Title (en)

Fuel injector valve for a combustion engine.

Title (de)

Kraftstoffeinspritzventil für Brennkraftmaschinen.

Title (fr)

Soupape d'injecteur de combustible pour moteur à combustion.

Publication

EP 0042915 A2 19820106 (DE)

Application

EP 81102371 A 19810328

Priority

DE 3024424 A 19800628

Abstract (en)

1. Fuel-injection valve for internal combustion engines, with a valve needle (3) which opens under the action of the fuel pressure, in the direction of the fuel flow, counter to the force of a closing spring (7), and an induction coil (37) which is installed inside the valve support (18, 18') and can be connected to an evaluating circuit (46), a conducting body (8), composed of a material which can be magnetised, such as soft iron, and coupled to the valve needle (3), projecting into the magnetic field which is generated by the induction coil (37)8 this conducting body (8) influencing the magnetic flux through the induction coil (37) as a function of the position of the valve needle (3), characterised by the following features : (a) the induction coil (37) is located on a supporting body (17, 43) which is made of a material which can be magnetised, such as soft iron, and which is inserted into the valve support (18, 18') ; (b) on the side remote from the valve needle (3), the supporting body (17, 43) is connected to the valve support (18, 18'), which is likewise composed of a material which can be magnetised, the connection being such that magnetic conduction is obtained ; (c) at the end facing the valve needle (3), the supporting body (17, 43) is sealed and magnetically screened with respect to the valve support (18, 18') by means of a separating body (19) which is composed of a magnetically non-conducting material ; (d) the supporting body (17, 43) contains a fuel inlet bore (28), and (e) the end face (15) of the supporting body (17, 43) which faces the valve needle (3) forms, with the conducting body (8), an axial air-gap (14) in the magnetic circuit, this air-gap being variable with the position of the valve needle.

Abstract (de)

Es wird ein Kraftstoffeinspritzventil vorgeschlagen, bei der ein eine Induktionsspule (37) tragendes Einsatzstück (17, 43) aus magnetisch leitendem Material vorgesehen ist und bei Strombeaufschlagung der Induktionsspule einen magnetischen Kreis über einen Ventilträger (18) zum Federtellerhaltering (8) der Ventilnadel und zurück zum Einsatzstück gebildet, wobei zwischen Halterring (8) und der Stirnseite des Einsatzstücks ein durch die Axialbewegung der Ventilnadel (3) veränderbarer Spalt (14) gebildet wird. Die durch die Veränderung der Spaltbreite bewirkte Änderung des Magnetflusses erzeugt eine entsprechende Induktionsspannung, die in einer Auswerteschaltung ausgewertet werden kann.

IPC 1-7

F02M 51/00

IPC 8 full level

F02M 51/06 (2006.01); **F02M 51/00** (2006.01); **F02M 61/08** (2006.01); **F02M 65/00** (2006.01)

CPC (source: EP)

F02M 65/005 (2013.01)

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

EP 0042915 A2 19820106; **EP 0042915 A3 19820630**; **EP 0042915 B1 19840711**; DE 3024424 A1 19820121; DE 3164663 D1 19840816; JP H0222233 B2 19900517; JP S5732052 A 19820220

DOCDB simple family (application)

EP 81102371 A 19810328; DE 3024424 A 19800628; DE 3164663 T 19810328; JP 9761181 A 19810625