

Title (en)  
HYDRAULIC CONTROL DEVICE.

Title (de)  
HYDRAULISCHE STEUEREINRICHTUNG.

Title (fr)  
SYSTEME DE COMMANDE HYDRAULIQUE.

Publication  
**EP 0564609 B1 19950628 (DE)**

Application  
**EP 92918776 A 19920904**

Priority  
• DE 9200750 W 19920904  
• DE 4135377 A 19911026

Abstract (en)  
[origin: WO9308380A1] The invention concerns a hydraulic control device for turning the camshaft (10) of an internal combustion engine, the device having a linkage element (23), designed as a piston (25), which is connected to a sprocket wheel (12) on the camshaft (10) by helical gearing and is connected to the camshaft (10) by straight-tooth bevels (29, 30). Flange-fitted to the camshaft is a hydraulic unit (13) accommodating a radial piston pump (14) which supplies the hydraulic fluid necessary for displacement of the piston (25). The pressure space (78) in front of the piston is closed off by a controllable pressure-relief valve (85). A solenoid valve (39) controls the flow of hydraulic fluid from an external pump (57) to the cylinder bores (62) of the radial piston pump. Translational motion of the piston (25) causes the sprocket wheel (12) and the camshaft (10) to rotate relative to each other.

IPC 1-7  
**F01L 1/34**

IPC 8 full level  
**F01L 1/34** (2006.01); **F01L 1/344** (2006.01)

CPC (source: EP US)  
**F01L 1/34406** (2013.01 - EP US); **Y10T 74/2102** (2015.01 - EP US)

Designated contracting state (EPC)  
DE FR GB IT

DOCDB simple family (publication)  
**WO 9308380 A1 19930429**; DE 4135377 A1 19930429; DE 59202734 D1 19950803; EP 0564609 A1 19931013; EP 0564609 B1 19950628; JP 3450005 B2 20030922; JP H06503631 A 19940421; US 5305718 A 19940426

DOCDB simple family (application)  
**DE 9200750 W 19920904**; DE 4135377 A 19911026; DE 59202734 T 19920904; EP 92918776 A 19920904; JP 50733393 A 19920904; US 6416393 A 19930519