

Title (en)
CAMSHAFT ADJUSTMENT DEVICE

Title (de)
NOCKENWELLENVERSTELLVORRICHTUNG

Title (fr)
DISPOSITIF DE RÉGLAGE D'ARBRE À CAMES

Publication
EP 2715078 B1 20150107 (DE)

Application
EP 12719612 A 20120418

Priority
• DE 102011050730 A 20110530
• EP 2012057039 W 20120418

Abstract (en)
[origin: WO2012163591A1] The invention relates to a camshaft adjustment device (3) which comprises a camshaft rotational axis (D) and an electromagnetic multi-tappet actuator device (4) that has at least two electromagnetic drive units, these drive units being able to be actuated such that an actuation force is exerted onto a corresponding number of elongated tappet units (9, 10, 11), mounted so as to be axially parallel to one another and each defining a tappet longitudinal central-axis (A1) perpendicular to said camshaft rotational axis (D), in order to have said tappet units meshing with shifting grooves (8) of an adjustable cam part (7). Each of the drive units forms a contact surface at a contact end that faces one of the respectively associated tappet units, which contact surface can be moved in a drive unit actuation direction, and a contact-side end-face of one of the respective tappet units (9, 10, 11), which end-face faces away from the shifting groove (8) associated therewith, interacts with said contact surface. According to the invention, at least one of the tappet units (9, 10, 11) is arranged relative to the camshaft rotational axis (D) such that the tappet longitudinal central-axis thereof, which runs parallel to the tappet longitudinal central-axes (A1, A2, A3) of the at least one other tappet unit, is disposed at a distance from the camshaft rotational axis (D) in a plane (E) which extends perpendicularly to said tappet longitudinal central-axes (9, 10, 11) and which receives the camshaft rotational axis (D).

IPC 8 full level
F01L 1/344 (2006.01); **F01L 13/00** (2006.01)

CPC (source: EP US)
F01L 1/344 (2013.01 - US); **F01L 13/0036** (2013.01 - EP US); **F01L 2013/0052** (2013.01 - EP US); **F01L 2013/101** (2013.01 - EP US)

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 102011050730 A1 20121206; CN 103597175 A 20140219; CN 103597175 B 20160907; EP 2715078 A1 20140409;
EP 2715078 B1 20150107; PL 2715078 T3 20150430; US 2014190430 A1 20140710; US 8939119 B2 20150127; WO 2012163591 A1 20121206

DOCDB simple family (application)
DE 102011050730 A 20110530; CN 201280027089 A 20120418; EP 12719612 A 20120418; EP 2012057039 W 20120418;
PL 12719612 T 20120418; US 201214122389 A 20120418