

Title (en)
DIRECT-ACTION VALVE LIFTER FOR INTERNAL COMBUSTION ENGINE

Title (de)
DIREKT WIRKENDER VENTILSTÖSSEL FÜR VERBRENNUNGSMOTOR

Title (fr)
POUSOIR DE SOUPAPE À ACTION DIRECTE POUR MOTEUR À COMBUSTION INTERNE

Publication
EP 1911940 A4 20100721 (EN)

Application
EP 05780849 A 20050826

Priority
• JP 2005015520 W 20050826
• JP 2005222462 A 20050801

Abstract (en)
[origin: EP1911940A1] OBJECTS: To provide a direct-acting type valve lifter that is simple in structure, involves a small number of components, and is capable of switching its valve lift between a high and a low lift. MEANS FOR CARRYING OUT THE INVENTION: The valve lifter is mounted between a cam unit (20) and a valve stem (15). The cam unit (20) comprises a high-lift cam (22) and a low-lift cam (24) integrated to the high-lift cam. The valve lifter (30) is equipped with a side lifter (32) for slidably lifting the low-lift cams (24), a center lifter (40) for slidably lifting the high-lift cam, and hydraulic means (oil groove) (11b) for sliding the center lifter (40) so as to switch the valve lift in two levels, i.e. to switch between a high and a low lift. A cylindrical body of the valve lifter is provided on the top end thereof with a slit (33) for allowing the high-lift cam to freely rotate therein, and with sliding surfaces (32a) serving as a side lifter (32) to be in sliding contact with the low lift cam. Formed in the body of the valve lifter (lifter body) is a through-hole 34 perpendicular to the slit (33), which accommodate therein the piston type center lifter (40) such that the center lifter (40) can be slidably moved by a hydraulic pressure. When the center lifter (40) is located at a position aligned with the slit (33), the cam unit assumes a high lift mode. On the other hand, at a position well offset from the slit (33), the cam unit assumes a low lift mode. Thus, the valve lifter of the invention is composed of a small number of components, so that dimension tolerance demanded for the respective components are much relaxed, which permits easy assembly of the parts.

IPC 8 full level
F01L 13/00 (2006.01)

CPC (source: EP KR US)
F01L 1/14 (2013.01 - KR); **F01L 1/143** (2013.01 - EP US); **F01L 13/00** (2013.01 - KR); **F01L 13/0036** (2013.01 - EP US);
F01L 1/08 (2013.01 - EP US); **F01L 1/25** (2013.01 - EP US)

Citation (search report)
• [Y] JP H08177426 A 19960709 - UNISIA JECS CORP
• [Y] JP 2004204706 A 20040722 - MAZDA MOTOR
• [A] JP 2005061241 A 20050310 - NISSAN MOTOR
• See references of WO 2007015315A1

Designated contracting state (EPC)
DE FR GB

DOCDB simple family (publication)
EP 1911940 A1 20080416; **EP 1911940 A4 20100721**; CN 101228337 A 20080723; JP 2007040114 A 20070215; JP 4829562 B2 20111207; KR 101011427 B1 20110128; KR 20080033273 A 20080416; US 2009056659 A1 20090305; WO 2007015315 A1 20070208

DOCDB simple family (application)
EP 05780849 A 20050826; CN 200580051148 A 20050826; JP 2005015520 W 20050826; JP 2005222462 A 20050801; KR 20087001260 A 20050826; US 99764605 A 20050826