

Title (en)

FUEL-INJECTION VALVE AND METHOD FOR PRODUCING A VALVE NEEDLE OF A FUEL-INJECTION VALVE

Title (de)

BRENNSTOFFEINSPRITZVENTIL UND VERFAHREN ZUR HERSTELLUNG EINER VENTILNADEL EINES BRENNSTOFFEINSPRITZVENTILS

Title (fr)

SOUPAPE D'INJECTION DE CARBURANT ET PROCEDE DE PRODUCTION D'UN POINTEAU D'UNE TELLE SOUPAPE

Publication

**EP 0904488 A1 19990331 (DE)**

Application

**EP 97951114 A 19971211**

Priority

- DE 9702879 W 19971211
- DE 19712589 A 19970326

Abstract (en)

[origin: DE19712589C1] The invention relates to a fuel-injection valve which has an axially moving valve needle (12), said valve needle comprising at least at least one closing element support (17) and one spherical valve-closing element (18). The closing element support (17) accommodates the valve-closing element (18) in a lower recess (38), an end area (37) of said closing element support (17) encompassing the valve-closing element (18) in the downstream direction beyond an equator (52) of said valve-closing element (18). The fixed connection between the valve-closing element (18) and the closing element support (17) is achieved by means of bordering. The fuel-injection valve is particularly suitable for use in fuel-injection systems of mixture-compression internal combustion engines with externally supplied ignition.

IPC 1-7

**F02M 51/06**; **F02M 61/16**

IPC 8 full level

**F02M 51/06** (2006.01); **F02M 51/08** (2006.01); **F02M 61/12** (2006.01); **F02M 61/16** (2006.01); **F02M 61/18** (2006.01)

CPC (source: EP US)

**F02M 51/0667** (2013.01 - EP US); **F02M 51/0671** (2013.01 - EP US); **F02M 51/0682** (2013.01 - EP US); **F02M 61/163** (2013.01 - EP US); **F02M 61/168** (2013.01 - EP US); **Y10S 239/90** (2013.01 - EP US)

Citation (search report)

See references of WO 9842975A1

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

**DE 19712589 C1 19980604**; DE 59709237 D1 20030306; EP 0904488 A1 19990331; EP 0904488 B1 20030129; JP 2000511615 A 20000905; US 6079642 A 20000627; WO 9842975 A1 19981001

DOCDB simple family (application)

**DE 19712589 A 19970326**; DE 59709237 T 19971211; DE 9702879 W 19971211; EP 97951114 A 19971211; JP 54464598 A 19971211; US 18012698 A 19981102