

Title (en)

INJECTION VALVE FOR INTERNAL COMBUSTION ENGINES

Title (de)

EINSPIRZVENTIL FÜR BRENNKRAFTMASCHINEN

Title (fr)

SOUPAPE D'INJECTION POUR MOTEURS À COMBUSTION INTERNE

Publication

**EP 2718558 B1 20160608 (DE)**

Application

**EP 12716423 A 20120424**

Priority

- DE 102011077268 A 20110609
- EP 2012057466 W 20120424

Abstract (en)

[origin: WO2012167990A1] An injection valve for internal combustion engines is specified, which injection valve has a sealing seat, formed by a valve seat (14) and a closing head (15) of a valve needle (16), and a plurality of spray holes (21) which are arranged downstream of the sealing seat. The spray holes (21) of stepped cross section in each case have at least one upstream hole inlet section (22), with a very small hole cross section and a hole inlet opening (221), and a downstream outlet section (23) with a very large hole cross section and a hole outlet opening (231). In order to avoid undesired depositing of burnt fuel on the edges of the hole outlet openings (231), all hole outlet sections (23) are connected to one another via a groove (25) with a groove opening which points downstream.

IPC 8 full level

**F02M 61/18** (2006.01); **F02M 61/16** (2006.01)

CPC (source: EP US)

**F02M 61/166** (2013.01 - EP US); **F02M 61/1806** (2013.01 - EP US); **F02M 61/1846** (2013.01 - EP US); **F02M 61/188** (2013.01 - EP US);  
**F02M 69/04** (2013.01 - US)

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)

**DE 102011077268 A1 20121213**; CN 103582753 A 20140212; EP 2718558 A1 20140416; EP 2718558 B1 20160608;  
JP 2014518986 A 20140807; US 2014224214 A1 20140814; WO 2012167990 A1 20121213

DOCDB simple family (application)

**DE 102011077268 A 20110609**; CN 201280027702 A 20120424; EP 12716423 A 20120424; EP 2012057466 W 20120424;  
JP 2014513957 A 20120424; US 201214124902 A 20120424