

Title (en)

METHOD FOR STARTING AN INTERNAL COMBUSTION ENGINE, IN PARTICULAR ON A MOTOR VEHICLE

Title (de)

VERFAHREN ZUM STARTEN EINER BRENNKRAFTMASCHINE INSBESONDERE EINES KRAFTFAHRZEUGS

Title (fr)

PROCEDE POUR LE DEMARRAGE D'UN MOTEUR A COMBUSTION INTERNE, NOTAMMENT D'UN VEHICULE AUTOMOBILE

Publication

EP 1151194 A1 20011107 (DE)

Application

EP 00983032 A 20001018

Priority

- DE 0003653 W 20001018
- DE 19955857 A 19991120

Abstract (en)

[origin: WO0138726A1] The invention relates to an internal combustion engine, comprising a piston, which is displaceable in a cylinder and acts upon a crankshaft and can cycle through inlet, compression, working and exhaust phases. The controller, in a first operating mode, can inject the fuel directly into the combustion chamber, as defined by the cylinder and piston and in a second operating mode during an inlet phase. Said controller is set, such that, for starting the internal combustion engine, when the crankshaft is stationary, fuel may be injected and ignited (20, 21), in that cylinder (Nr. 1), whose piston (2) is in the compression phase, such that the crankshaft is sent backwards (22).

IPC 1-7

F02N 9/02

IPC 8 full level

F02P 5/15 (2006.01); **F02D 41/02** (2006.01); **F02D 41/06** (2006.01); **F02D 43/00** (2006.01); **F02D 45/00** (2006.01); **F02N 9/02** (2006.01); **F02N 11/08** (2006.01); **F02N 19/00** (2010.01); **F02N 99/00** (2010.01)

CPC (source: EP KR US)

F02N 9/02 (2013.01 - EP KR US); **F02N 19/005** (2013.01 - EP US); **F02N 99/006** (2013.01 - EP US); **F02D 2250/06** (2013.01 - EP US); **F02N 2019/007** (2013.01 - EP US)

Citation (search report)

See references of WO 0138726A1

Designated contracting state (EPC)

DE FR GB IT

DOCDB simple family (publication)

WO 0138726 A1 20010531; DE 19955857 A1 20010607; DE 50015317 D1 20081002; EP 1151194 A1 20011107; EP 1151194 B1 20080820; JP 2003515052 A 20030422; JP 4813721 B2 20111109; KR 100731702 B1 20070622; KR 20020005574 A 20020117; US 6588397 B1 20030708

DOCDB simple family (application)

DE 0003653 W 20001018; DE 19955857 A 19991120; DE 50015317 T 20001018; EP 00983032 A 20001018; JP 2001540045 A 20001018; KR 20017009048 A 20010719; US 88966801 A 20010719