

Title (en)  
FUEL INJECTION VALVE

Title (de)  
BRENNSTOFFEINSPRITZVENTIL

Title (fr)  
SOUPAPE D'INJECTION DE CARBURANT

Publication  
**EP 1442210 B1 20090805 (DE)**

Application  
**EP 02767123 A 20020823**

Priority  
• DE 0203093 W 20020823  
• DE 10153630 A 20011031

Abstract (en)  
[origin: WO03040545A1] The invention relates to a fuel injection valve (1) for directly injecting fuel into the combustion chamber of an internal combustion engine, comprising: a piezoelectric actuator (2), which is encapsulated in an actuator housing (3); a valve needle (9), which is actively connected to the actuator and on which a valve closing body (11) is provided that forms a tight seat with the valve seating (13), and; a nozzle body (12) into which the actuator housing (3) can be introduced. The actuator housing (3) and the nozzle body (12) are closed by a common connection part (4), whereby the connection part (4) has a first and a second diameter step (19; 20).

IPC 8 full level  
**F02M 51/06** (2006.01); **F02M 51/00** (2006.01); **F02M 61/16** (2006.01); **F02M 63/00** (2006.01)

CPC (source: EP US)  
**F02M 51/0603** (2013.01 - EP US)

Designated contracting state (EPC)  
DE FR GB IT

DOCDB simple family (publication)  
**WO 03040545 A1 20030515**; DE 10153630 A1 20030710; DE 50213748 D1 20090917; EP 1442210 A1 20040804; EP 1442210 B1 20090805; JP 2005508476 A 20050331; JP 4280633 B2 20090617; US 2004094640 A1 20040520; US 7063278 B2 20060620

DOCDB simple family (application)  
**DE 0203093 W 20020823**; DE 10153630 A 20011031; DE 50213748 T 20020823; EP 02767123 A 20020823; JP 2003542774 A 20020823; US 25053104 A 20040106