

Title (en)
FUEL INJECTION VALVE

Title (de)
BRENNSTOFFEINSPRITZVENTIL

Title (fr)
SOUPAPE D'INJECTION DE CARBURANT

Publication
EP 1633973 B1 20080514 (DE)

Application
EP 04726088 A 20040407

Priority
• DE 2004000727 W 20040407
• DE 10325289 A 20030604

Abstract (en)
[origin: WO2004109094A1] Disclosed is a fuel injection valve (1), particularly for injecting fuel directly into a combustion chamber of an internal combustion engine, comprising a valve-closing body (4) which cooperates with a valve seat area (6) that is embodied on a valve seat body (5) so as to form a sealing seat, and at least one spraying port (7) which is configured downstream from the sealing seat. Said spraying port (7) is provided with a directing zone (38) and a discharge zone (39) that is located at the spraying end thereof. The discharge zone (39) expands in a staggered and/or at least partly continuous manner from a transition point (40) between the directing zone (38) and the discharge zone (39), at least one first step (41) being provided. Following a distance (s), a discharged fuel jet (42) that expands in a substantially uniform fashion at a certain spraying angle (46) from the directing zone (38) at the transition point (40) passes an end (43) of the discharge zone (39), which is located at the outflow end, at a size (47) of a gap (44), said size (47) of the gap being greater than zero. A first volume (45) remains in the discharge zone (39) between the fuel jet (42) and the inner walls of the discharge zone (39).

IPC 8 full level
F02M 61/18 (2006.01)

CPC (source: EP US)
F02M 61/1833 (2013.01 - EP US); **F02M 61/1846** (2013.01 - EP US); **Y10S 239/90** (2013.01 - EP US)

Designated contracting state (EPC)
DE ES FR GB IT

DOCDB simple family (publication)
WO 2004109094 A1 20041216; CN 100447401 C 20081231; CN 1798920 A 20060705; DE 10325289 A1 20050317; DE 502004007150 D1 20080626; EP 1633973 A1 20060315; EP 1633973 B1 20080514; ES 2303632 T3 20080816; JP 2006510849 A 20060330; JP 4210685 B2 20090121; US 2006226263 A1 20061012; US 7234654 B2 20070626

DOCDB simple family (application)
DE 2004000727 W 20040407; CN 200480015503 A 20040407; DE 10325289 A 20030604; DE 502004007150 T 20040407; EP 04726088 A 20040407; ES 04726088 T 20040407; JP 2005518247 A 20040407; US 55955004 A 20040407