

Title (en)
Injection valve for internal combustion engines

Title (de)
Einspritzventil für Brennkraftmaschinen

Title (fr)
Soupape d'injection pour moteurs à combustion interne

Publication
EP 0972932 A1 20000119 (DE)

Application
EP 99107868 A 19990421

Priority
DE 19831837 A 19980716

Abstract (en)
The nozzle drillings (8-11) are arranged in step shaped offset blind bore (7) of the injection nozzle (6). Also an inner central needle (4) is arranged in an outer valve needle (3), and nozzle drillings (10,11) are arranged in the first lower region (YY) of the blind bore (7). These drillings are opened by the inner nozzle needle with a full load operation. Further nozzle drillings are arranged in the second upper region (XX) of the blind bore (7). These are opened over the injection pressure, for a part load operation or for the igniter jet with a dual fuel operation, by the nozzle needle (3).

Abstract (de)
Das Einspritzventil umfaßt eine äußere Ventalnadel (3) und eine zentrale innere Ventalnadel (4), die jeweils einen Ventilsitz (12,13) in einer zweistufigen Sackbohrung (7) der Einspritzdüse aufweisen. Jede Ventalnadel (3,4) schließt über dem Ventilsitz (12,13) zugeordnete Düsenbohrungen (8,9,10,11) ab, die in übereinander angeordneten Ebenen (X-X,Y-Y) vorgesehen sind. Dabei ist jede Ventalnadel (3,4) separat steuerbar. <IMAGE>

IPC 1-7
F02M 45/08

IPC 8 full level
F02M 45/08 (2006.01)

CPC (source: EP)
F02M 45/086 (2013.01); **F02M 2200/46** (2013.01)

Citation (applicant)
EP 0546985 A1 19930616 - NEW SULZER DIESEL AG [CH]

Citation (search report)
• [XA] DE 4432686 A1 19960523 - MAN B & W DIESEL AG [DE]
• [XA] DE 3824467 A1 19900125 - MAN B & W DIESEL AG [DE]
• [A] DE 4115477 A1 19911121 - AVL VERBRENNUNGSKRAFT MESSTECH [AT]
• [DA] EP 0546985 A1 19930616 - NEW SULZER DIESEL AG [CH]

Cited by
WO2012072864A1; EP1217204A1; FR2853352A1; CN103237972A; DE10058153A1; CZ298453B6; JP2013544338A; US6631857B2; US6901915B2; WO2012072881A1; WO03018991A1; WO0242631A1; US9828929B2

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