

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 1187983 B1 20050810 (DE)**

Application  
**EP 00936813 A 20000526**

Priority  
• DE 19925380 A 19990602  
• EP 0004813 W 20000526

Abstract (en)  
[origin: DE19925380A1] The invention relates to a fuel injection valve for internal combustion engines, comprising a valve member (3) that is axially displaceable in a valve body (1) and that has a valve sealing surface (5) at its combustion chamber-side end. The valve member interacts with a valve seat surface (7) located on the valve body (1) with said valve sealing surface, forming a tight cross section as it does so. The inventive fuel injection valve further comprises injection openings (13) in the wall of the valve body (1). These injection openings are positioned after the tight cross-section between the valve seat surface (7) and the valve tight surface (5), downstream in the direction of the flow of fuel, and have a conical form. At least two injection openings (13) of the fuel injection valve have different cone angles from each other.

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

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

CPC (source: EP US)  
**F02M 61/1806** (2013.01 - EP US); **F02M 61/1833** (2013.01 - EP US)

Designated contracting state (EPC)  
DE ES FR IT

DOCDB simple family (publication)  
**DE 19925380 A1 20001207**; DE 50010930 D1 20050915; EP 1187983 A1 20020320; EP 1187983 B1 20050810; US 2002043574 A1 20020418; US 6520145 B2 20030218; WO 0075504 A1 20001214

DOCDB simple family (application)  
**DE 19925380 A 19990602**; DE 50010930 T 20000526; EP 0004813 W 20000526; EP 00936813 A 20000526; US 597901 A 20011203