

Title (en)

CYLINDER HEAD ARRANGEMENT FOR VARIABLE VALVE ACTUATION ROCKER ARM ASSEMBLIES

Title (de)

ZYLINDERKOPFANORDNUNG FÜR KIPPHEBELANORDNUNGEN ZUR VARIABLEN VENTILBETÄTIGUNG

Title (fr)

AGENCEMENT DE TÊTES DE CYLINDRES POUR RAMPES DE CULBUTEURS À ACTIONNEMENT DE SOUPAPE VARIABLE

Publication

EP 2984325 A4 20170125 (EN)

Application

EP 14782089 A 20140408

Priority

- US 201361811662 P 20130412
- US 201361812707 P 20130416
- US 201313868025 A 20130422
- US 201313868035 A 20130422
- US 201313868054 A 20130422
- US 201313868061 A 20130422
- US 201313868067 A 20130422
- US 201313868068 A 20130422
- US 2013037667 W 20130422
- US 2013037665 W 20130422
- US 201313868045 A 20130422
- US 201313873797 A 20130430
- US 2013038896 W 20130430
- US 201313873774 A 20130430
- US 201314028337 A 20130916
- US 2013068503 W 20131105
- US 201361920297 P 20131223
- US 201414188339 A 20140224
- US 2014019870 W 20140303
- US 2014033395 W 20140408

Abstract (en)

[origin: WO2014168988A1] A novel cylinder head arrangement is described for an in-line four cylinder or eight cylinder engine with each head having two end cylinders and two middle cylinders. A modified arrangement allows additional space for the installation of wider rocker arm assemblies used for variable valve lift (VVL), cylinder deactivation (CDA) and other types of variable valve actuation (VVA) in these existing cylinder head designs. In the first embodiment, cam towers of conventional designs adjacent the end two cylinders are not used. At least one end support is used which may be an outboard bearing on a camshaft for each end. The wider rocker assemblies may then be installed. In an alternative embodiment, the cam towers adjacent the inner two cylinders are eliminated and a single camshaft support piece with a support bearing is installed between the inner cylinders to provide support for the camshafts. The wider rocker assemblies may then be installed on at least one of the middle cylinders. The system also includes a novel oil control valve that operates latches in switching rocker arm assemblies.

IPC 8 full level

F01L 1/053 (2006.01); **F01L 1/18** (2006.01); **F01L 13/00** (2006.01); **F02F 1/42** (2006.01)

CPC (source: EP)

F01L 1/185 (2013.01); **F01L 13/0005** (2013.01); **F01L 13/0036** (2013.01); **F01L 2001/0476** (2013.01); **F01L 2001/0537** (2013.01); **F01L 2001/186** (2013.01); **F01L 2001/34423** (2013.01); **F01L 2305/00** (2020.05)

Citation (search report)

- [X] GB 171409 A 19220831 - CHILDE HAROLD WILLS
- [X] JP 2010059821 A 20100318 - JTEKT CORP
- [X] US 2009084340 A1 20090402 - KOMURA KEISUKE [JP], et al
- [X] DE 102008062187 A1 20100617 - VOLKSWAGEN AG [DE]
- See references of WO 2014168988A1

Cited by

CN114837767A; US10329970B2; US10180087B2; US10415439B2; US10570786B2; US11396830B2; US10890086B2; US9869211B2; US11085338B2

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)

WO 2014168988 A1 20141016; WO 2014168988 A9 20150806; CN 104153906 A 20141119; CN 104153906 B 20181106; CN 109306917 A 20190205; CN 109306917 B 20210813; CN 204152661 U 20150211; EP 2984325 A1 20160217; EP 2984325 A4 20170125; EP 2984325 B1 20190605; EP 3502451 A1 20190626; EP 3502451 B1 20211110

DOCDB simple family (application)

US 2014033395 W 20140408; CN 201410226228 A 20140414; CN 201420273005 U 20140414; CN 201811196426 A 20140414; EP 14782089 A 20140408; EP 19155546 A 20140408