

Title (en)  
Method and determining abnormality in high-pressure fuel injection system

Title (de)  
Fehlererkennungverfahren für ein Hochdruck-Kraftstoffeinspritzsystem

Title (fr)  
Méthode d'identification d'anomalies dans un système d'injection à haute pression

Publication  
**EP 1039117 A3 20030319 (EN)**

Application  
**EP 00105642 A 20000316**

Priority  
JP 8382499 A 19990326

Abstract (en)  
[origin: EP1039117A2] The present invention proposes a method of abnormality determination for a high-pressure fuel injection system, which is capable of enlarging a range where a fuel force-feed timing or a fuel injection timing can be changed, and of determining occurrence of an abnormality with high precision. An electronic control unit (ECU)(60) detects a change in fuel pressure in a common rail (20) (rail pressure change amount), estimates a change in rail pressure based on an injection command value, a force-feed command value and the like, and makes a first abnormality determination based on the detected value and the estimated value. If occurrence of an abnormality is confirmed in the first abnormality determination, the ECU (60) restricts a timing for starting force-feeding of fuel such that only fuel injection is carried out in a second determination period. The ECU (60) then compares a detected value of a change in rail pressure with a value of a change in rail pressure estimated based on the injection command value and the like, and additionally makes a second abnormality determination. <IMAGE>

IPC 1-7  
**F02D 41/22**; **F02D 41/38**

IPC 8 full level  
**F02D 41/22** (2006.01); **F02D 41/38** (2006.01); **F02D 45/00** (2006.01); **F02M 63/00** (2006.01); **F02M 65/00** (2006.01)

CPC (source: EP)  
**F02D 41/22** (2013.01); **F02D 41/3809** (2013.01); **F02D 2041/224** (2013.01); **F02D 2200/0604** (2013.01)

Citation (search report)  
• [XA] EP 0860600 A2 19980826 - TOYOTA MOTOR CO LTD [JP]  
• [A] US 5708202 A 19980113 - AUGUSTIN ULRICH [DE], et al  
• [A] PATENT ABSTRACTS OF JAPAN vol. 1996, no. 05 31 May 1996 (1996-05-31)

Cited by  
DE10136706B4; CN100357584C; EP1201905A3; CN102705089A; CN109488502A; CN102812226A; DE102010013602B4; FR3007135A1; DE102006000459B4; CN110753786A; CN111810307A; DE112008001486B4; US7267106B2; US9051893B2; WO2011120848A1; WO2004031561A1; WO2014199086A1; WO2008147319A1; JP2013144937A

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

DOCDB simple family (publication)  
**EP 1039117 A2 20000927**; **EP 1039117 A3 20030319**; **EP 1039117 B1 20041020**; DE 60014997 D1 20041125; DE 60014997 T2 20050310; ES 2228321 T3 20050416; JP 2000282932 A 20001010; JP 4158272 B2 20081001

DOCDB simple family (application)  
**EP 00105642 A 20000316**; DE 60014997 T 20000316; ES 00105642 T 20000316; JP 8382499 A 19990326