

Title (en)

INTERNAL COMBUSTION ENGINE WITH HYDRAULIC CAMSHAFT ADJUSTER FOR ADJUSTING THE CAMSHAFT

Title (de)

BRENNKRAFTMASCHINE MIT HYDRAULISCHEM NOCKENWELLENVERSTELLER ZUR NOCKENWELLENVERSTELLUNG

Title (fr)

MOTEUR A COMBUSTION INTERNE EQUIPE D'UN DISPOSITIF HYDRAULIQUE DE REGLAGE D'ARBRE A CAMES

Publication

EP 1216345 B1 20050615 (DE)

Application

EP 00974375 A 20000912

Priority

- DE 19943833 A 19990913
- EP 0008904 W 20000912

Abstract (en)

[origin: US6675752B1] An internal combustion engine including a cylinder head having gas-exchange valves, at least one camshaft supported on the cylinder head, which camshaft is driven by a crankshaft to actuate corresponding gas-exchange valves on the cylinder head, and a camshaft adjuster arranged on the camshaft. The adjuster has a hydraulic pressure chamber and is configured to use hydraulic pressure to rotate position of the camshaft relative to the crankshaft to change control times of the gas-exchange valves. A feed device for hydraulic pressure is provided on the camshaft adjuster and is configured as a component separate from the cylinder head. The feed device has a ring for each camshaft, each ring having two grooves, each of the grooves being connected via associated hydraulic pressure channels in the feed device to a hydraulic pressure valve. Each ring is arranged to surround a section of the camshaft. Each surrounded section of the camshaft has two ring-shaped grooves, each of which is aligned with one of the grooves of the corresponding ring to form a pair. Each groove/ring-shaped groove pair of a ring is connected via associated hydraulic pressure channels in the camshaft to the hydraulic pressure chamber of the camshaft adjuster mounted on the camshaft.

IPC 1-7

F01L 1/34; **F01L 1/344**; **F02F 7/00**; **F01L 1/053**; **F01L 1/46**

IPC 8 full level

F01L 1/053 (2006.01); **F01L 1/34** (2006.01); **F01L 1/344** (2006.01); **F01L 1/46** (2006.01); **F02F 7/00** (2006.01)

CPC (source: EP US)

F01L 1/34 (2013.01 - EP US); **F01L 1/344** (2013.01 - EP US); **F01L 1/34406** (2013.01 - EP US); **F01L 1/3442** (2013.01 - EP US); **F01L 1/46** (2013.01 - EP US); **F01L 2001/0537** (2013.01 - EP US); **F01L 2001/3443** (2013.01 - EP US); **F01L 2001/34496** (2013.01 - EP US); **F01L 2820/041** (2013.01 - EP US)

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)

US 6675752 B1 20040113; AT E298040 T1 20050715; CN 1183314 C 20050105; CN 1360661 A 20020724; DE 19943833 A1 20010315; DE 50010575 D1 20050721; EP 1216345 A1 20020626; EP 1216345 B1 20050615; ES 2242646 T3 20051116; PT 1216345 E 20050930; WO 0120135 A1 20010322

DOCDB simple family (application)

US 8845302 A 20020313; AT 00974375 T 20000912; CN 00810263 A 20000912; DE 19943833 A 19990913; DE 50010575 T 20000912; EP 0008904 W 20000912; EP 00974375 A 20000912; ES 00974375 T 20000912; PT 00974375 T 20000912