

Title (en)

FUEL INJECTION DEVICE FOR INTERNAL COMBUSTION ENGINES

Title (de)

KRAFTSTOFFEINSPRITZVORRICHTUNG FÜR BRENNKRAFTMASCHINEN

Title (fr)

DISPOSITIF D'INJECTION DE CARBURANT POUR MOTEURS A COMBUSTION INTERNE

Publication

EP 0960274 B1 20030129 (DE)

Application

EP 98928124 A 19980403

Priority

- DE 9800945 W 19980403
- DE 19742073 A 19970924

Abstract (en)

[origin: DE19742073A1] The system has a control valve element (23) with a high pressure operating chamber with an electrically controlled series control valve (55) for reducing the pressure and actuating the control valve element. The series control valve has a spring loaded valve element operated by a piezoelectric drive, two valve seats and an intermediate position for a main injection process

IPC 1-7

F02M 63/00; **F02M 45/04**

IPC 8 full level

F02M 51/00 (2006.01); **F02M 45/04** (2006.01); **F02M 45/08** (2006.01); **F02M 59/46** (2006.01); **F02M 61/16** (2006.01); **F02M 63/00** (2006.01); **F02D 41/20** (2006.01)

CPC (source: EP KR US)

F02M 45/04 (2013.01 - EP US); **F02M 63/00** (2013.01 - KR); **F02M 63/0005** (2013.01 - EP US); **F02M 63/0007** (2013.01 - EP US); **F02M 63/0029** (2013.01 - EP US); **F02D 41/2096** (2013.01 - EP US); **F02M 2200/703** (2013.01 - EP US)

Designated contracting state (EPC)

DE FR GB IT SE

DOCDB simple family (publication)

DE 19742073 A1 19990325; CN 1104556 C 20030402; CN 1241244 A 20000112; DE 59807067 D1 20030306; EP 0960274 A1 19991201; EP 0960274 B1 20030129; JP 2001505976 A 20010508; KR 20000069080 A 20001125; US 6067955 A 20000530; WO 9915783 A1 19990401

DOCDB simple family (application)

DE 19742073 A 19970924; CN 98801397 A 19980403; DE 59807067 T 19980403; DE 9800945 W 19980403; EP 98928124 A 19980403; JP 51839399 A 19980403; KR 19997004522 A 19990521; US 30871699 A 19990630