

Title (en)

Fuel injection device for internal combustion engines.

Title (de)

Kraftstoffeinspritzeinrichtung für Brennkraftmaschinen.

Title (fr)

Dispositif d'injection de combustible pour moteurs à combustion interne.

Publication

**EP 0657644 A3 19951206 (DE)**

Application

**EP 94113012 A 19940820**

Priority

DE 4341546 A 19931207

Abstract (en)

[origin: EP0657644A2] Fuel injection device for internal combustion engines with a high pressure accumulator (9), fillable by a high pressure fuel pump (1), from which accumulator high pressure lines (13) lead off to the individual injection valves (15). At the same time control valves (17) are inserted in the individual high pressure lines (13) in order to control the high pressure injection to the injection valves (15), together with an additional pressure reservoir (19) between the said control valves (17) and the high pressure accumulator (9). For more rapid pressure relief of the injection valve (15) at the end of injection, the valve element (21) of the control valve (17) has a return flow flange (53) which, for maintaining a residual pressure in the pressure line (61) to the injection valve (15), in addition forms a restrictor (55) which is connected to the inlet side of the flat seat valve (45, 47) opening the connection of the injection valve (15) to a relief chamber (65). <IMAGE>

IPC 1-7

**F02M 63/00**; **F02M 59/46**

IPC 8 full level

**F02M 47/00** (2006.01); **F02M 47/02** (2006.01); **F02M 59/46** (2006.01); **F02M 63/00** (2006.01); **F02B 3/06** (2006.01)

CPC (source: EP US)

**F02M 63/0007** (2013.01 - EP US); **F02B 3/06** (2013.01 - EP US)

Citation (search report)

- [A] FR 2449795 A1 19800919 - HUBER MOTORENBAU INST [DE]
- [A] US 4349152 A 19820914 - AKAGI JIRO
- [A] DE 3700687 A1 19870723 - DEREKO DIESELMOTOREN FORSCHUNG [CH], et al

Cited by

DE19907544A1; DE19907544C2; DE19637186A1

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DE FR GB IT

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**DE 4341546 A1 19950608**; DE 59407647 D1 19990225; EP 0657644 A2 19950614; EP 0657644 A3 19951206; EP 0657644 B1 19990113; JP 3742669 B2 20060208; JP H07189851 A 19950728; US 5538187 A 19960723

DOCDB simple family (application)

**DE 4341546 A 19931207**; DE 59407647 T 19940820; EP 94113012 A 19940820; JP 30395594 A 19941207; US 33968494 A 19941114