

Title (en)

FUEL INJECTOR WITH CLOSED LOOP DETECTION

Title (de)

KRAFTSTOFFINJEKTOR MIT ERKENNUNG VON GESCHLOSSENEM KREISLAUF

Title (fr)

INJECTEUR DE COMBUSTIBLE À DÉTECTION EN CIRCUIT FERMÉ

Publication

**EP 3990772 A1 20220504 (EN)**

Application

**EP 20737106 A 20200626**

Priority

- GB 201909257 A 20190627
- EP 2020068160 W 20200626

Abstract (en)

[origin: GB2585064A] A fuel injector comprises a nozzle 12 with a body 24 defining an internal bore 28 in which a needle 30 is axially moveable and having a spray extremity with injection orifice(s). The needle has an axially symmetrical shaft portion 32 which is tapered at an end 34 and defines a male seating face 44 that cooperates with a female tapered seating face 46 in the needle bore, upstream of the injection orifice(s). The needle includes a protruding annular collar 36 that divides the internal volume of the bore, the collar including substantially symmetrically configured passage means (36.1, Figure 2). A control valve arrangement 14, including a three-way valve, pilots the needle via a control chamber 50. The injector includes a detection circuit 58 in which the needle forms a switch. The female tapered seating face is conical and the male tapered seating face includes a conical surface having an angle ( $\beta$ , Figure 2) of greater than  $75^\circ$ . The control valve may include a fuel escape path (80, Figure 3) connecting the control chamber to a low pressure side of the injector and a fuel feed path (78, Figure 3) connecting the control chamber to a high pressure side of the injector.

IPC 8 full level

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