

Title (en)

Internal combustion engine with a cam phase variation apparatus

Title (de)

Brennkraftmaschine mit Vorrichtung zur Verstellung der Nockenphase

Title (fr)

Moteur à combustion interne avec dispositif de variation de la phase de l'arbre à cames

Publication

**EP 0704605 B1 20030604 (EN)**

Application

**EP 95115427 A 19950929**

Priority

JP 26182694 A 19940930

Abstract (en)

[origin: EP0704605A2] This invention concerns internal combustion engines comprising an engine block including a cylinder head unit attached to a cylinder block, a valve actuating mechanism including at least one camshaft, a camshaft drive mechanism including a cam sprocket associated to the camshaft, and a cam phase variation apparatus for varying the angular relation between said camshaft and cam sprocket, said cam phase variation apparatus including an operating mechanism mounted on the camshaft and a hydraulic actuation means connected with said operating mechanism. The engine has been improved in that the hydraulic actuation means forms a pre-assembled unit attached to the engine block from the outside. <IMAGE>

IPC 1-7

**F01L 1/344**; F01L 1/26

IPC 8 full level

**F01L 1/26** (2006.01); **F01L 1/34** (2006.01); **F01L 1/344** (2006.01); **F01L 1/46** (2006.01); **F01M 9/10** (2006.01); **F01M 11/02** (2006.01); **F02F 7/00** (2006.01)

CPC (source: EP)

**F01L 1/265** (2013.01); **F01L 1/34406** (2013.01); **F01M 9/102** (2013.01); **F01M 11/02** (2013.01); **F01L 2001/34433** (2013.01); **F01M 9/108** (2013.01); **F02F 7/006** (2013.01); **F02F 2007/0063** (2013.01)

Cited by

EP1270880A1; US6263845B1; US6247436B1; WO9923362A1; WO9917002A1; EP2267282B1

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

**EP 0704605 A2 19960403**; **EP 0704605 A3 19961127**; **EP 0704605 B1 20030604**; DE 69530962 D1 20030710; DE 69530962 T2 20040513; JP H08100611 A 19960416

DOCDB simple family (application)

**EP 95115427 A 19950929**; DE 69530962 T 19950929; JP 26182694 A 19940930