

Title (en)

FUEL INJECTION SYSTEM AND METHOD FOR DETERMINING A NEEDLE STROKE STOP IN A FUEL INJECTION VALVE

Title (de)

KRAFTSTOFFEINSPRITZSYSTEM UND VERFAHREN ZUM ERMITTELN EINES NADELHUBANSCHLAGS IN EINEM KRAFTSTOFFEINSPRITZVENTIL

Title (fr)

SYSTÈME D'INJECTION DE CARBURANT ET PROCÉDÉ DE DÉTERMINATION DE LA BUTÉE DE FIN DE COURSE DU POINTEAU D'UNE SOUPAPE D'INJECTION DE CARBURANT

Publication

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Application

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Abstract (en)

[origin: WO2008071531A1] The invention relates to a fuel injection system comprising at least one fuel injection valve (10) and a control unit (20) for actuating the injection valve (10). Each injection valve (10) comprises a piezoelectric actuator (12), a nozzle element having at least one nozzle opening (15) and at least one movable nozzle needle (13) for selectively closing and opening the at least one nozzle opening (15), a hydraulic coupling element which is connected between the piezoelectric actuator (12) and the nozzle needle (13), and at least one stroke stop (14, 21), against which the nozzle needle (13) bears in its completely open and/or its completely closed position. In order for it to be possible to determine the reaching of the stroke stop (14; 21) in an improved manner in fuel injection valves (10) of this type, it is proposed that the needle stroke stop (14, 21) is determined during a current application pause of the piezoelectric actuator (12) by evaluation of a voltage signal (U) which prevails at the piezoelectric actuator (12). Oscillations of the voltage signal (U) during the current application pause are preferably evaluated. To this end, it is proposed that regression straight lines (30; 31) are laid through the voltage profile (U), a correlation coefficient of the regression straight lines (30; 31) to the voltage profile (U) is determined and a needle stroke stop is detected using the correlation coefficient.

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See references of WO 2008071531A1

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US 2005224050 A1 20051013 - SCHMITFRANZ BERND-HEINRICH [DE], et al

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