

Title (en)
FUEL INJECTION DEVICE FOR AN INTERNAL COMBUSTION ENGINE

Title (de)
KRAFTSTOFFEINSPRITZEINRICHTUNG FÜR EINE BRENNKRAFTMASCHINE

Title (fr)
DISPOSITIF D'INJECTION DE CARBURANT POUR MOTEUR A COMBUSTION INTERNE

Publication
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Application
EP 02805245 A 20021112

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Abstract (en)
[origin: DE10160264A1] The invention relates to a fuel injection device which is provided, for every cylinder of the internal combustion engine, with a high-pressure fuel pump (10) and with a fuel injection valve (12) linked therewith. A pump piston (18) of the high-pressure fuel pump (10) delimits a pump working compartment (22) that is linked with a pressure compartment (40) of the fuel injection valve (12). Said fuel injection valve has an injection valve member (28) that controls injection openings (32) and that is displaced in an opening direction (29) against a closing force by the pressure prevailing in the pressure compartment (40). A control valve (80) controls the link (74) of a control pressure compartment (62), linked with the pump working compartment (22) and limited by a control piston (60), with a discharge compartment (24) in which a throttle element (75) is provided. The control piston (60) controls an effective area of flow of the link (74) of the control pressure compartment (62) to the discharge compartment (24) in accordance with the stroke of the control piston (60) in such a manner that, as the opening stroke of the injection valve member (28) increases, the control piston (60) releases a smaller effective area of flow. At a maximum opening stroke of the injection valve member (28), the released effective area of flow is smaller than the effective area of flow of the second throttle element (75).
[origin: DE10160264A1] The device has a second choke point with a fixed flow cross-section in a connection between a control pressure chamber and relief chamber. A control piston controls a flow cross-section from the control pressure chamber to the connection so a smaller cross-section is exposed with increased injection valve element opening displacement. The cross-section is smaller than that of the second choke point for maximum opening displacement. The device has a second choke point (75) with a fixed flow cross-section in a connection between a control pressure chamber and a relief chamber. A control piston (60) controls a flow cross-section from the control pressure chamber (62) to the connection (74) to the relief chamber (24) depending on the stroke of the piston so that a smaller cross-section is exposed with increased injection valve element (28) opening displacement and the cross-section is smaller than that of the second choke point for maximum opening displacement.

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