

Title (en)  
FUEL INJECTION PUMP FOR COMBUSTION ENGINES

Publication  
**EP 0309501 B1 19930107 (DE)**

Application  
**EP 88902423 A 19880326**

Priority  
DE 3711744 A 19870407

Abstract (en)  
[origin: WO8808080A1] A process and a device for quantity control of fuel injection by means of a fuel injection pump are proposed. With the process or with the device, the noise of a diesel engine during idling and partial loading can be reduced. The fuel injection pump includes at least one pump piston (3) which produces the pressure for the injection and delimits a pump working chamber (5), as well as a valve (26) which is opened by the element pressure in the pump working chamber (5) and closed by an electromagnetic device (34, 37). When the valve (26) is open, some of the fuel supply in the pump working chamber (5) is conveyed away through a discharge channel (29) without being injected. As this reduces the quantity of fuel injected in unit time, the overall delivery time must be prolonged. By prolonging the duration of injection, the noise of the combustion is reduced. During partial loading of the internal combustion machine, the valve (26) is closed by means of the electromagnetic device (34, 37) after a time-interval ( DELTA ) has elapsed since the valve was opened. The fuel which is conveyed thereafter is injected. The magnitude of the time-interval ( DELTA t ) between opening and closing of the valve is determined in an electronic control unit (52) in function of load parameters (59, 62) of the internal combustion engine. During full-load operation of the internal combustion engine, the valve (26) remains closed.

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**DE 3711744 A1 19881027**; DE 3877302 D1 19930218; EP 0309501 A1 19890405; EP 0309501 B1 19930107; JP 2818175 B2 19981030; JP H01502768 A 19890921; KR 890700752 A 19890427; KR 960013108 B1 19960930; US 4974564 A 19901204; WO 8808080 A1 19881020

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