

Title (en)  
FUEL INJECTION DEVICE

Title (de)  
BRENNSTOFFEINSPRITZVORRICHTUNG

Title (fr)  
SYSTEME D'INJECTION DE CARBURANT

Publication  
**EP 0988449 B1 20030716 (DE)**

Application  
**EP 99914552 A 19990327**

Priority  
• DE 19815918 A 19980409  
• EP 9902117 W 19990327

Abstract (en)  
[origin: DE19815918A1] A fuel injection device for internal combustion engines, especially two-stroke diesel engines, comprising an eccentric injection-nozzle tip (4) protruding into an associated combustion chamber, whereby said nozzle tip has a pocket drill hole (3) with several outgoing injection-nozzle drill holes (13) which can be impinged upon with fuel. At least the axes of the outer nozzle tip drill holes (13) of said row of drill holes are directed inwards in relation to a radial progression. The conditions for fuel admission are approximately the same for all nozzle drill holes (13) resulting in a stable jet. Admission chambers (16) depart from the pocket drill hole (3) and are assigned to at least one part of the nozzle drill holes (13), whereby the diameter inside the chambers is greater than the diameter of the nozzle drill holes (13) and said chambers are designed in such a way that at least similar length ratios exist for all nozzle drill holes (13) in the row of drill holes.

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

IPC 8 full level  
**F02M 61/06** (2006.01); **F02M 61/12** (2006.01); **F02M 61/18** (2006.01)

CPC (source: EP KR)  
**F02M 61/18** (2013.01 - KR); **F02M 61/1806** (2013.01 - EP); **F02F 2007/0097** (2013.01 - EP)

Cited by  
EP3147477B1; EP3015679B1; EP3015699B1

Designated contracting state (EPC)  
CH DE FI FR GB IT LI NL

DOCDB simple family (publication)  
**DE 19815918 A1 19991021**; AU 3332799 A 19991101; CN 1093226 C 20021023; CN 1263584 A 20000816; DE 59906287 D1 20030821; EP 0988449 A1 20000329; EP 0988449 B1 20030716; JP 2000516687 A 20001212; JP 3308551 B2 20020729; KR 100361442 B1 20021121; KR 20010013569 A 20010226; PL 202429 B1 20090630; PL 337334 A1 20000814; RU 2175728 C2 20011110; WO 9953196 A1 19991021

DOCDB simple family (application)  
**DE 19815918 A 19980409**; AU 3332799 A 19990327; CN 99800510 A 19990327; DE 59906287 T 19990327; EP 9902117 W 19990327; EP 99914552 A 19990327; JP 55110399 A 19990327; KR 19997011576 A 19991208; PL 33733499 A 19990327; RU 2000100279 A 19990327