

Title (en)

Fuel injection valve for internal combustion engines

Title (de)

Kraftstoffeinspritzventil für Brennkraftmaschinen

Title (fr)

Soupape d'injection de carburant pour des moteurs à combustion interne

Publication

EP 1650427 A1 20060426 (DE)

Application

EP 05109414 A 20051011

Priority

DE 102004051756 A 20041023

Abstract (en)

The fuel injection valve for internal combustion engines comprises an outer (5) and an inner (7) valve longitudinally movable within it, with both needles interacting with a valve seat (14) and by longitudinal movement controlling the opening of an injection orifice (20,22). A control chamber (27) hydraulically pressurizes the end faces of the outer and inner valve needles. The control chamber is connectable to a valve chamber (51) of a control valve (50) via just a drain restrictor (44), whereby the valve chamber is connectable to a leakage oil chamber.

IPC 8 full level

F02M 45/08 (2006.01); **F02M 47/02** (2006.01); **F02M 59/46** (2006.01)

CPC (source: EP)

F02M 45/086 (2013.01); **F02M 47/027** (2013.01); **F02M 63/004** (2013.01); **F02M 63/0045** (2013.01); **F02M 63/0026** (2013.01); **F02M 2200/46** (2013.01); **F02M 2547/001** (2013.01)

Citation (applicant)

DE 10338228 A1 20050310 - BOSCH GMBH ROBERT [DE]

Citation (search report)

- [A] WO 2004070192 A1 20040819 - BOSCH GMBH ROBERT [DE], et al
- [A] DE 10246974 A1 20040422 - BOSCH GMBH ROBERT [DE]
- [A] US 2004129804 A1 20040708 - POTZ DETLEV [DE], et al
- [A] WO 02090754 A1 20021114 - BOSCH GMBH ROBERT [DE], et al
- [PDA] WO 2005019638 A1 20050303 - BOSCH GMBH ROBERT [DE], et al

Cited by

EP2050951A1; CN102803701A; CN111502880A; US7967223B2; US8925524B2; WO2007098988A1

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 1650427 A1 20060426; **EP 1650427 B1 20071107**; DE 102004051756 A1 20060427; DE 502005001871 D1 20071220

DOCDB simple family (application)

EP 05109414 A 20051011; DE 102004051756 A 20041023; DE 502005001871 T 20051011