

Title (en)

Fuel injector with direct needle control for an internal combustion engine

Title (de)

Kraftstoffinjektor mit direkter Nadelsteuerung für eine Brennkraftmaschine

Title (fr)

Injecteur de carburant à commande de poiteau directe pour un moteur à combustion interne

Publication

**EP 1688611 A3 20070110 (DE)**

Application

**EP 05112500 A 20051220**

Priority

DE 102005004738 A 20050202

Abstract (en)

[origin: EP1688611A2] The injector has a needle pressure boosting piston (32) with a control piston (34) axially guided in a cylindrical chamber. Coupler and differential chamber pressure surfaces are exposed to coupler and inner differential pressure chambers, respectively. The piston (32) is associated with an outer differential pressure chamber that communicates via a hydraulic connection with the inner chamber acting on the piston (34).

IPC 8 full level

**F02M 51/06** (2006.01); **F02M 63/00** (2006.01)

CPC (source: EP US)

**F02M 51/0603** (2013.01 - EP US); **F02M 63/0061** (2013.01 - EP US); **F02M 2200/703** (2013.01 - EP US); **F02M 2200/704** (2013.01 - EP US); **F02M 2200/705** (2013.01 - EP US)

Citation (search report)

- [XD] DE 10326046 A1 20041230 - BOSCH GMBH ROBERT [DE]
- [A] DE 10347769 B3 20050113 - SIEMENS AG [DE]

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI SK TR

Designated extension state (EPC)

AL BA HR MK YU

DOCDB simple family (publication)

**EP 1688611 A2 20060809**; **EP 1688611 A3 20070110**; **EP 1688611 B1 20080730**; AT E403082 T1 20080815; DE 102005004738 A1 20060810; DE 502005004874 D1 20080911; US 2006169802 A1 20060803; US 7419103 B2 20080902

DOCDB simple family (application)

**EP 05112500 A 20051220**; AT 05112500 T 20051220; DE 102005004738 A 20050202; DE 502005004874 T 20051220; US 34409906 A 20060201