

Title (en)  
FUEL INJECTION DEVICE FOR AN INTERNAL COMBUSTION ENGINE

Title (de)  
KRAFTSTOFFEINSPRITZEINRICHTUNG FÜR EINE BRENNKRAFTMASCHINE

Title (fr)  
DISPOSITIF D'INJECTION DE CARBURANT POUR MOTEUR A COMBUSTION

Publication  
**EP 1383999 B1 20060614 (DE)**

Application  
**EP 02740251 A 20020412**

Priority  
• DE 0201367 W 20020412  
• DE 10119603 A 20010421

Abstract (en)  
[origin: WO02086305A2] The invention relates to an internal combustion engine comprising a high-pressure fuel pump (10) and a fuel injection valve (12) for a cylinder in the combustion engine. Said high-pressure fuel pump (10) comprises a working chamber (22) and the fuel injection valve (12) comprises an injection valve member (28) which controls at least one injection opening (32) and which can be displaced in the direction of the opening (29) counter to the force of a closing spring (44), whereby the closing spring (44) is supported by a injection valve member (28) and a displaceable accumulator piston (50), which is impinged upon by pressure produced in the working chamber (22) of the pump on the side facing away from the closing spring (44). Said accumulator piston (50) can be displaced counter to the force of the closing spring (44) into the accumulator chamber (54) and the alternative stroke of the piston (50) into the accumulator chamber (54) is limited by a stop (53). The accumulator piston (50) comprises a shaft section (64) having a small diameter arranged in an output position in a connecting bore (56) and a shaft section (63) having a larger diameter arranged outside the connecting bore (56) in the direction of the working chamber (22) of the pump. The shaft section (63) of the accumulator piston having a larger diameter plunges into the connecting bore (56) during the alternating stroke of the accumulator piston (50) when said piston moves into the accumulator chamber (54).

IPC 8 full level  
**F02M 45/04** (2006.01); **F02M 61/16** (2006.01); **F02M 45/08** (2006.01); **F02M 57/02** (2006.01); **F02M 59/36** (2006.01); **F02M 61/20** (2006.01); **F02M 63/00** (2006.01)

CPC (source: EP US)  
**F02M 45/04** (2013.01 - EP US); **F02M 45/08** (2013.01 - EP US); **F02M 57/023** (2013.01 - EP US); **F02M 59/366** (2013.01 - EP US); **F02M 61/205** (2013.01 - EP US); **F02M 2200/304** (2013.01 - EP US); **F02M 2200/40** (2013.01 - EP US); **F02M 2200/505** (2013.01 - EP US)

Designated contracting state (EPC)  
DE FR GB IT

DOCDB simple family (publication)  
**WO 02086305 A2 20021031**; **WO 02086305 A3 20030103**; DE 10119603 A1 20021024; DE 50207204 D1 20060727; EP 1383999 A2 20040128; EP 1383999 B1 20060614; HU P0301200 A2 20030828; JP 2004519588 A 20040702; PL 359100 A1 20040823; US 2004025840 A1 20040212; US 6889661 B2 20050510

DOCDB simple family (application)  
**DE 0201367 W 20020412**; DE 10119603 A 20010421; DE 50207204 T 20020412; EP 02740251 A 20020412; HU P0301200 A 20020412; JP 2002583804 A 20020412; PL 35910002 A 20020412; US 31184703 A 20030827