

Title (en)  
FUEL ELECTRO-INJECTOR ATOMIZER FOR A FUEL INJECTION SYSTEM FOR AN INTERNAL COMBUSTION ENGINE

Title (de)  
ELEKTRISCHE KRAFTSTOFFEINSPRITZDÜSE FÜR EIN EINSPRITZSYSTEM EINES VERBRENNUNGSMOTORS

Title (fr)  
INJECTEUR DE CARBURANT ÉLECTRIQUE POUR UN SYSTÈME D'INJECTION POUR MOTEUR À COMBUSTION INTERNE

Publication  
**EP 3018340 A1 20160511 (EN)**

Application  
**EP 14191911 A 20141105**

Priority  
EP 14191911 A 20141105

Abstract (en)  
An atomizer (10) of a fuel electro-injector (1) for a fuel injection system for an internal combustion engine having a passage (13) that extends along a longitudinal axis (5) and includes a guide hole (46); the atomizer (10) has a sealing seat (21) defined by a chamfer or a fillet, which joins an cylindrical surface (41) inside the passage (13) and an external front surface (40); the atomizer (10) is equipped with a needle (27) having a first slider portion (25) coupled in an axially sliding manner to the guide hole (46), so as to define a dynamic seal and be axially movable under the thrust of an electro-actuator (32) from a closed position, in which a head (20) of the needle (27) is coupled to the sealing seat (21) to close the outlet and define a static seal; the diameter (D) of the dynamic seal is between 2.5 e 3.3 mm, while the difference between the average diameter of the static seal and the diameter of the dynamic seal is such as to generate a maximum axial imbalance of 50 N due to the effect of the fuel pressure around the needle (27) when the latter is positioned in the closed position.

IPC 8 full level  
**F02M 61/08** (2006.01); **F02M 61/12** (2006.01)

CPC (source: EP)  
**F02M 61/08** (2013.01); **F02M 61/12** (2013.01); **F02M 51/0603** (2013.01); **F02M 61/1873** (2013.01); **F02M 61/1893** (2013.01); **F02M 2200/16** (2013.01); **F02M 2200/703** (2013.01); **F02M 2200/705** (2013.01)

Citation (applicant)  
• EP 1559904 A1 20050803 - SIEMENS VDO AUTOMOTIVE SPA [IT]  
• FR 2941745 A3 20100806 - RENAULT SAS [FR]  
• EP 13189601 A 20131021

Citation (search report)  
• [XY] US 7942349 B1 20110517 - MEYER ANDREW E [US]  
• [X] EP 1096136 A2 20010502 - DELPHI TECH INC [US]  
• [X] EP 1783358 A1 20070509 - DELPHI TECH INC [US]  
• [YD] FR 2941745 A3 20100806 - RENAULT SAS [FR]  
• [A] EP 2218900 A1 20100818 - CONTINENTAL AUTOMOTIVE GMBH [DE]

Cited by  
EP3299610A1; US11725618B2; US11008991B2; WO2018141473A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3018340 A1 20160511**; DE 202015009430 U1 20170728; WO 2016071853 A1 20160512

DOCDB simple family (application)  
**EP 14191911 A 20141105**; DE 202015009430 U 20151104; IB 2015058529 W 20151104