

Title (en)  
FUEL-INJECTION VALVE FOR INTERNAL COMBUSTION ENGINES

Title (de)  
KRAFTSTOFFEINSPRITZVENTIL FÜR BRENNKRAFTMASCHINEN

Title (fr)  
SOUPAPE D'INJECTION DE CARBURANT POUR MOTEURS A COMBUSTION INTERNE

Publication  
**EP 1815128 A1 20070808 (DE)**

Application  
**EP 05801521 A 20051020**

Priority  
• EP 2005055408 W 20051020  
• DE 102004055262 A 20041117

Abstract (en)  
[origin: WO2006053811A1] The invention relates to a fuel-injection valve for internal combustion engines, comprising an outer valve needle (8) that is located in a valve body (1) and an inner valve needle (10) that is located in the outer valve needle (8), said needles co-operating with an essentially conical valve seat (18) by means of their longitudinal displacement. This enables fuel to flow from a pressure chamber (14) that can be filled with fuel to at least two rows of injection orifices (30; 32), said rows of injection orifices (30; 32) comprising at least one respective injection orifice. The outer valve needle controls the fuel flow to the outer row of injection orifices (30) and the inner valve needle (10) fulfils the same function for the inner row of injection orifices (32). All the injection orifices (22) in the inner row of injection orifices (32) have an identical entry opening diameter ( $d_{SUB>5</SUB>}$ ) and all the injection orifices (20) in the outer row of injection orifices (30) likewise have an identical entry opening diameter ( $d_{SUB>3</SUB>}$ ), the entry opening diameter ( $d_{SUB>5</SUB>}$ ) of the inner injection orifices (22) differing from that of the outer injection orifices (20).

IPC 8 full level  
**F02M 45/08** (2006.01); **F02M 61/18** (2006.01)

CPC (source: EP)  
**F02M 45/086** (2013.01); **F02M 61/182** (2013.01); **F02M 61/1826** (2013.01); **F02M 61/1833** (2013.01); **F02M 61/1846** (2013.01); **F02M 2200/46** (2013.01)

Citation (search report)  
See references of WO 2006053811A1

Designated contracting state (EPC)  
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

DOCDB simple family (publication)  
**DE 102004055262 A1 20060518**; EP 1815128 A1 20070808; WO 2006053811 A1 20060526

DOCDB simple family (application)  
**DE 102004055262 A 20041117**; EP 05801521 A 20051020; EP 2005055408 W 20051020