

Title (en)  
FUEL INJECTOR

Title (de)  
KRAFTSTOFFEINSPRITZER

Title (fr)  
INJECTEUR DE CARBURANT

Publication  
**EP 3436683 B1 20201202 (FR)**

Application  
**EP 17712989 A 20170322**

Priority  
• FR 1652872 A 20160401  
• FR 1653083 A 20160407  
• EP 2017056890 W 20170322

Abstract (en)  
[origin: WO2017167627A1] The invention relates to a fuel injector for an internal combustion engine, which comprises an injection nozzle (12) with a body (16) inside which a needle (14) is arranged movable between a closed position (PF), in which a first end (48) of the needle (14) rests on a seat (32) and seals injection openings (34) of the nozzle, and an open position (PO), in which the first end (48) of the needle (14) is lifted from the seat (32) thereof in order to allow the injection; a control chamber (46) and a control valve (20); and an upper guide (18) guiding the needle (14) axially by the second end (42) thereof. Means for detecting the position of the needle (14) comprise a first electric link in contact with the second end (42) of the needle (14) so as to bring same to a predetermined electric potential. The needle (14) is mounted in the nozzle body (16) so as to be able to move therein while being electrically isolated from the nozzle body (16), except for the region of the nozzle body seat (32), so that the needle (14) is in electric contact with the nozzle body (16) only in closed position.

IPC 8 full level  
**F02M 47/02** (2006.01); **F02M 51/00** (2006.01); **F02M 61/12** (2006.01); **F02M 65/00** (2006.01)

CPC (source: EP KR US)  
**F02M 47/027** (2013.01 - EP KR US); **F02M 51/005** (2013.01 - EP KR US); **F02M 51/0657** (2013.01 - US); **F02M 61/12** (2013.01 - EP KR US); **F02M 65/005** (2013.01 - EP KR US); **F02M 2200/245** (2013.01 - EP KR US)

Citation (opposition)  
Opponent : Liebherr-Werk Biberach GmbH  
• DE 3506978 A1 19850912 - DIESEL KIKI CO [JP]  
• DE 102011016168 A1 20121011 - ORANGE GMBH [DE]  
• DE 102005049259 B3 20070104 - SIEMENS AG [DE]  
• WO 0216757 A1 20020228 - VOLVO LASTVAGNAR AB [SE], et al  
• WO 2005021958 A1 20050310 - SIEMENS AG [DE], et al  
• WO 2016008640 A1 20160121 - DELPHI INTERNAT OPERATIONS LUXEMBOURG S À R L [LU]  
• US 4066059 A 19780103 - MAYER EDWARD A, et al

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

DOCDB simple family (publication)  
**WO 2017167627 A1 20171005**; CN 109196211 A 20190111; EP 3436683 A1 20190206; EP 3436683 B1 20201202; KR 102268855 B1 20210628; KR 20180122738 A 20181113; US 2019120188 A1 20190425

DOCDB simple family (application)  
**EP 2017056890 W 20170322**; CN 201780032016 A 20170322; EP 17712989 A 20170322; KR 20187031528 A 20170322; US 201716090389 A 20170322