

Title (en)

Fuel injection valve

Title (de)

Kraftstoffeinspritzventil

Title (fr)

Soupape d'injection de combustible

Publication

EP 0890735 B2 20140910 (DE)

Application

EP 98109048 A 19980519

Priority

DE 19729827 A 19970711

Abstract (en)

[origin: EP0890735A2] The valve sealing surface (44) works in conjunction with a valve seat (45) arranged on the valve body. Several sprayholes are arranged in the valve body beneath the valve seat (45) and have rounded inlet apertures. A part of the spray holes (53) has a degree of rounding different from the remainder of the spray holes (57). The inlet apertures have individual spray holes (53,57) on their side facing the valve member (41) with a different degree of rounding from their side turned away from the valve member (41). The degree of rounding of the spray holes is matched to the arrangement of the spray holes in the valve body, to the installation in a combustion chamber of the engine and to the combustion chamber shape in the engine.

IPC 8 full level

F02M 61/18 (2006.01); **F02M 61/16** (2006.01)

CPC (source: EP US)

F02M 61/168 (2013.01 - EP US); **F02M 61/1806** (2013.01 - EP US); **F02M 61/182** (2013.01 - EP US); **F02M 61/184** (2013.01 - EP US)

Citation (opposition)

Opponent :

- JP S58106167 A 19830624 - HINO MOTORS LTD
- S. KAMPMANN, B. DITTUS, P. MATTES, M. KIRNER: "The Influence of Hydro Grinding at VCO Nozzles on the Mixture Preparation in a DI Diesel Engine", SAE 960867, 26 February 1996 (1996-02-26) - 29 February 1996 (1996-02-29)
- LONG ZHANG, TADASHI TSURUSHIMA, TAKAHIRO UEDA.: "Measurement of Liquid Phase Penetration of Evaporating", SAE 971645, 31 December 1997 (1997-12-31) - 31 December 1997 (1997-12-31), pages 87 - 93

Cited by

FR2796104A1; WO03093669A1; WO0060234A1; EP1644636B2

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

EP 0890735 A2 19990113; **EP 0890735 A3 20011010**; **EP 0890735 B1 20061018**; **EP 0890735 B2 20140910**; DE 19729827 A1 19990114; DE 59813768 D1 20061130; JP 4154033 B2 20080924; JP H1193806 A 19990406; US 5992766 A 19991130

DOCDB simple family (application)

EP 98109048 A 19980519; DE 19729827 A 19970711; DE 59813768 T 19980519; JP 19284298 A 19980708; US 11427798 A 19980713