



(12) EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
07.06.2006 Bulletin 2006/23

(51) Int Cl.:
F02P 19/02^(2006.01) F02P 17/00^(2006.01)

(43) Date of publication A2:
08.10.2003 Bulletin 2003/41

(21) Application number: 03007258.1

(22) Date of filing: 31.03.2003

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IT LI LU MC NL PT RO SE SI SK TR
Designated Extension States:
AL LT LV MK

(72) Inventor: Amano, Naoki,
c/o Toyota Jidosha Kabushiki Kaisha
Toyota-shi,
Aichi-ken 471-8571 (JP)

(30) Priority: 01.04.2002 JP 2002099128

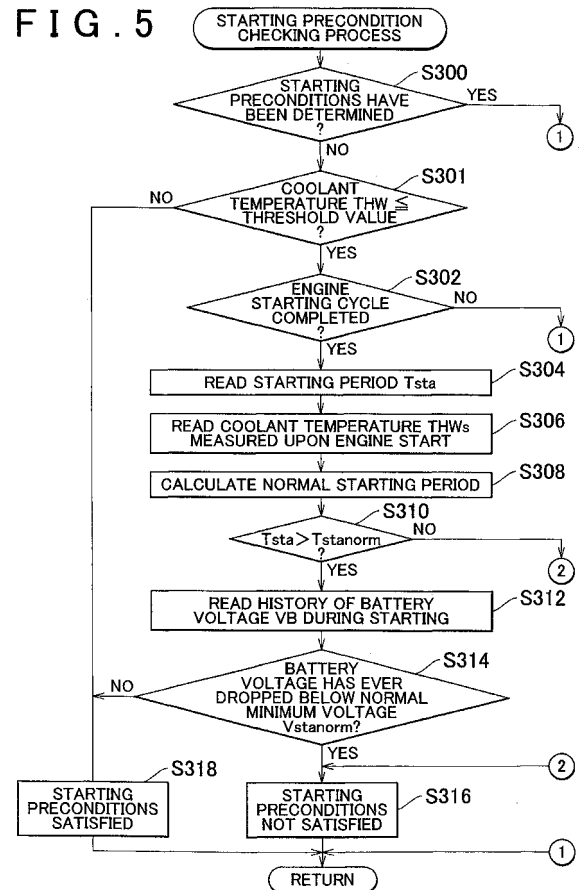
(74) Representative: TBK-Patent
Bavariaring 4-6
80336 München (DE)

(71) Applicant: Toyota Jidosha Kabushiki Kaisha
Toyota-shi, Aichi-ken 471-8571 (JP)

(54) Apparatus and method for detecting fault in glow plug

(57) In method and apparatus for detecting a fault in a glow plug provided in a diesel engine, a possibility of a fault in the glow plug is determined without utilizing a forced change in the state of energization of the glow plug for the purpose of diagnosis, before the presence of a fault in the glow plug is determined by utilizing the forced change in the state of energization of the glow plug. The process of determining the presence of the fault is not executed if it is determined in the process of determining the possibility of the fault that there is no possibility of a fault in the glow plug.

FIG. 5





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	PATENT ABSTRACTS OF JAPAN vol. 1998, no. 03, 27 February 1998 (1998-02-27) & JP 09 291873 A (DENSO CORP), 11 November 1997 (1997-11-11) * abstract; figure *	1-22	INV. F02P19/02 F02P17/00
X	EP 0 894 976 A (TOYOTA JIDOSHA KABUSHIKI KAISHA) 3 February 1999 (1999-02-03) * figure 5 *	1-22	
A	PATENT ABSTRACTS OF JAPAN vol. 2002, no. 05, 3 May 2002 (2002-05-03) & JP 2002 013461 A (ISUZU MOTORS LTD), 18 January 2002 (2002-01-18) * abstract *	1-22	
A	PATENT ABSTRACTS OF JAPAN vol. 016, no. 299 (M-1274), 2 July 1992 (1992-07-02) & JP 04 081578 A (ZEXEL CORP), 16 March 1992 (1992-03-16) * abstract *	1-22	
The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC)
			F02P F02D
1	Place of search Munich	Date of completion of the search 24 April 2006	Examiner Olivieri, E
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

EPO FORM 1503 03.82 (F04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 03 00 7258

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

24-04-2006

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 09291873 A	11-11-1997	NONE	
EP 0894976 A	03-02-1999	DE 69831537 D1 JP 3475732 B2 JP 11044285 A	20-10-2005 08-12-2003 16-02-1999
JP 2002013461 A	18-01-2002	NONE	
JP 04081578 A	16-03-1992	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82