

Title (en)  
Injection Nozzle

Title (de)  
Einspritzdüse

Title (fr)  
Buse à injection

Publication  
**EP 2239452 A1 20101013 (EN)**

Application  
**EP 09156674 A 20090330**

Priority  
EP 09156674 A 20090330

Abstract (en)  
An injection nozzle (20) for an internal combustion engine comprises a nozzle body (22) provided with a bore (24) within which a valve needle (23) is movable along a primary valve needle axis (A-A), the valve needle (23) being engageable with a valve seating (25) defined by the bore (24) to control fuel delivery through a nozzle outlet, and including a first region (36), a second region (38) and a seating region (33) defined by a transition between the first and second regions (36, 38) which seats against the valve seating (25) when the injection nozzle (20) is in a non-injecting state. A relieved region (40) is disposed upstream of the seating region (33), the relieved region (40) and one of the valve seating (25) and the first region (36) defining an anti-cavitation volume (50) therebetween when the injection nozzle (20) is in the non-injecting state. The valve needle (23) and the valve seating (25) together define a restriction (47) upstream of the relieved region (40) for restricting the flow of fuel into and out of the anti-cavitation volume (50) when the injection nozzle (20) is in the non-injecting state in order to reduce pressure wave activity upstream of the seating region (33).

IPC 8 full level  
**F02M 61/16** (2006.01); **F02M 61/18** (2006.01)

CPC (source: EP)  
**F02M 61/16** (2013.01); **F02M 61/18** (2013.01); **F02M 61/1866** (2013.01); **F02M 61/1873** (2013.01)

Citation (search report)  
• [X] DE 10259169 A1 20040701 - BOSCH GMBH ROBERT [DE]  
• [X] DE 102006035832 A1 20080207 - SIEMENS AG [DE]  
• [X] DE 19634933 A1 19980305 - BOSCH GMBH ROBERT [DE]  
• [X] DE 10318989 A1 20031127 - BOSCH GMBH ROBERT [DE]

Cited by  
US10364785B2

Designated contracting state (EPC)  
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 SE SI SK TR

Designated extension state (EPC)  
AL BA RS

DOCDB simple family (publication)  
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