

Title (en)
INJECTOR FOR FUEL INJECTION SYSTEMS OF INTERNAL COMBUSTION ENGINES, ESPECIALLY DIRECT INJECTION DIESEL ENGINES

Title (de)
INJEKTOR FÜR KRAFTSTOFF-EINSPRITZSYSTEME VON BRENNKRAFTMASCHINEN, INSBESONDERE VON DIREKTEINSPRITZENDEN DIESELMOTOREN

Title (fr)
INJECTEUR POUR SYSTEMES D'INJECTION DE CARBURANT DE MOTEURS A COMBUSTION INTERNE, EN PARTICULIER DE MOTEURS DIESEL A INJECTION DIRECTE

Publication
EP 1636485 B1 20090114 (DE)

Application
EP 04726421 A 20040408

Priority
• DE 2004000738 W 20040408
• DE 10326259 A 20030611

Abstract (en)
[origin: WO2004111434A1] Disclosed is an injector for fuel injection systems of internal combustion engines, especially direct injection diesel engines. Said injector comprises a piezo actuator (16) that is disposed in an injector body (10) and rests against the injector (10) and a sleeve-type transmission piston (32) via first spring means (34). The inventive injector further comprises a nozzle body (20) which is connected to the injector body (10) and is provided with at least one nozzle outlet (26, 27) and in which a staggered valve needle (21) is guided in an axially movable manner, and second spring means (48) that are arranged inside the transmission piston (32) and maintain the valve needle (21) in the closed position along with the injection pressure that affects the rear end of the valve needle (21). The injector also comprises a control space (42) that is embodied at the end of the transmission piston (32), which faces the valve needle, and is connected to a fuel supply (18) via a leak gap (43, 45, 47), said fuel supply (18) being subjected to injection pressure. The valve needle (21) is impinged upon in the opening direction (35) by the fuel located in the control space (42). An essential characteristic of the invention consists of the fact that the transmission piston (32) actuated by the piezo actuator (16) is spatially directly allocated to the valve needle (21) such that a rearward area (30) of the valve needle (21), which has a larger diameter than an area of the valve needle (21) located at the nozzle outlet end, fits into the interior (31) of the transmission piston (32).

IPC 8 full level
F02M 51/06 (2006.01); **F02M 47/06** (2006.01); **F02M 63/00** (2006.01)

CPC (source: EP KR US)
F02M 51/0603 (2013.01 - EP KR US); **F02M 2200/21** (2013.01 - KR); **F02M 2200/704** (2013.01 - EP KR US)

Designated contracting state (EPC)
DE FR GB IT

DOCDB simple family (publication)
DE 10326259 A1 20050105; CN 100432420 C 20081112; CN 1806116 A 20060719; DE 502004008875 D1 20090305; EP 1636485 A1 20060322; EP 1636485 B1 20090114; JP 2006510850 A 20060330; KR 20060021357 A 20060307; US 2006255184 A1 20061116; US 7431220 B2 20081007; WO 2004111434 A1 20041223

DOCDB simple family (application)
DE 10326259 A 20030611; CN 200480016377 A 20040408; DE 2004000738 W 20040408; DE 502004008875 T 20040408; EP 04726421 A 20040408; JP 2005518248 A 20040408; KR 20057023685 A 20051209; US 55971005 A 20051207