

Title (en)  
FUEL INJECTION VALVE FOR DIESEL ENGINE

Title (de)  
BRENNSTOFFEINSPRITZVENTIL FÜR DIESELMOTOREN

Title (fr)  
VALVE D'INJECTION DE CARBURANT POUR MOTEUR DIESEL

Publication  
**EP 1041274 A4 20090527 (EN)**

Application  
**EP 98947804 A 19981009**

Priority  
JP 9804566 W 19981009

Abstract (en)  
[origin: EP1041274A1] The present invention relates to a fuel injection nozzle of a direct-injection diesel engine. Said valve comprises a first serration formed on the opening edge of a nozzle body and a second serration formed to the top end portion of a needle valve, which incline against the axial direction, and a third serration and a fourth serration formed to the outer wall of the end portion of said needle valve and to the inner wall of a rotary valve inserted to said end portion, which incline to the opposite direction to the first and second serrations with respect to the axial direction. When the needle valve is lifted, the needle valve axially rotates, and the rotary valve rotates relative to said needle valve in the same rotating direction. As the rotation amount increases, the overlapped area of first nozzle holes formed to the nozzle body and second nozzle holes formed to the rotary valve increases. During idle state or in low-load region, the overlapped area is small, and during high load, the area increases corresponding to the fuel injection pressure. Thus, the spray penetration of the fuel is maintained constantly high, and the fuel effectively collides with squished air, realizing good mixture. Thereby, it is possible to effectively minimize ignition delay, while improving combustion performance, quietness, and exhaust emissions performance. <IMAGE>

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IPC 8 full level  
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Citation (search report)  
• [A] DE 19757724 A1 19980625 - ZEXEL CORP [JP]  
• [A] EP 0713004 A1 19960522 - ZEXEL CORP [JP]  
• See references of WO 0022295A1

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