

Title (en)

DEVICE FOR ADJUSTING THE PUMPING CAPACITY OF A LUBRICANT PUMP FOR AN INTERNAL COMBUSTION ENGINE

Title (de)

EINRICHTUNG ZUR REGELUNG DER PUMPLEISTUNG EINER SCHMIERMITTELPUMPE FÜR EINE BRENNKRAFTMASCHINE

Title (fr)

DISPOSITIF DE REGULATION DE LA PUISSANCE DE POMPAGE D'UNE POMPE A LUBRIFIANT D'AUTOMOBILE

Publication

EP 1537335 B1 20080924 (DE)

Application

EP 03740393 A 20030701

Priority

- DE 10239364 A 20020828
- EP 0306971 W 20030701

Abstract (en)

[origin: WO2004020831A1] The invention relates to a device for adjusting the pumping capacity of a lubricant pump for an internal combustion engine, comprising a vane-cell pump (2) provided with a rotor body (4), radial rotor blades (10) which are displaceable in said rotor body, and a stroke ring (12) (stator) whose position can be adjusted in relation to the axis of rotation of the rotor in order to modify the pumping volume according to operational parameters of the internal combustion engine. According to the invention, the stroke ring (12) is coupled to a control piston (28) which is guided in a valve bore (30) of a pressure control valve (26) and which is impinged upon by the engine-oil pressure on a front side (34) of said piston. The front side (34) of the piston is connected to the rear side (37) of the piston via a throttling port (62), such that a pressure chamber (44) is formed on the rear side of the piston and a spring element (40) is disposed therein, in addition to a hydraulic line (48) which is connected to the pressure chamber (44) and leads to the suction side of the oil pump via a control valve (52). The inventive device enables easy transformation of a pressure-controlled vane-cell pump whose power consumption is adapted to the oil pressure requirements of the internal combustion engine.

IPC 8 full level

F04C 14/22 (2006.01); **F01M 1/16** (2006.01); **F04C 2/344** (2006.01)

CPC (source: EP US)

F01M 1/16 (2013.01 - EP US); **F04C 2/3442** (2013.01 - EP US); **F04C 14/226** (2013.01 - EP US); **F01M 2001/0238** (2013.01 - EP US)

Cited by

WO2012120213A1

Designated contracting state (EPC)

AT DE FR GB IT

DOCDB simple family (publication)

WO 2004020831 A1 20040311; AT E409285 T1 20081015; DE 10239364 A1 20040318; DE 50310547 D1 20081106; EP 1537335 A1 20050608; EP 1537335 B1 20080924; JP 2005520096 A 20050707; US 2005232785 A1 20051020; US 7549848 B2 20090623

DOCDB simple family (application)

EP 0306971 W 20030701; AT 03740393 T 20030701; DE 10239364 A 20020828; DE 50310547 T 20030701; EP 03740393 A 20030701; JP 2004531781 A 20030701; US 51288905 A 20050504