

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 102011051268 A1 20121227; **DE 102011051268 B4 20140306**; CN 103620708 A 20140305; CN 103620708 B 20160921; EP 2724354 A1 20140430; EP 2724354 B1 20140924; US 2014137820 A1 20140522; US 9021995 B2 20150505; WO 2012175421 A1 20121227

DOCDB simple family (application)

DE 102011051268 A 20110622; CN 201280030734 A 20120615; EP 12733618 A 20120615; EP 2012061437 W 20120615; US 201214127993 A 20120615