

Title (en)  
FUEL INJECTION VALVE

Title (de)  
BRENNSTOFFEINSPRITZVENTIL

Title (fr)  
SOUPAPE D'INJECTION DE CARBURANT

Publication  
**EP 1423603 A1 20040602 (DE)**

Application  
**EP 02754214 A 20020614**

Priority  
• DE 0202176 W 20020614  
• DE 10142302 A 20010829

Abstract (en)  
[origin: DE10142302A1] The fuel injection valve (1), for an internal combustion motor, has a magnetic coil (10) which acts on an armature (20) against a return spring (23) with the valve needle (3), to form the valve unit with an axial movement. The return spring is at a guide sleeve (28), within an axial recess (33) at the valve needle. The sleeve grips through the armature, to give a force fit bond between the valve needle and the armature.

IPC 1-7  
**F02M 61/12**; **F02M 51/06**

IPC 8 full level  
**F02M 61/12** (2006.01); **F02M 51/06** (2006.01); **F02M 61/20** (2006.01); **F02M 63/00** (2006.01)

CPC (source: EP KR US)  
**F02M 51/0671** (2013.01 - EP US); **F02M 51/0682** (2013.01 - EP US); **F02M 51/0685** (2013.01 - EP US); **F02M 61/12** (2013.01 - KR); **F02M 2200/505** (2013.01 - EP US)

Citation (search report)  
See references of WO 03027487A1

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

DOCDB simple family (publication)  
**DE 10142302 A1 20030320**; DE 50210773 D1 20071004; EP 1423603 A1 20040602; EP 1423603 B1 20070822; JP 2005504218 A 20050210; JP 4200098 B2 20081224; KR 100878131 B1 20090114; KR 20040029046 A 20040403; US 2005258276 A1 20051124; US 7070128 B2 20060704; WO 03027487 A1 20030403

DOCDB simple family (application)  
**DE 10142302 A 20010829**; DE 0202176 W 20020614; DE 50210773 T 20020614; EP 02754214 A 20020614; JP 2003531022 A 20020614; KR 20047002809 A 20020614; US 39933303 A 20030416