

Title (en)
INJECTION DEVICE AND METHOD FOR INJECTING FLUID

Title (de)
EINSPRITZEINRICHTUNG UND VERFAHREN ZUM EINSPRITZEN VON FLUID

Title (fr)
DISPOSITIF D'INJECTION ET PROCEDE D'INJECTION D'UN FLUIDE

Publication
EP 1259728 B1 20060118 (DE)

Application
EP 01913657 A 20010216

Priority
• DE 0100585 W 20010216
• DE 10006786 A 20000218

Abstract (en)
[origin: WO0161180A2] The invention relates to an injection device comprising a control valve (2), an actuating element which actuates the control valve (2), an injection nozzle which can be controlled by the control valve (2) by building up or decreasing pressure in a control chamber (8). The control valve (2) has at least two switching states. A first pressure is regulated in the control chamber (8) in the first switching state of the control valve (2), wherein the injection nozzle is closed. A second pressure is regulated in the control chamber in the second switching state of the control valve (2), wherein the injection device is open. The control valve (2) has at least a third switching state wherein a third pressure is regulated in the control chamber, said third pressure lying between the first and second pressure and wherein the injection nozzle is opened. The invention also relates to a method for injecting fluid using the inventive injection device.

IPC 8 full level
F02M 47/02 (2006.01); **F02M 45/08** (2006.01); **F02M 47/00** (2006.01); **F02M 51/06** (2006.01); **F02M 63/00** (2006.01)

CPC (source: EP US)
F02M 45/08 (2013.01 - EP US); **F02M 47/02** (2013.01 - EP US); **F02M 47/027** (2013.01 - EP US); **F02M 63/0026** (2013.01 - EP US)

Designated contracting state (EPC)
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)
WO 0161180 A2 20010823; WO 0161180 A3 20020214; AT E316204 T1 20060215; CN 1404550 A 20030319; CZ 20022780 A3 20040414; DE 10006786 A1 20010830; DE 50108750 D1 20060406; EP 1259728 A2 20021127; EP 1259728 B1 20060118; JP 2003522904 A 20030729; US 2003141389 A1 20030731

DOCDB simple family (application)
DE 0100585 W 20010216; AT 01913657 T 20010216; CN 01805192 A 20010216; CZ 20022780 A 20010216; DE 10006786 A 20000218; DE 50108750 T 20010216; EP 01913657 A 20010216; JP 2001560005 A 20010216; US 20417202 A 20021115