

Title (en)  
FUEL INJECTION VALVE

Title (de)  
BRENNSTOFFEINSPRITZVENTIL

Title (fr)  
SOUPAPE D'INJECTION DE CARBURANT

Publication  
**EP 1115971 B1 20040811 (DE)**

Application  
**EP 99923386 A 19990324**

Priority  
• DE 9900864 W 19990324  
• DE 19843535 A 19980923

Abstract (en)  
[origin: US6561436B1] A fuel injector, particularly an injection valve for fuel-injection systems of internal combustion engines, has a piezoelectric or magnetostrictive actuator. By way of a valve needle, the actuator actuates a valve-closure member, which interacts with a valve-seat surface to form a sealing seat. The actuator has a tubular design, and encircles a transmission piston that acts on a hydraulic transmission device.

IPC 1-7  
**F02M 51/06**; **F02M 61/08**; **F02M 47/04**

IPC 8 full level  
**F02M 47/00** (2006.01); **F02M 47/04** (2006.01); **F02M 51/00** (2006.01); **F02M 51/06** (2006.01); **F02M 61/08** (2006.01); **F02M 63/00** (2006.01); **H01L 41/09** (2006.01); **H01L 41/12** (2006.01)

CPC (source: EP US)  
**F02M 47/046** (2013.01 - EP US); **F02M 51/005** (2013.01 - EP US); **F02M 51/0603** (2013.01 - EP US); **F02M 61/08** (2013.01 - EP US); **F02M 2200/703** (2013.01 - EP US)

Designated contracting state (EPC)  
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE

DOCDB simple family (publication)  
**US 6561436 B1 20030513**; AT E273448 T1 20040815; DE 19843535 A1 20000330; DE 59910221 D1 20040916; EP 1115971 A1 20010718; EP 1115971 B1 20040811; JP 2002525486 A 20020813; JP 4309589 B2 20090805; WO 0017509 A1 20000330

DOCDB simple family (application)  
**US 78796701 A 20010709**; AT 99923386 T 19990324; DE 19843535 A 19980923; DE 59910221 T 19990324; DE 9900864 W 19990324; EP 99923386 A 19990324; JP 2000571132 A 19990324