

Title (en)  
Fuel injection valve

Title (de)  
Brennstoffeinspritzventil

Title (fr)  
Soupape d'injection de carburant

Publication  
**EP 1347169 A2 20030924 (EN)**

Application  
**EP 03005939 A 20030317**

Priority  
JP 2002074149 A 20020318

Abstract (en)  
A fuel injection valve (1) provided with a control valve (8) which is displaced in order to control a pressure within a pressure chamber (5) acting upon a jet hole valve (4), an actuator (17) which generates an operation force for displacing the control valve (8), and elastic support means (22) which elastically supports the control valve in resistance to the operation force. The actuator (17) can change the operation force by controlling a control amount, and the elastic support means (22) is displaced along with the control valve (8) in accordance with increase of the operation force. When the control valve (8) is displaced to a chosen intermediate position it abuts with an abutting member (23). This abutting member (23) is pushed by a set pushing force, generated by an elastic member (24) which is separate from the elastic support means (23), which acts in the opposite direction to the operation force prior to the displacement of the abutting member (23). By structuring the fuel injection valve (1) in this way, it is possible to accurately control the control valve (8) such that it has the chosen intermediate displacement. <IMAGE>

IPC 1-7  
**F02M 47/02**; **F02M 51/06**; **F02M 45/08**

IPC 8 full level  
**F02M 51/06** (2006.01); **F02M 45/08** (2006.01); **F02M 47/00** (2006.01); **F02M 47/02** (2006.01); **F02M 59/46** (2006.01); **F02M 61/10** (2006.01)

CPC (source: EP)  
**F02M 45/08** (2013.01); **F02M 47/025** (2013.01); **F02M 47/027** (2013.01); **F02M 63/0026** (2013.01)

Cited by  
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Designated contracting state (EPC)  
DE ES FR GB IT SE

DOCDB simple family (publication)  
**EP 1347169 A2 20030924**; **EP 1347169 A3 20040506**; **EP 1347169 B1 20060607**; **EP 1347169 B9 20060913**; DE 60305766 D1 20060720; DE 60305766 T2 20070614; ES 2264501 T3 20070101; JP 2003269291 A 20030925; JP 3891866 B2 20070314

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