

Title (en)

FUEL-INJECTION ARRANGEMENT FOR AN INTERNAL COMBUSTION ENGINE AND FUEL-INJECTION METHOD

Title (de)

BRENNSTOFFEINSPRITZANORDNUNG FÜR EINE BRENNKRAFTMASCHINE UND VERFAHREN ZUR BRENNSTOFFEINSPRITZUNG

Title (fr)

SYSTEME D'INJECTION DE CARBURANT POUR MOTEUR A COMBUSTION INTERNE ET PROCEDE D'INJECTION DE CARBURANT

Publication

EP 0793777 B1 20020320 (DE)

Application

EP 96934346 A 19960808

Priority

- DE 9601487 W 19960808
- DE 19535744 A 19950926

Abstract (en)

[origin: DE19535744A1] The invention concerns a fuel-injection arrangement for an internal combustion engine comprising at least one combustion chamber (4) and at least one intake pipe (3) leading thereto, two fuel-injection valves (1a, 1b) opening into the intake pipe (3) upstream of at least one inlet valve (5) of the combustion chamber (4). One fuel-injection valve (1b) comprises a heater adaptor (14). Whereas, during cold starting and in the engine warm-up phase, to a large extent only the fuel-injection valve (1b) with the heater adaptor (14) is operated and the fuel-injection valve (1a) without a heater is inoperative, there is a change-over from one fuel-injection valve (1a, 1b) to the other at a moment which can be determined on the basis of the value of various operating parameters. The fuel-injection arrangement is suitable in particular for use in mixture-compressing spark-ignition internal combustion engines.

IPC 1-7

F02M 53/06; F02M 69/34; F02D 41/06

IPC 8 full level

F02N 19/00 (2010.01); **F02D 41/06** (2006.01); **F02M 51/06** (2006.01); **F02M 53/06** (2006.01); **F02M 69/00** (2006.01); **F02M 69/04** (2006.01); **F02M 69/34** (2006.01)

CPC (source: EP US)

F02D 41/3094 (2013.01 - EP US); **F02M 53/06** (2013.01 - EP US); **F02M 69/044** (2013.01 - EP US)

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

DE 19535744 A1 19970327; DE 59608922 D1 20020425; EP 0793777 A1 19970910; EP 0793777 B1 20020320; JP H10510029 A 19980929; US 5850822 A 19981222; WO 9712146 A1 19970403

DOCDB simple family (application)

DE 19535744 A 19950926; DE 59608922 T 19960808; DE 9601487 W 19960808; EP 96934346 A 19960808; JP 51305097 A 19960808; US 84904197 A 19970729