

Title (en)  
FUEL INJECTION VALVE

Title (de)  
BRENNSTOFFEINSPRITZVENTIL

Title (fr)  
SOUPAPE D'INJECTION DE CARBURANT

Publication  
**EP 1309791 A1 20030514 (DE)**

Application  
**EP 01960142 A 20010803**

Priority  
• DE 0102961 W 20010803  
• DE 10039077 A 20000810

Abstract (en)  
[origin: WO0212712A1] A fuel injection valve (1), especially a fuel injection valve (1) for fuel injection systems of internal combustion engines, has a solenoid coil (2), an armature (3) on which a return spring (9) acts, in a closing direction, and a valve needle (13) which is nonpositively connected to the armature (3), for actuating a valve closing body (14) which together with a valve seat surface (16), forms a seal seat. The armature (3) has a pot-shaped axial extension (7) in which at least one opening (20) is configured.

IPC 1-7  
**F02M 51/06**

IPC 8 full level  
**F02M 51/08** (2006.01); **F02M 51/06** (2006.01); **F02M 61/10** (2006.01)

CPC (source: EP US)  
**F02M 51/0653** (2013.01 - EP US); **F02M 51/0657** (2013.01 - EP US); **F02M 51/066** (2013.01 - EP US)

Citation (search report)  
See references of WO 0212712A1

Designated contracting state (EPC)  
DE FR GB IT

DOCDB simple family (publication)  
**WO 0212712 A1 20020214**; DE 10039077 A1 20020221; DE 50110166 D1 20060727; EP 1309791 A1 20030514; EP 1309791 B1 20060614; JP 2004506130 A 20040226; JP 4838482 B2 20111214; US 2003102386 A1 20030605; US 6857584 B2 20050222

DOCDB simple family (application)  
**DE 0102961 W 20010803**; DE 10039077 A 20000810; DE 50110166 T 20010803; EP 01960142 A 20010803; JP 2002517968 A 20010803; US 11025302 A 20020827