

Title (en)  
FUEL INJECTION VALVE

Title (de)  
BRENNSTOFFEINSPRITZVENTIL

Title (fr)  
SOUPAPE D'INJECTION DE CARBURANT

Publication  
**EP 1049871 B1 20030730 (DE)**

Application  
**EP 99953590 A 19990825**

Priority  

- DE 9902657 W 19990825
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- DE 19927196 A 19990615

Abstract (en)  
[origin: US6296199B1] A fuel-injection valve, in particular, a high-pressure injection valve, for injecting fuel directly into a combustion chamber of a mixture-compressing internal combustion engine with externally supplied ignition is distinguished by the fact that a guide and seating area formed by three disc-shaped elements is provided at a downstream end of the valve. A swirl element is embedded between a guide element and a valve seat element. The guide element is used to guide a valve needle which passes through it and can move in the axial direction, while a valve closing segment of the valve interacts with a valve seat surface of the valve seat element. The swirl element has an inner opening area with multiple swirl channels. The three disc-shaped elements are permanently connected to each other, forming a positive-locking joint.

IPC 1-7  
**F02M 61/16**; **F02M 61/18**

IPC 8 full level  
**F02M 51/06** (2006.01); **F02M 61/16** (2006.01); **F02M 61/18** (2006.01)

CPC (source: EP US)  
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**US 6296199 B1 20011002**; AU 1028700 A 20000321; AU 741787 B2 20011206; BR 9906683 A 20001017; CN 1104555 C 20030402; CN 1275185 A 20001129; EP 1049871 A1 20001108; EP 1049871 B1 20030730; ES 2205895 T3 20040501; JP 2002523682 A 20020730; JP 4593784 B2 20101208; RU 2227226 C2 20040420; WO 0012891 A1 20000309

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